

BMJ Open

BMJ Open is committed to open peer review. As part of this commitment we make the peer review history of every article we publish publicly available.

When an article is published we post the peer reviewers' comments and the authors' responses online. We also post the versions of the paper that were used during peer review. These are the versions that the peer review comments apply to.

The versions of the paper that follow are the versions that were submitted during the peer review process. They are not the versions of record or the final published versions. They should not be cited or distributed as the published version of this manuscript.

BMJ Open is an open access journal and the full, final, typeset and author-corrected version of record of the manuscript is available on our site with no access controls, subscription charges or pay-per-view fees (<http://bmjopen.bmj.com>).

If you have any questions on BMJ Open's open peer review process please email info.bmjopen@bmj.com

BMJ Open

How can the Healthcare System Deliver Sustainable Performance? A Scoping Review

Journal:	<i>BMJ Open</i>
Manuscript ID	bmjopen-2021-059207
Article Type:	Original research
Date Submitted by the Author:	16-Nov-2021
Complete List of Authors:	Zurynski, Yvonne; Macquarie University, Australian Institute of Health Innovation Herkes, Jessica; Macquarie University, Australian Institute of Health Innovation Holt, Joanna; Macquarie University, Australian Institute of Health Innovation McPherson, Elise; Macquarie University, Australian Institute of Health Innovation Lamprell, Gina; Macquarie University, Australian Institute of Health Innovation Dammery, Genevieve; Macquarie University, Australian Institute of Health Innovation Meulenbroeks, Isabelle; Macquarie University, Australian Institute of Health Innovation Halim, Nicole; Macquarie University, Australian Institute of Health Innovation Braithwaite, Jeffrey; Macquarie University, Australian Institute of Health Innovation
Keywords:	PUBLIC HEALTH, QUALITATIVE RESEARCH, Health policy < HEALTH SERVICES ADMINISTRATION & MANAGEMENT

SCHOLARONE™
Manuscripts



I, the Submitting Author has the right to grant and does grant on behalf of all authors of the Work (as defined in the below author licence), an exclusive licence and/or a non-exclusive licence for contributions from authors who are: i) UK Crown employees; ii) where BMJ has agreed a CC-BY licence shall apply, and/or iii) in accordance with the terms applicable for US Federal Government officers or employees acting as part of their official duties; on a worldwide, perpetual, irrevocable, royalty-free basis to BMJ Publishing Group Ltd ("BMJ") its licensees and where the relevant Journal is co-owned by BMJ to the co-owners of the Journal, to publish the Work in this journal and any other BMJ products and to exploit all rights, as set out in our [licence](#).

The Submitting Author accepts and understands that any supply made under these terms is made by BMJ to the Submitting Author unless you are acting as an employee on behalf of your employer or a postgraduate student of an affiliated institution which is paying any applicable article publishing charge ("APC") for Open Access articles. Where the Submitting Author wishes to make the Work available on an Open Access basis (and intends to pay the relevant APC), the terms of reuse of such Open Access shall be governed by a Creative Commons licence – details of these licences and which [Creative Commons](#) licence will apply to this Work are set out in our licence referred to above.

Other than as permitted in any relevant BMJ Author's Self Archiving Policies, I confirm this Work has not been accepted for publication elsewhere, is not being considered for publication elsewhere and does not duplicate material already published. I confirm all authors consent to publication of this Work and authorise the granting of this licence.

1
2
3 HOW CAN THE HEALTHCARE SYSTEM DELIVER SUSTAINABLE PERFORMANCE? A
4
5 SCOPING REVIEW
6

7 Yvonne Zurynski, Jessica Herkes-Deane, Joanna Holt, Elise McPherson, Gina Lamprell,
8
9 Genevieve Dammary, Isabelle Meulenbroeks, Nicole Halim, Jeffrey Braithwaite
10
11
12
13

14 *Yvonne Zurynski and *Jessica Herkes-Deane are joint first authors
15

16
17 *Yvonne Zurynski, PhD, BAppSc, MAppSc, MHPol
18

19 Centre for Healthcare Resilience and Implementation Science and the NHMRC Partnership
20

21 Centre for Health System Sustainability, Australian Institute of Health Innovation
22

23 Macquarie University
24

25 Sydney, NSW, Australia
26
27
28
29
30
31
32

33 *Jessica Herkes-Deane BSc(Adv), MRes
34

35 Centre for Healthcare Resilience and Implementation Science and the NHMRC Partnership
36

37 Centre for Health System Sustainability, Australian Institute of Health Innovation
38

39 Macquarie University
40

41 Sydney, NSW, Australia
42
43
44
45
46

47 Joanna Holt BSc(Hons); MHP
48

49 Centre for Healthcare Resilience and Implementation Science and the NHMRC Partnership Centre
50

51 for Health System Sustainability, Australian Institute of Health Innovation
52

53 Macquarie University
54

55 Sydney, NSW, Australia
56
57
58
59
60

1
2
3
4
5 Elise McPherson BA, BSc(Hon), MRes
6

7 Centre for Healthcare Resilience and Implementation Science, Australian Institute of Health
8

9
10 Innovation,
11

12 Macquarie University
13

14 Sydney, NSW, Australia
15
16
17
18

19 Gina Lamprell BA(Hons)
20

21 Centre for Healthcare Resilience and Implementation Science, Australian Institute of Health
22

23 Innovation
24

25
26 Macquarie University
27

28 Sydney, NSW, Australia
29
30
31
32

33 Genevieve Dammery BSc(Hons)
34

35 NHMRC Partnership Centre for Health System Sustainability, Australian Institute of Health
36

37 Innovation
38

39 Macquarie University
40

41 Sydney, NSW, Australia
42
43
44
45
46

47 Isabelle Meulenbroeks B. Physio, MPH
48

49 NHMRC Partnership Centre for Health System Sustainability, Australian Institute of Health
50

51 Innovation
52

53 Macquarie University
54

55 Sydney, NSW, Australia
56
57
58
59
60

1
2
3
4
5 Nicole Halim BSc, MPH
6

7 Centre for Healthcare Resilience and Implementation Science and the NHMRC Partnership

8
9 Centre for Health System Sustainability, Australian Institute of Health Innovation

10
11 Macquarie University

12
13 Sydney, NSW, Australia
14
15
16
17
18

19 Jeffrey Braithwaite PhD, FIML, FCHSM, FFPHRCP, FAcSS, Hon FRACMA, FAHMS

20
21 Centre for Healthcare Resilience and Implementation Science and the NHMRC Partnership

22
23 Centre for Health System Sustainability, Australian Institute of Health Innovation

24
25 Macquarie University

26
27 Sydney, NSW, Australia
28
29
30
31
32

33 **Corresponding author:**

34
35 Jeffrey Braithwaite

36
37 Australian Institute of Health Innovation

38
39 Macquarie University

40
41 Level 6, 75 Talavera Road

42
43 North Ryde, NSW 2109,

44
45 Australia
46
47

48
49 jeffrey.braithwaite@mq.edu.au

50
51 Phone: + 61 2 9850 2401

52
53 Words Abstract: 295

54
55 Words Manuscript: 3858
56
57

HOW CAN THE HEALTHCARE SYSTEM DELIVER SUSTAINABLE PERFORMANCE? A SCOPING REVIEW

Abstract

Background: Increasing health costs, demand and patient multi-morbidity challenge the sustainability of healthcare systems. These challenges persist and have been amplified by the global pandemic. We aimed to develop an understanding of how the sustainable performance of healthcare systems (SPHS) has been conceptualised, defined, and measured.

Methods: We conducted a scoping review, of peer reviewed articles and editorials published from database inception to February 2021. We included articles that discussed key focus concepts of SPHS: 1) definitions, 2) measurement, 3) identified challenges, 4) identified solutions for improvement, and 5) scaling up successful solutions to maintain SPHS. After screening procedures, full-text articles were reviewed, and relevant information extracted and synthesised according to the five focus concepts.

Results: Of 142 included articles, 38 (27%) provided a definition of SPHS. Definitions were based mainly on financial sustainability, however, SPHS was more broadly conceptualised and included acceptability to patients and workforce, resilience through adaptation and rapid absorption of evidence and innovations. Measures of SPHS were also predominantly financial, but recent articles proposed more nuanced measures that accounted for financial, social and health outcome outputs. Challenges to achieving SPHS included the increasingly complex patient populations, limited integration because of entrenched fragmented systems and siloed professional groups, and the ongoing translational gaps in evidence-to-practice and policy-to-practice. Reported strategies to improve and sustain SPHS included developing appropriate

1
2
3 organisational and workplace cultures, direct community and consumer involvement, and
4
5 adoption of evidence-based practice and technologies. There was also a strong identified need for
6
7 long term monitoring and evaluations to support adaptation of healthcare systems and to
8
9 anticipate changing needs where possible.

10
11 **Conclusions:** To implement lasting change and to respond to new challenges, we need clear
12
13 definitions and frameworks, and robust, flexible, and feasible measures to support the long term
14
15 sustainability and performance of health systems.
16
17

18
19 **Keywords:** healthcare system sustainability, sustainable performance of healthcare systems,
20
21 healthcare services, value in healthcare
22
23
24
25
26
27
28
29

30 31 *Strengths and limitations of this study*

- 32
33 • This scoping review addresses a knowledge gap by providing a comprehensive synthesis
34
35 of the literature including definitions, measurement, challenges, solutions for
36
37 improvement, and scaling up successful solutions to maintain sustainable performance of
38
39 health systems (SPHS).
40
41
- 42
43 • We were guided by the PRISMA-ScR methodology, searching multiple databases and
44
45 using complementary snowballing techniques to increase comprehensiveness.
46
47
- 48
49 • The use of the Hawker and AACODS quality appraisal tools provided an assessment of
50
51 the quality of literature on the sustainable performance of healthcare systems.
52
53
- 54
55 • We highlight a paucity of uniform definitions and the lack of inclusion of definitions in
56
57 articles discussing SPHS, which limits interpretation and comparability.
58
59
60

- The review identifies new, more nuanced measures and indicators that include social and health outcomes, moving beyond the more traditionally-used financial outcomes that have dominated the assessment of SPHS.

For peer review only

Background

Globally, health spending is tracking above and beyond economic growth [2]. Core challenges facing healthcare systems include an ageing population and subsequent rise of chronic diseases and multimorbidity [3, 4], and increasingly expensive new medical technologies [4, 5]. It is estimated that approximately 30% of care delivered by healthcare systems is low-value, attributable mainly to administrative overheads, bureaucracy, over-diagnosis, overtreatment or other factors [6]. Systems lacking coordination and integration across clinical disciplines and health sectors also result in wasteful spending through both care duplication and omission of needed care [7]. If health spending follows current trajectories, governments are suggesting that healthcare systems will begin to become unaffordable [4]. This leads us to the question: “what is the current thinking about interventions and initiatives to make healthcare systems more sustainable?” Understanding how health system sustainability is conceptualised underpins the implementation and evaluation of system-wide interventions that aim to improve performance. Although literature about the sustainability of individual innovations and improvement programs is growing [8], the broad question of whole-of-system sustainability is rarely studied.

Sustainability itself has remained an ambiguous topic in the literature. Sustainability suggests that healthcare systems should be built to last, and able to adapt and endure, ensuring that resources are expended efficiently and responsibly to maintain or improve individual and population health and wellbeing [9]. To be sustainable, a healthcare system must adequately deliver across financial, social, and environmental concerns [5]. This triple bottom-line is difficult to achieve consistently over time. For example, sustainable health services may need additional short-term investments to be financially beneficial in the long-term [2].

1
2
3
4
5 We define the health system as one that delivers care to those who need it across many different
6 settings. It includes key components: capacity, including physical, capital, and human assets;
7
8 organisational structure, both formal and informal; finances, including mechanisms for funding
9
10 allocations, ownership, and solvency; patients or clients and their characteristics and needs; and
11
12 care processes and infrastructure [10].
13
14
15
16
17
18

19 Healthcare system sustainability is difficult to measure in practice and requires ongoing long-
20 term monitoring and evaluation of appropriate indicators. One potential way to conceptualise and
21 operationalise sustainability is an assessment of the sustainable performance of healthcare
22 systems (SPHS). Although past reviews have addressed the sustainability of improvement
23 programs and policies in the healthcare system [8, 11, 12], they did not specifically address how
24 SPHS is conceptualised in the medical literature. As a response, the current study was designed
25 using a systems science lens to fill this gap in knowledge by reviewing publications that report on
26 or discuss healthcare system sustainability.
27
28
29
30
31
32
33
34
35
36
37
38
39

40 **Objectives**

41
42 This scoping review of health and medical literature aims to develop an understanding of how
43 SPHS has been conceptualised, defined, and measured, and to scope the identified challenges and
44 potential solutions to achieving and maintaining SPHS.
45
46
47
48
49
50

51 **Methods**

52 ***Study Design***

53
54
55
56
57
58
59
60

1
2
3 In keeping with scoping review methodology [13], our inclusion criteria were broad and
4 comprehensive to capture the state of knowledge about SPHS. We included literature reviews,
5 primary empirical articles (including qualitative, quantitative, and mixed methods studies), case
6 studies, opinion pieces, and editorials published in English before February 2021. To be included,
7 studies had to report on, or discuss in detail, aspects of healthcare systems sustainability,
8 resilience, or performance improvement, and could cover improvements in cost-effectiveness,
9 affordability, safety, quality, equity, or access, whilst creating or realising value (Table 1). Only
10 articles that addressed the research objectives and provided insights into current knowledge of
11 sustainability in healthcare delivery systems were included. Articles on environmental
12 sustainability; those investigating discrete improvement programs implemented in specific health
13 settings; and studies with a specific focus on COVID-19 were out of scope (Table 1).
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29

30 ***Information Sources***

31
32 In consultation with an experienced university medical librarian, we developed a search strategy
33 using key words and MeSH terms and conducted an advanced search of PubMed and Ovid
34 Medline (Additional File 1). Additional relevant articles were identified by hand searching
35 reference lists of included articles (snowballing).
36
37
38
39
40
41
42
43
44

45 ***Study Selection***

46 Guided by the Preferred Reporting Items for Systematic review and Meta-Analysis extension for
47 Scoping Reviews (PRISMA-ScR) statement [14, 15], and the methodological framework for
48 scoping reviews [13] (Additional File 3), a preliminary screening of the article titles and abstracts
49 was conducted by four reviewers (JHo, JHe, GD and EM) using the inclusion and exclusion
50 criteria (Table 1, Additional File 4). The full-text review was then conducted by a second
51
52
53
54
55
56
57
58
59
60

reviewer team (JHe, YZ, GD, IM and GL) in consultation with the first reviewer team (JHo and EM).

Quality Assessment of Individual Studies

Hawker et al.'s Quality Assessment Tool was applied as it enables quality assessment among many different article types including quantitative, qualitative, or mixed-methods empirical research studies or literature reviews [16]. The Quality Assessment Tool contains nine categories (abstract and title; introduction and aims; method and data; sampling; data analysis; ethics and bias; results; transferability or generalizability; and implications and usefulness) and a total quality score can be calculated with a maximum score of 36, where higher scores denote higher quality [16]. Only articles that scored 24 points or above were included in our review [17, 18]. For quality assessment of opinion or commentary pieces, we used the Authority Accuracy Coverage Objectivity Date Significance (AACODS) Checklist [13, 18].

Data Extraction

Characteristics of included articles, year of publication, country of origin, and article type were tabulated. A purpose-designed Excel spreadsheet was used to extract relevant details from each article including SPHS definitions, measures and measurement frameworks, challenges, solutions, and factors that contribute to sustainment and scaling of system change. The Excel spreadsheet was piloted by three reviewers on a subset of five articles and adjusted as needed.

Patient and Public Involvement

No patients involved.

Results

Study Selection

Of 5675 articles identified in the database searches, 2404 were duplicates, leaving 3271 articles.

Undertaking independent title and abstract screening of 5% of articles, two reviewers achieved an acceptable level of agreement (Kappa score = 0.6)[19] A further 2750 articles were excluded, leaving 521 articles for full-text review. A substantial level of agreement was achieved on review of 5% of full text articles undertaken independently by four reviewers JHe, YZ, GD and IM; (Kappa = 0.7)[19]. After full text review, 136 were included. Eighty-three additional articles were identified from snowballing, and six of these met the inclusion criteria, for a total of 142 articles included for data extraction (Figure 1). Additional File 1 provides a table detailing the search and a summary of the included articles.

Figure 1. PRISMA flow diagram summarising the review and reasons for article exclusion*

*Full text articles and snowballed articles excluded for the following reasons. Note that some articles were excluded for multiple reasons.

Table 1. Reasons for article exclusion

Reason	Exclusion at abstract screening	Exclusion at full text review
Disaster or emergency	199	3
Foreign aid, equity, or community healthcare	598	20
Occupational health and safety	69	2
Environmental sustainability	89	5
Not relevant to Australia e.g. low-resource setting	730	82
Not about systems e.g., single disease or program	1291	109
Preventative e.g., regarding vaccination or nutrition	277	18
Not relating to healthcare delivery e.g., regarding animal care or food safety	46	0
Regarding physiology/pharmacology	44	0
Does not in another way define, measure, identify challenges, opportunities for improvement or scale up of sustainability in the healthcare system	398	166
Other e.g., article not written in English, full text not available	4	95
Totals	3745	500

Study Characteristics

Of the included articles, 18 were review articles (either systematic or narrative), 82 were editorial or opinion pieces, 37 were primary empirical studies, and five were a combination of a brief narrative review and an empirical study (classified as empirical for simplicity). Empirical studies used a wide variety of data collection techniques and included qualitative analysis of interviews,[20] survey results,[21, 22] analysis of hospital data records,[23, 24] and economic analysis [25-29]. The included articles described studies that covered various geographic

1
2
3 locations, most commonly Canada (n=22), the United States of America (n=22), Australia (n=23,
4 including two which involved Australia and New Zealand), the United Kingdom (n=6), the
5 European Union as a whole rather than individual countries (n=8), the Netherlands (n=2) and one
6 each from Austria, Italy, Northern Ireland, Malaysia, Malta, New Zealand, Nordic countries,
7 Oman, the Philippines, Portugal, Scotland, Spain, and the Western Pacific Region. Forty-two
8 studies discussed healthcare system sustainability on an international scale, one included the
9 United States of America, the United Kingdom, and Australia [30] and another included
10 Australia, Ireland, Austria and Denmark [31].
11
12
13
14
15
16
17
18
19
20
21
22
23

24 The data extraction sheet included the citation, study aims, study design, themes addressed, and
25 additional relevant information about SPHS, (Additional File 1). Of the 142 articles, most
26 identified challenges (n=94, 66%) and proposed ways to improve SPHS (n=89, 62%) while fewer
27 discussed measuring SPHS (n=48, 34%), or sustaining and scaling change (n=47, 33%) and
28 fewer still provided any definition of SPHS (n=38, 27%).
29
30
31
32
33
34
35
36
37

38 ***Bias and Quality in Included Studies***

39
40 Forty-three empirical studies scored 25-34 points on the Hawker's Quality Assessment Tool,[16];
41 29 of high quality, 13 moderate quality, and one borderline low quality [17]. None of the
42 empirical articles were excluded due to potential bias or low quality (Additional File 2). The
43 quality of editorial and opinion pieces (n = 99) was analysed according to the AACODS criteria,
44 and 72 articles ranked 'yes' for all criteria indicating high quality, (Additional File 2).
45
46
47
48
49
50
51
52
53

54 **Synthesis of Results and Discussion**

55 ***Defining SPHS***

1
2
3 Definitions of SPHS were provided by 25 editorial or opinion pieces, seven review articles, and
4
5 six empirical studies (Table 2). The definitions fell into three broad groupings: 1) fiscal
6
7 sustainability, 2) human resource sustainability and acceptance of change by stakeholders, and 3)
8
9 system adaptability and improvement over time (Table 2). Definitions focused on the importance
10
11 of continual improvement [30], and acceptance and embeddedness of changes into the fabric of
12
13 the healthcare system via ongoing approval from stakeholders [32-34]. Generally, definitions
14
15 were aligned with the authors' aims or concerns, e.g., Rees [30], who tackled sustainability in
16
17 relation to Lean activities, and Buchan [35] who argued for the importance of human resource
18
19 development to support SPHS.
20
21
22
23
24
25

26 Articles defining SPHS in terms of fiscal sustainability [25, 33, 34, 36-39] included, for example,
27
28 discussions of sustainability of rural primary care services in the face of ongoing policy change
29
30 on reimbursement and practice incentives [38], adoption of new funding models to ensure
31
32 availability of needed medicines [25], and adjusting hospital capital investments to improve
33
34 patient access to care [37]. Articles also discussed the importance of balancing financial interests
35
36 with social and ecological interests [40].
37
38
39
40
41

42 Several papers conceptualised SPHS as the continuation of programs after the cessation of initial
43
44 external program-specific funding [41-43]. This aligns with findings from a recent systematic
45
46 review that specifically focused on the sustainability of health improvement programs[44].
47
48

49 Conceptualising sustainability of programs or interventions as an integral part of SPHS is
50
51 sensible. However, it is desirable for such definitions to be broadened to include the impacts of
52
53 sustained programs and interventions at the whole of system level.
54
55
56
57

Four articles [45-48] discussed SPHS through the lens of a learning health system, a system in which ‘science, informatics, incentives, and culture are aligned for continuous improvement and innovation’[49]. These articles focussed predominantly on using data and evidence to support system adaptability and improvement over time.

Table 2. Definitions of SPHS

Definition	Exemplar Quotes	Relevant References		
		Empirical articles	Editorials or opinion pieces	Reviews
Fiscal sustainability	“The WHO considers fiscal sustainability as a requirement, rather than an objective, of health financing policy. Sustainability of healthcare financing therefore cannot be interpreted as a reduction of healthcare costs, but rather as a predictable growth or control of health expenditures.”[25]	[37, 38, 50, 51]	[25, 33, 34, 36, 39, 41, 52]	[42, 43, 50, 53, 54]
Human resource sustainability and acceptability to stakeholders	“It has been increasingly recognised that getting HR policy and management "right" has to be at the core of any sustainable solution to health system performance”[33, 35] “A sustainable health system also has acceptability to key constituents, including patients and health professionals.” [34]	[51]	[33-36, 40, 52, 55-60]	[32, 54]
Adaptability and improvement over time to create a future-focused intervention	“A sustainable health system ... [has] adaptability, because health and health care needs are not static (i.e., a health system must respond adaptively to new diseases, changing demographics, scientific discoveries, and dynamic technologies in order to remain viable).”[34] “Ensuring that sufficient resources are available over the long term to provide	[38, 46]	[5, 34, 41] [45, 52, 57-67]	[32, 53, 54, 68, 69]

timely access to quality services that address Canadians' evolving health needs." [61]

Measuring SPHS

The measurement of SPHS was addressed through theoretical discussions across the 24 editorials and seven review articles, and by proposing, developing, or applying measures or indicators (in 17 empirical studies). There are interesting contrasts in the levels at which measurement occurred or was recommended—that is, the boundaries of the 'healthcare system' were variously conceptualised across studies when talking about measures. The complex problem of where to appropriately bound a system has been identified as both interesting and problematic [70]. For example, some studies measure SPHS at a hospital level [71], whereas other studies address it at a national system level [72], making comparisons across studies difficult.

Frameworks and indicators to measure SPHS were heterogeneous (Table 3). The need to measure financial, social and health outputs of health systems were highlighted in recent publications [73]. Some articles criticised the current focus on fiscal metrics of SPHS [36, 74]. Sepehri and Chernomas [36] noted that fiscal metrics assume that providers respond to needs and current medical knowledge, however, this assumption does not always hold. Population health outcomes, such as mortality or burden of chronic disease, were also considered valid indicators of SPHS, but required ongoing timely measurement over the long-term to demonstrate trends and to model future needs [69, 75].

A recent paper [76] suggested that composite metrics combining quality of care, equity of access and health spending may provide a more nuanced measure of SPHS [76]. A variety of new SPHS

measures were proposed, developed, modified, or tested in research environments [21, 23, 48, 68, 71, 77] to address a deficit in currently available measures (Table 3). For example, the Q*Scale was designed to combine data on caseload, patient satisfaction and physician aptitude, such that changes in hospital performance due to policy changes could be more effectively measured [71]. In contrast, the Dynamic Sustainability Framework (DSF) seeks to investigate the fit between the intervention, practice settings, contexts and cultures, health policies, and the broader ecology within which healthcare systems operate, including socio-political systems [41]. Similarly, the Health Care Sustainability Framework (HCSF) and the Responsible Innovations for Health (RIH) framework, recognise the importance of accounting for the needs and trends of the population, workforce, and financial constraints [78, 79].

Models utilising a scoring system (e.g. using the Resilience Indicator) to quantify healthcare resilience were based on data-driven simulation modelling,[80] or theoretical composite indicators of the value of healthcare systems [80, 81]. However, the extent to which such models and indicators are used to support decision making in the real world is currently uncertain.

Table 3. Summary of established and novel frameworks suggested for measuring SPHS

Established framework name	Rationale for use
Organisational Change Model (OCM)	To measure the success of sustained organisational change, according to faculty member survey respondents [77]
Analysis of hospital records (e.g., payroll records)	Measuring staff turnover, workforce supply and financial sustainability [23, 27]
Evaluation of health networks	To evaluate the effectiveness and sustainability of health networks [82]
Novel framework name	Rationale for development
Q* Scale	To measure performance at the hospital level [71]

Dynamic Sustainability Framework (DSF)	To investigate the fit between the intervention, the practice setting, and the ecological system [41] To improve measurement of SPHS beyond patient outcomes only [42]
Resilience Indicator	To highlight the systemic relevance of primary care network systems to quantify healthcare resilience [80]
eMergy (embodied energy) Sustainability Index	To address the lack of qualitative indicators for sustainability [68]
Future Health Index (FHI)	To identify preparedness of countries to building sustainable health systems [81]
Health Care Sustainability Framework (HCSF)	To measure the relationships between political and fiscal sustainability of an intervention [78]
Responsible Innovations for Health (RIH) Framework	To identify interventions that suitably address five domains (population health, healthcare system, economic, organisational, environmental)[79]
Research Lifecycle Framework	To enhance the impact of the Learning Health System by operationalising research innovations into clinical practice [48]
Value Of Diagnostic Information (VODI) Framework	To outline the multidimensional benefits and potential of healthcare diagnostics [83]

Ultimately, although measurements of sustainability were heterogeneous [42], they could be classified into three broad outcome levels: 1) Individual (e.g., continued health benefits for patients or healthcare providers), 2) Organisational (e.g., continuation of innovations, hospital level fiscal improvements), or 3) Community (e.g., continued use of programs, services or health interventions). The frameworks presented in Table 4 promise more nuanced measures of SPHS. However, these need to undergo robust testing in different systems and contexts to ensure they provide valid, meaningful information to support SPHS.

Identified Challenges to SPHS

1
2
3 Ninety-four articles, including 60 editorials, 22 empirical studies and 12 reviews, identified
4 challenges to SPHS across three main themes: 1) increasingly complex patient populations; 2)
5 ongoing gaps between policy and practice; and 3) concerns of system fragmentation and need for
6 integration for a more streamlined adoption and sustainment of interventions.
7
8
9
10
11
12

13
14 Numerous articles identified challenges posed by increasingly complex patient populations [4,
15 24, 52, 80, 84-90], including complex patients with multiple comorbidities,[22, 51, 80, 85, 86,
16 88, 91, 92] and greater demand for effective aged care, under already strained healthcare budgets
17 [4, 28, 52, 59, 93-98]. In addition, patients also have higher expectations of receiving healthcare
18 of high quality that meets their needs [5, 22, 85, 86, 88, 99, 100]. Healthcare systems must strive
19 to understand the populations they currently serve and to adapt as populations and their needs
20 change.
21
22
23
24
25
26
27
28
29
30
31
32

33 A recurring discussion centred on the gap between policy and practice [42, 101, 102]. To bridge
34 this gap, greater investment in the system is sought,[36, 64, 74, 94, 95], including funding novel
35 health interventions [27, 42, 55, 103, 104] and upskilling staff [31, 105]. For example, one article
36 highlighted several challenges in realising the latter, including inadequate stakeholder
37 involvement and organisational leadership unwilling to invest in training programs [31, 46]. To
38 sustain performance, publicly funded health services will need to balance financial,
39 environmental, and social sustainability, whilst withstanding greater public scrutiny [40, 106].
40 Additionally, governments may need to reconcile higher cost and greater usage of healthcare with
41 flattening health expenditure and reduced spending in other areas [29, 65, 104].
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

1
2
3 The fragmentation of healthcare systems poses challenges for sustained performance: power
4 imbalances among health personnel and resistance to changes in the scope of practice for some
5 professions limits team approaches to care [107, 108]; siloed care delivery models can become
6 misaligned with the complexity of the healthcare system and complex patient needs [57, 78, 109,
7 110]. Other publications reported lack of collaboration between public and private hospitals [97,
8 111]; and widening gaps in care quality in rural/remote regions due to limited resources [24, 38,
9 97, 112]. Poor linkage of primary care with the broader health system [69] and lack of investment
10 in primary care can also impact health outcomes and health system sustainability [87].
11
12
13
14
15
16
17
18
19
20
21
22
23

24 ***Opportunities for Improvement of SPHS***

25
26 To address the challenges posed, requires more than a one-time simple "fix". Adaptation to local
27 contexts, and ongoing monitoring and evaluation are required to support the sustainment of
28 effective solutions and to anticipate future needs and solutions [77]. Twelve review articles, 19
29 empirical articles, and 56 editorials discussed the opportunities for improving SPHS.
30
31
32
33
34
35
36
37

38 Workplace culture in healthcare was identified as an important capacity building factor for
39 sustained system improvement. The importance of physician self-care and well-being was
40 highlighted in numerous studies [47, 101, 113, 114], and was strongly linked with the culture of
41 the organisation, workplace, and system [18]. The importance of mentorship, teaching and
42 leadership were also highlighted as enablers of organisational improvements [20, 46, 100, 101].
43 Building supportive cultures and expectations of medical graduates is crucial [111, 114-116].
44 Furthermore, promoting incentives for generalist doctors to practice rurally may close the current
45 geographical gap in access to healthcare [47, 112, 115-117]. The promotion of desired attitudes,
46 values and ideals of healthcare organisations was also recognised for achieving SPHS.
47
48
49
50
51
52
53
54
55
56
57
58
59
60

1
2
3 Specifically, valuing and practicing patient-centred care and evidence-based medicine was
4 reported to promote system sustainability [31, 47, 67, 85, 90, 91, 117, 118]. Successful
5
6 collaboration between and within health facilities, disciplines, and sectors is important for system
7
8 sustainability [45, 51, 111, 118-121], and collaboration is facilitated by human resource
9
10 management that values the workforce, use of robust data-driven hospital management systems,
11
12 and accessible, shared electronic medical record systems [99, 122].
13
14
15
16
17
18

19 The importance of political stability and bridging the jurisdictional-federal divide in federated
20
21 healthcare systems (such as in the US, Canada, and Australia) was also emphasised as important
22
23 for optimal and unified healthcare system functioning [25, 54, 94, 95, 123, 124]. Therefore, it is
24
25 not only organisational culture in healthcare [125], but the broader organisation, governance and
26
27 regulation of the healthcare system that are crucially important for SPHS [66, 126, 127]. The
28
29 impacts of fragmentation in federated systems were recently highlighted by the COVID-19
30
31 pandemic. For example, in Australia the aged care system is funded and regulated by the Federal
32
33 Government, while the states and territories are responsible for hospitals and public health [128].
34
35 This contributed to uncoordinated responses to COVID-19 in residential aged care facilities, with
36
37 consequent outbreaks and lives lost [129].
38
39
40
41
42
43

44 Community involvement is an important factor that bolsters capacity to implement and sustain
45
46 change [122]. Empowering patients to care for their own health, and building confidence among
47
48 caregivers to deliver some aspects of care, reduces burden on the healthcare system [85]. On the
49
50 other hand, it shifts costs to families and neighbourhoods. Community involvement via
51
52
53 Community Based Participatory Research (CBPR) bolsters equity and improves outcomes of care
54
55
56
57
58
59
60

1
2
3 [130], and responding to recommendations from citizen panels could also improve SPHS [98,
4
5 121, 131].
6
7
8
9

10 As technology advances, so does the ability to harness it to promote the sustainability of
11 healthcare systems [34]. For example, point-of-care electronic prompts were used in one study of
12 hospital surgical wards to decrease rates of hospital-acquired infections [132] and embedding
13 artificial intelligence and big data analytics hold promise to support efficient and effective service
14 delivery to improve SPHS [57]. Other studies have suggested greater adoption of telemedicine to
15 reduce travel time and costs [5] as complementary support to patients [103], to improve
16 diagnostics [83], and as a platform to promote prevention of illness [24], as contributing to SPHS.
17
18
19
20
21
22
23
24
25
26
27

28 ***Sustaining and Scaling Change in SPHS***

29
30 Forty-seven articles addressed this theme, including nine reviews, 11 empirical articles and 27
31 editorials. Various common factors were found, including the importance of stakeholders'
32 support in sustaining an intervention, strong relationships among organisations within the system,
33 and the ability to flex and adapt in response to changes in contexts.
34
35
36
37
38
39
40
41

42 As interventions are often implemented with limited and/or short-term (2-3 year) evaluation
43 plans, demonstrating SPHS is often elusive [42]. Extended funding periods for improvement and
44 reform strategies are needed and should be coupled with ongoing evaluations using relevant
45 SPHS indicators to support ongoing sustainability, adaptation, and evidence-based investment
46 and resourcing [54]. For example, one article postulated that federal funding agencies should
47 perceive funding implementations of health innovations as ongoing strategic investments rather
48 than time-limited projects [45]. Only one article disagreed with the importance of measuring
49
50
51
52
53
54
55
56
57
58
59
60

1
2
3 sustainability altogether, and argued for a focus on healthcare quality as opposed to conducting
4 formative evaluations [104]. Although the delivery of efficient and effective healthcare should be
5 prioritised, robust evaluations should not be overlooked as a prerequisite and must be embedded
6 alongside implementation, from the outset [133].
7
8
9

10
11
12
13
14 Another recurring theme was the importance of accepting changes or adaptations to proposed
15 interventions [134]. For example, Greenhalgh *et al* [135] reported on a three-year case study
16 follow-up of a healthcare system transformation in London and found that the changes were
17 sustained, but in different formats than originally envisaged. This adaptation of interventions to
18 local and changing contexts is a strong characteristic of SPHS that is recognised as one of the
19 hallmarks of implementation science. The increasing adoption of pragmatic implementation trials
20 in healthcare research is an important advance to support effectiveness testing in real-life
21 situations rather than in contrived randomised controlled trials that are difficult to implement at
22 scale in real-world settings to meet the needs of changing populations [48, 136].
23
24
25
26
27
28
29
30
31
32
33
34
35
36

37 A recurring sentiment in the articles reviewed was the importance of support for the intervention
38 from leaders and stakeholders expected to continue implementing change [67, 84, 122, 125, 137,
39 138]. Leaders and managers have a clear role in supporting staff throughout the processes of
40 reforms and changes, by providing opportunities for co-design, education including e-learning,
41 and building peer networks [64, 139] whilst creating open communication to involve front-line
42 staff in planning and implementation [122, 140]. For example, one article suggested that
43 pharmacists should be involved in developing hospital discharge procedures to improve
44 medication safety and adherence [141]. In more recent articles, policy makers and political
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

1
2
3 leaders are highlighted as important change agents as long as they work in concert with front-line
4
5 health staff [54, 138, 142].
6
7
8
9

10 Effective relationships among different healthcare delivery organisations were repeatedly
11 identified as important enablers of SPHS. A central funding source coupled with policies and
12 algorithms for equitable distribution of healthcare funds was evident, and particularly prioritised
13 by rural areas [38, 74]. Beyond the government, communities and multi-sectorial partners [52],
14 and collaborations between hospitals, medical schools and physicians were also highlighted as
15 vital for SPHS [73].
16
17
18
19
20
21
22
23
24
25

26 Although publications in our review predominantly urged for the sustainability of innovations,
27 recent literature also highlights the need for discontinuation or redesign of programs that have
28 become ineffective or irrelevant over time [5, 41, 135]. This is extremely important to achieve
29 sustainability as it ensures that value is maintained in the healthcare system, especially
30 considering that healthcare systems may be slow to change and tend to maintain status quo [143].
31 Hence, purposeful work, including embedding ongoing monitoring and evaluation is needed to
32 drive healthcare systems towards more nimble models of operation that are responsive and
33 adaptable and able to anticipate changing needs.
34
35
36
37
38
39
40
41
42
43
44
45
46

47 Table 4 summarises the included articles under five headings: those that attempt to define
48 sustainability; those that focus on measuring it; associated challenges of realising sustainable
49 performance; identifying opportunities for improvement; and creating and sustaining
50 sustainability.
51
52
53
54
55
56
57
58
59
60

Table 4. Grouping of included articles based on the following criteria

Criteria	Explanation	Key points from included articles
Defining sustainability	What do we mean by SPHS?	<ul style="list-style-type: none"> - SPHS is difficult to define [30, 32-34] - Sustainability is most often framed in terms of fiscal/financial or economic sustainability [5, 25, 33, 34, 36-39, 68] - Sustaining a system intervention post-implementation and initial funding period [41-43]
Measuring	How do we measure SPHS?	<ul style="list-style-type: none"> - Issue of system boundaries—at which level should we measure sustainability? (e.g., at the individual hospital or healthcare system level)[71, 72] - Heterogeneous outcome data collection techniques (e.g., individual, organisation and community level)[36, 42, 73, 74] - Wide variety of new methods and indicators suggested (see Table 3)[21, 23, 68, 71, 77, 79]
Associated challenges	What challenges are associated with SPHS?	<ul style="list-style-type: none"> - Complex patient population (e.g., ageing, comorbidities and chronic illnesses)[4, 5, 22, 28, 52, 84-86, 91-97, 99] - The chasm between evidence and practice and policy and practice [27, 29, 36, 42, 55, 64, 65, 74, 94, 95, 101-106] - Fragmentation and gaps (e.g., power imbalances between healthcare personnel, rural versus urban services, fragmentation between public and private hospitals)[38, 77, 78, 97, 107-109, 111]
Opportunities for improvement	What helps improve SPHS?	<ul style="list-style-type: none"> - Workplace culture (e.g., mentorship, leadership, support for health professionals)[18, 20, 101, 112, 113, 115, 116] - Organisational culture (e.g., promoting collaborative attitudes, transparency, patient-centred care and political stability)[25, 85, 91, 94, 95, 99, 111, 119, 122-124] - Consumer and community involvement to align the system with needs (e.g., patient reported measures, in research, focus groups, and consumer panels)[85, 122, 130, 131] - Implementing technological advances (e.g., e-health)[5, 24, 34, 103, 132]
Sustaining and scaling	What initiatives for have been	<ul style="list-style-type: none"> - Setting up interventions for sustainability (e.g., extended initial funding periods, ongoing evaluation

used to	feedback loops, using pragmatic trial designs)[42, 104,
improve and	132, 144]
maintain to	- Support from all stakeholders [52, 64, 84, 122, 137,
SPHS (or	139-141]
value)?	- Developing cross-sectoral, interdisciplinary
	relationships and collaborations [38, 73, 74, 85]
	- Ability of intervention to adapt and flex depending on
	the context of implementation [135]

Conclusion

There is broad agreement that the sustainability of healthcare systems and their performance levels are increasingly being challenged. Our review confirms that the concept of SPHS is important and is frequently discussed in the health and medical literature. Despite discussing healthcare system sustainability, only 38 of 142 documents offered any definition, and the offered definitions were mostly centred on financial or economic indicators. More recent concepts defining SPHS included acceptability of the system to patients, healthcare providers and other stakeholders, adaptation and resilience, and sufficient nimbleness to absorb new evidence and innovations to support continuous improvements.

It is unlikely that we will, nor should we, settle on a single definition of SPHS. We would favour definitions that are robust but flexible to ensure their utility in the many and varied healthcare system contexts, however, authors and editors should strive to ensure that a definition is provided in any discussions of SPHS. We need sophisticated yet practical indicators of SPHS that capture sustainability beyond the traditional economic measures. Such measures have been proposed in the research literature but the utility of such measures for decision-making needs to be tested. The key ways to improve sustained performance include strengthening of workplace cultures, continuous workforce development, direct health consumer and community involvement, and

1
2
3 swift adoption and embedding of new evidence and technologies that are proven to have an
4
5 advantage over current practice.
6
7
8
9

10 **List of Abbreviations:**

11 AACODS	Authority Accuracy Coverage Objectivity Date Significance
12	
13	
14 DFS	Dynamic Sustainability Framework
15	
16	
17 HCFS	Health Care Sustainability Framework
18	
19 OCM	Organisational Change Model
20	
21 PRISMA	Preferred Reporting Items for Systematic review and Meta-Analysis
22	
23	
24 RIH	Responsible Innovations for Health
25	
26 SPHS	Sustainable Performance of Healthcare Systems
27	
28 WHO	World Health Organisation
29	
30	
31	
32	

33 **Additional Files**

34
35 **Additional File 1: SEARCH STRATEGY AND SUMMARY OF INCLUDED PAPERS**

36
37 (Zurynski_HerkesAdditionalFile1.docx)

38
39 **Additional File 2: QUALITY ASSESSMENT (Zurynski_Herkes_AdditionalFile2.docx)**

40
41 **Additional File 3: PRISMA CHECKLIST (Zurynski_Herkes_AdditionalFile3.docx)**

42
43 **Additional File 4: INCLUSION AND EXCLUSION CRITERIA**

44
45 (Zurynski_Herkes_AdditionalFile4.docx)

46 47 48 49 50 51 **Declarations**

52 **Ethics approval and consent to participate**

53
54
55 Not applicable.
56
57

Authors' contributions

JB conceptualised the study and led the team's work. EM, JH, JHo and YZ developed the search strategy. EM, JH, JHo, GD, and YZ conducted the abstract review, and JH, GD, IM and YZ full-text review and data extraction, with JB acting as arbitrator when needed. JH, IM and GD conducted the quality assessment. YZ and JH drafted the manuscript with input from GD and NH, and all authors contributed their comments and approved of the final version of the manuscript.

Funding

This work was supported by the NHMRC Partnership Centre for Health System Sustainability (Grant ID 9100002) and NHMRC Investigator Grant APP1176620.

Competing interests

There are not competing interests.

Patient consent for publication

Not applicable.

Provenance and peer review

Not commissioned; externally peer reviewed.

Availability of data and materials

The datasets used and/or analysed during the current study are available from corresponding author on reasonable request.

Acknowledgements

We gratefully acknowledge Kelly Nguyen for administrative and logistical support.

References

1. Dickersin K. The existence of publication bias and risk factors for its occurrence. *JAMA* 1990;263:1385-9.
2. OECD. Fiscal sustainability of health systems: bridging health and finance perspectives. Paris, France: OECD Publishing 2015.
3. Global, regional, and national disability-adjusted life-years (DALYs) for 315 diseases and injuries and healthy life expectancy (HALE), 1990-2015: a systematic analysis for the Global Burden of Disease Study 2015. *Lancet* 2016;388:1603-58.
4. Amalberti R, Nicklin W, Braithwaite J. Preparing national health systems to cope with the impending tsunami of ageing and its associated complexities: Towards more sustainable health care. *Int J Qual Health Care* 2016;28:412-4.
5. Coiera E, Hovenga EJ. Building a sustainable health system. *Yearb Med Inform* 2007;11-8.
6. Fisher ES, Bynum JP, Skinner JS. Slowing the growth of health care costs - lessons from regional variation. *N Engl J Med* 2009;360:849-52.
7. Zhi M, Ding EL, Theisen-Toupal J, et al. The landscape of inappropriate laboratory testing: a 15-year meta-analysis. *PLOS One* 2013;8:e78962-e.
8. Braithwaite J, Ludlow K, Testa L, et al. Built to last? The sustainability of healthcare system improvements, programs and interventions: a systematic integrative review. *BMJ Open* 2020;10:e036453.
9. PCHSS. Vision and Purpose, Sydney, Australia: NHMRC Partnership Centre for Health System Sustainability, 2021. Available from: <https://healthsystemsustainability.com.au/vision-for-health-system-sustainability>. [Accessed November 2021].
10. Piña IL, Cohen PD, Larson DB, et al. A framework for describing health care delivery organizations and systems. *Am J Public Health* 2015;105:670-].
11. Lennox L, Maher L, Reed J. Navigating the sustainability landscape: a systematic review of sustainability approaches in healthcare. *Implement Sci* 2018;13.
12. Wiltsey Stirman S, Kimberly J, Cook N, et al. The sustainability of new programs and innovations: a review of the empirical literature and recommendations for future research. *Implement Sci* 2012;14:17.
13. Arksey H, O'Malley LO. Scoping studies: towards a methodological framework. *Int J Soc Res Methodol* 2005;8:19-32.
14. Moher D, Liberati A, Tetzlaff J, et al. Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *PLoS Med* 2009;6:e1000097.
15. Shamseer L, Moher D, Clarke M, et al. Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015: elaboration and explanation. *BMJ* 2015;349:g7647.
16. Hawker S, Payne S, Kerr C, et al. Appraising the evidence: reviewing disparate data systematically. *Qual Health Res* 2002;12:1284-99.
17. Lorenc T, Pettigrew M, Whitehead M. Appendix 5: quality assessment for the systematic review of qualitative evidence. In: Research PH, editor. *Crime, Fear of Crime and Mental Health: Synthesis of Theory and Systematic Reviews of Interventions and Qualitative Evidence*. 2.2. Southampton, United Kingdom: NIHR Journals Library; 2014.
18. Braithwaite J, Herkes J, Ludlow K, et al. The association between organisational and workplace cultures, and patient outcomes: systematic review. *BMJ Open* 2017;7:e017708.
19. Landis J, Koch G. The measurement of observer agreement for categorical data. *Biometrics* 1977;33:159-74.
20. Stockdale SE, Zuchowski J, Rubenstein LV, et al. Fostering evidence-based quality improvement for patient-centered medical homes: initiating local quality councils to transform primary care. *Health Care Manag Rev* 2018;43:168-80.

21. Lizarondo L, Turnbull C, Kroon T, et al. Allied health: integral to transforming health. *Aust Health Rev* 2016;40:194-204.
22. Robertson J, Walkom EJ, Henry DA. Health systems and sustainability: doctors and consumers differ on threats and solutions. *PLoS One* 2011;6:e19222.
23. Fox LA, Walsh KE, Schainker EG. The creation of a pediatric hospital medicine dashboard: performance assessment for improvement. *Hosp Pediatr* 2016;6:412-9.
24. Pencheon D. Developing a sustainable health and care system: lessons for research and policy. *J Health Serv Res Policy* 2013;18:193-4.
25. Inotai A, Petrova G, Vitezic D, et al. Benefits of investment into modern medicines in Central-Eastern European countries. *Expert Rev Pharm Out* 2014;14:71-9.
26. Sepehri A. Does autonomization of public hospitals and exposure to market pressure complement or debilitate social health insurance systems? Evidence from a low-income country. *Int J Health Serv* 2014;44:73-92.
27. Zhao Y, Russell DJ, Guthridge S, et al. Long-term trends in supply and sustainability of the health workforce in remote Aboriginal communities in the Northern Territory of Australia. *BMC Health Serv Res* 2017;17:836.
28. Sonnenreich P, Geisler L. Covering the cost of the cure: from hepatitis C to cancer, new therapies are straining a system plagued by inefficiency. *P & T* 2016;41:565-89.
29. Stuart B, D'Onofrio CN, Boatman S, et al. CHOICES: promoting early access to end-of-life care through home-based transition management. *J Palliat Med* 2003;6:671-83.
30. Rees GH. Organisational readiness and Lean Thinking implementation: findings from three emergency department case studies in New Zealand. *Health Serv Manage Res* 2014;27:1-9.
31. Ammentorp J, Bigi S, Silverman J, et al. Upscaling communication skills training - lessons learned from international initiatives. *Patient Educ Couns* 2021;104:352-9.
32. Braithwaite J, Marks D, Taylor N. Harnessing implementation science to improve care quality and patient safety: a systematic review of targeted literature. *Int J Qual Health Care* 2014;26:321-9.
33. Shigayeva A, Coker RJ. Communicable disease control programmes and health systems: an analytical approach to sustainability. *Health Policy Plan* 2015;30:368-85.
34. Fineberg HV. Shattuck Lecture. A successful and sustainable health system--how to get there from here. *N Engl J Med* 2012;366:1020-7.
35. Buchan J. What difference does ("good") HRM make? *Hum Resour Health* 2004;2:6.
36. Sepehri A, Chernomas R. Is the Canadian health care system fiscally sustainable? *Int J Health Serv* 2004;34:229-43.
37. Kerr R, Hendrie DV. Is capital investment in Australian hospitals effectively funding patient access to efficient public hospital care? *Aust Health Rev* 2018;23:23.
38. Buykx P, Humphreys JS, Tham R, et al. How do small rural primary health care services sustain themselves in a constantly changing health system environment? *BMC Health Serv Res* 2012;12:81.
39. Cashin A. The challenge of nurse innovation in the Australian context of universal health care. *Collegian* 2015;22:319-24.
40. Buttigieg SC. Innovation Strategies and Health System Guiding Principles to Address Equity and Sustainability in Responsible Innovation in Health Comment on "What Health System Challenges Should Responsible Innovation in Health Address? Insights From an International Scoping Review". *Int J Health Policy Manag* 2019;8:570-2.
41. Chambers DA, Glasgow RE, Stange KC. The dynamic sustainability framework: addressing the paradox of sustainment amid ongoing change. *Implement Sci* 2013;8.
42. Scheirer MA. Is sustainability possible? A review and commentary on empirical studies of program sustainability. *Am J Eval* 2005;26:320-47.

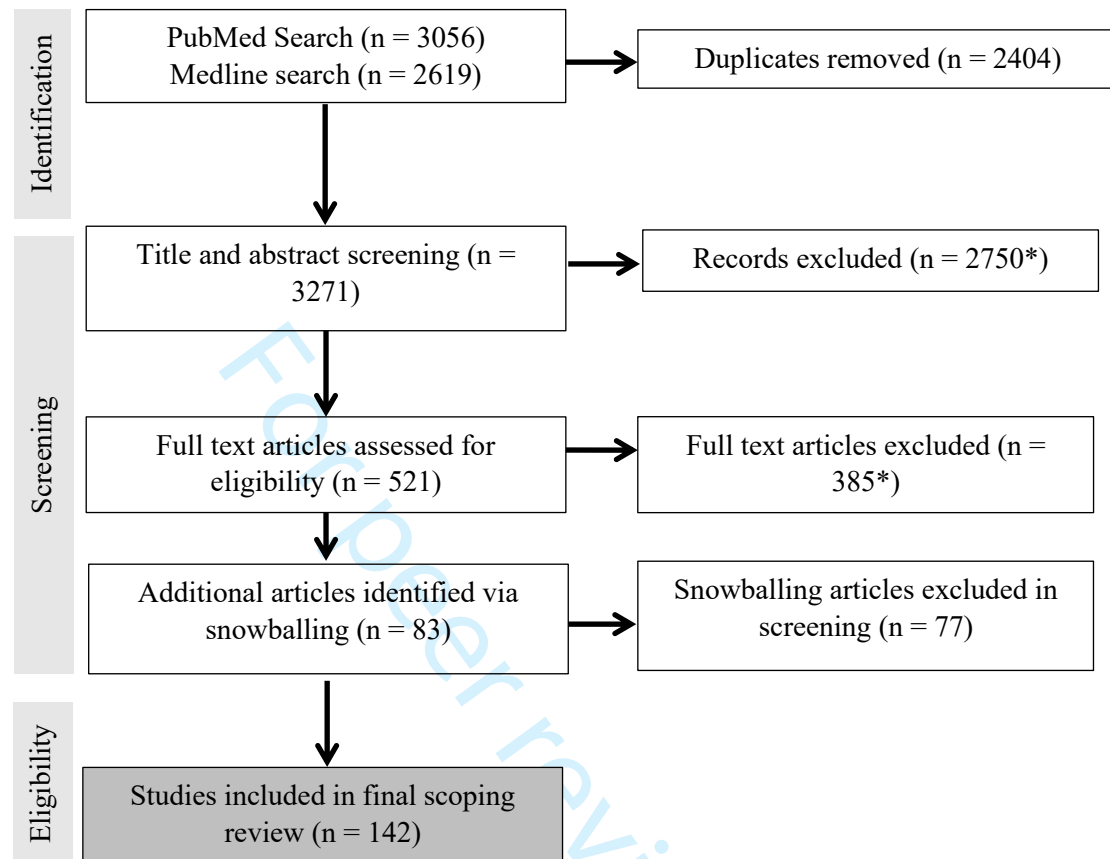
43. Gruen RL, Elliott JH, Nolan ML, et al. Sustainability Science: an integrated approach for health-programme planning. *Lancet* 2008;372:1579-89.
44. Braithwaite J, Testa L, Lamprell G, et al. Built to last? The sustainability of health system improvements, interventions and change strategies: a study protocol for a systematic review *BMJ Open* 2017;7:e018568.
45. Embi PJ, Richesson R, Tenenbaum J, et al. Reimagining the research-practice relationship: policy recommendations for informatics-enabled evidence-generation across the US health system. *JAMIA Open* 2019;2:2-9.
46. Enticott J, Braaf S, Johnson A, et al. Leaders' perspectives on learning health systems: a qualitative study. *BMC Health Serv Res* 2020;20:1087.
47. Clancy C. Creating World-Class Care and Service for Our Nation's Finest: How Veterans Health Administration Diffusion of Excellence Initiative Is Innovating and Transforming Veterans Affairs Health Care. *Permanente Journal* 2019;23.
48. Kilbourne AM, Braganza MZ, Bowersox NW, et al. Research Lifecycle to Increase the Substantial Real-world Impact of Research: Accelerating Innovations to Application. *Med Care* 2019;57 Suppl 10 Suppl 3:S206-s12.
49. 5: A continuously learning health care system. Washington (DC): Committee on the Learning Health Care System in America; Institute of Medicine; 2013.
50. Braithwaite J, Zurynski Y, Ludlow K, et al. Towards sustainable healthcare system performance in the 21st century in high-income countries: a protocol for a systematic review of the grey literature. *BMJ Open* 2019;9:e025892.
51. Pereno A, Eriksson D. A multi-stakeholder perspective on sustainable healthcare: From 2030 onwards. *Futures* 2020;122:102605.
52. Crisp N. What would a sustainable health and care system look like? *BMJ* 2017;358:j3895.
53. Abimbola S, Baatiema L, Bigdeli M. The impacts of decentralization on health system equity, efficiency and resilience: a realist synthesis of the evidence. *Health Policy Plan* 2019;34:605-17.
54. Derakhshani N, Doshmangir L, Ahmadi A, et al. Monitoring Process Barriers and Enablers Towards Universal Health Coverage Within the Sustainable Development Goals: A Systematic Review and Content Analysis. *Clinicoecon Outcomes Res* 2020;12:459-72.
55. Buchan JM, Naccarella L, Brooks PM. Is health workforce sustainability in Australia and New Zealand a realistic policy goal? *Aust Health Rev* 2011;35:152-5.
56. Hovenga EJ. Impact of data governance on a nation's healthcare system building blocks. *Studies in Health Technology & Informatics* 2013;193:24-66.
57. Vainieri M, Noto G, Ferre F, et al. A Performance Management System in Healthcare for All Seasons? *Int J Environ Res Public Health* 2020;17.
58. Editorial. *Healthc Q* 2020;22:1-2.
59. Costa-Font J, Levaggi R. Innovation, aging, and health care: Unraveling "silver" from "red" herrings? *Health Econ* 2020;29 Suppl 1:3-7.
60. Craig N, Robinson M. Towards a preventative approach to improving health and reducing health inequalities: a view from Scotland. *Public Health* 2019;169:195-200.
61. Rosenberg-Yunger ZR, Daar AS, Singer PA, et al. Healthcare sustainability and the challenges of innovation to biopharmaceuticals in Canada. *Health Policy* 2008;87:359-68.
62. Barasa EW, Cloete K, Gilson L. From bouncing back, to nurturing emergence: reframing the concept of resilience in health systems strengthening. *Health Policy Plan* 2017;32:iii91-iii4.
63. Lehoux P, Williams-Jones B, Miller F, et al. What leads to better health care innovation? Arguments for an integrated policy-oriented research agenda. *Journal of Health Services & Research Policy* 2008;13:251-4.
64. Thompson RE. Sustainability as the lynch pin of public policy and industry initiatives. *Physician Exec* 1998;24:52-5.

- 1
2
3 65. Mackenzie J. The old care paradigm is dead, long live the new sustainable care paradigm: how can GP commissioning consortia meet the demand challenges of 21st century healthcare? *London J Prim Care (Abingdon)* 2011;4:64-8.
- 4
5
6 66. Walsh K. Strengthening primary care: the role of e-learning. *Educ Prim Care* 2019;30:267-9.
- 7
8 67. Marcotte LM, Moriates C, Wolfson DB, et al. Professionalism as the Bedrock of High-Value Care. *Acad Med* 2020;95:864-7.
- 9
10 68. Garde S, Hullin CM, Chen R, et al. Towards sustainability of health information systems: how can we define, measure and achieve it? *Stud Health Technol Inform* 2007;129:1179-83.
- 11
12 69. Barbazza E, Kringos D, Kruse I, et al. Creating performance intelligence for primary health care strengthening in Europe. *BMC Health Serv Res* 2019;19:1006.
- 13
14 70. Braithwaite J, Churrua K, Long JC, et al. When complexity science meets implementation science: a theoretical and empirical analysis of systems change. *BMC Med* 2018;16:63.
- 15
16 71. Solon O, Woo K, Quimbo SA, et al. A novel method for measuring health care system performance: experience from QIDS in the Philippines. *Health Policy Plan* 2009;24:167-74.
- 17
18 72. Bramesfeld A, Amaddeo F, Caldas-de-Almeida J, et al. Monitoring mental healthcare on a system level: country profiles and status from EU countries. *Health Policy* 2016;120:706-17.
- 19
20 73. Kepros JP, Opreanu RC. A new model for health care delivery. *BMC Health Serv Res* 2009;9:57.
- 21
22 74. Dhalla I. Canada's health care system and the sustainability paradox. *Can Med Assoc J* 2007;177:51-3.
- 23
24 75. Measuring universal health coverage based on an index of effective coverage of health services in 204 countries and territories, 1990-2019: a systematic analysis for the Global Burden of Disease Study 2019. *Lancet* 2020;396:1250-84.
- 25
26 76. Vainieri M, Noto G, Ferre F, et al. A Performance Management System in Healthcare for All Seasons? *International Journal of Environmental Research & Public Health [Electronic Resource]* 2020;17:03.
- 27
28 77. Molfenter T, Gustafson D, Kilo C, et al. Prospective evaluation of a Bayesian model to predict organizational change. *Health Care Manage Rev* 2005;30:270-9.
- 29
30 78. Birch S, Murphy GT, MacKenzie A, et al. In place of fear: aligning health care planning with system objectives to achieve financial sustainability. *J Health Serv Res Policy* 2015;20:109-14.
- 31
32 79. Pacifico Silva H, Lehoux P, Miller FA, et al. Introducing responsible innovation in health: a policy-oriented framework. *Health Res Policy Syst* 2018;16:90.
- 33
34 80. Lo Sardo DR, Thurner S, Sorger J, et al. Quantification of the resilience of primary care networks by stress testing the health care system. *Proceedings of the National Academy of Sciences of the United States of America* 2019;116:23930-5.
- 35
36 81. Shen H, Sui Y, Fu Y. Using social choice theory and acceptability analysis to measure the value of health systems. *PLoS One* 2020;15:e0235531.
- 37
38 82. Cunningham FC, Ranmuthugala G, Westbrook JI, et al. Tackling the wicked problem of health networks: the design of an evaluation framework. *BMJ Open* 2019;9:e024231.
- 39
40 83. Wurcel V, Cicchetti A, Garrison L, et al. The Value of Diagnostic Information in Personalised Healthcare: A Comprehensive Concept to Facilitate Bringing This Technology into Healthcare Systems. *Public Health Genomics* 2019;22:8-15.
- 41
42 84. Shaw J, Wong I, Griffin B, et al. Principles for health system capacity planning: insights for healthcare leaders. *Healthc Q* 2017;19:17-22.
- 43
44 85. Scott IA. Is modern medicine at risk of losing the plot? *Med J Aust* 2006;185:213-6.
- 45
46 86. Robertson TM, Lofgren RP. Where population health misses the mark: breaking the 80/20 rule. *Acad Med* 2015;90:277-8.
- 47
48 87. Pisco L, Pinto LF. From Alma-Ata to Astana: the path of Primary Health Care in Portugal, 1978-2018 and the genesis of Family Medicine. *Cien Saude Colet* 2020;25:1197-204.
- 49
50
51
52
53
54
55
56
57
58
59
60

- 1
2
3 88. Jessup RL, O'Connor DA, Putrik P, et al. Alternative service models for delivery of healthcare
4 services in high-income countries: a scoping review of systematic reviews. *BMJ Open*
5 2019;9:e024385.
- 6 89. Rudnicka E, Napierała P, Podfigurna A, et al. The World Health Organization (WHO)
7 approach to healthy ageing. *Maturitas* 2020;139:6-11.
- 8 90. Quaglio G, Figueras J, Mantoan D, et al. An overview of future EU health systems. An insight
9 into governance, primary care, data collection and citizens' participation. *J Public Health (Oxf)*
10 2018;40:891-8.
- 11 91. Knutson DJ. The role of strategic alliances in ensuring health care quality: a health care
12 system perspective. *Clin Ther* 1997;19:1572-8.
- 13 92. Delgado P. Meeting the challenge of chronic conditions in a sustainable manner: building on
14 the AHC learning. *Healthc Pap* 2016;15 Spec No:90-5; discussion 7-123.
- 15 93. Veillard J, Denny K. Transformation through clinical and social integration: meeting the
16 needs of high users of healthcare. *Healthc Pap* 2014;14:4-7.
- 17 94. Stoelwinder JU. Final report of the National Health and Hospitals Reform Commission: will
18 we get the health care governance reform we need? *Med J Aust* 2009;191:387-8.
- 19 95. Stoelwinder JU, Paolucci F. Sustaining Medicare through consumer choice of health funds:
20 lessons from the Netherlands. *Med J Aust* 2009;191:30-2.
- 21 96. Magnan S, Fisher E, Kindig D, et al. Achieving accountability for health and health care. *Minn*
22 *Med* 2012;95:37-9.
- 23 97. Armstrong BK, Gillespie JA, Leeder SR, et al. Challenges in health and health care for
24 Australia. *Med J Australia* 2007;187:485-9.
- 25 98. Ganann R, Peacock S, Garnett A, et al. Capacity development among academic trainees in
26 community-based primary health care research: The Aging, Community and Health Research Unit
27 Experience. *Prim Health Care Res Dev* 2019;20:e139.
- 28 99. Al Dhawi AA, West DJ, Jr., Spinelli RJ, et al. The challenge of sustaining health care in Oman.
29 *Health Care Manag* 2007;26:19-30.
- 30 100. Thistlethwaite JE, Dunston R, Yassine T. The times are changing: workforce planning, new
31 health-care models and the need for interprofessional education in Australia. *J Interprof Care*
32 2019;33:361-8.
- 33 101. Dunn PM, Arnetz BB, Christensen JF, et al. Meeting the imperative to improve physician well-
34 being: assessment of an innovative program. *J Gen Intern Med* 2007;22:1544-52.
- 35 102. Woodward GL, Iverson A, Harvey R, et al. Implementation of an agency to improve chronic
36 kidney disease care in Ontario: lessons learned by the Ontario Renal Network. *Healthc Q* 2015;17
37 Spec No:44-7.
- 38 103. McGorry PD, Hamilton MP. Stepwise expansion of evidence-based care is needed for mental
39 health reform. *Med J Aust* 2016;204:351-3.
- 40 104. Lewis S. Can a learning-disabled nation learn healthcare lessons from abroad? *Healthc Policy*
41 2007;3:19-28.
- 42 105. Ehrlich C, Kendall E. Integrating collaborative place-based health promotion coalitions into
43 existing health system structures: the experience from one Australian health coalition. *Int J Integr*
44 *Care* 2015;15:e047.
- 45 106. Pencheon D. Making health care more sustainable: the case of the English NHS. *Public Health*
46 2015;129:1335-43.
- 47 107. Edwards N, Rowan M, Marck P, et al. Understanding whole systems change in health care:
48 the case of nurse practitioners in Canada. *Policy Polit Nurs Pract* 2011;12:4-17.
- 49 108. Lozano I, Rondan J, Vegas JM, et al. Sustainability of the health system: beyond cost-
50 effectiveness analyses. *Rev Esp Cardiol* 2016;69:880-1.
- 51 109. Farmanova E, Kirvan C, Verma J, et al. Triple aim in Canada: developing capacity to lead to
52 better health, care and cost. *Int J Qual Health Care* 2016;28:830-7.
- 53
54
55
56
57
58
59
60

- 1
2
3 110. Iskrov G, Stefanov R, Ferrelli RM. Health systems for rare diseases: financial sustainability. *Ann Ist Super Sanita* 2019;55:270-5.
- 4 111. Buttigieg SC, Schuetz M, Bezzina F. Value chains of public and private health-care services in
5 a small EU island state: a SWOT analysis. *Public Health Front* 2016;4:201.
- 6 112. Atmore C. The role of medical generalism in the New Zealand health system into the future.
7 *N Z Med J* 2015;128:50-5.
- 8 113. Levine S, O'Mahony S, Baron A, et al. Training the workforce: description of a longitudinal
9 interdisciplinary education and mentoring program in palliative care. *J Pain Symptom Manage*
10 2017;53:728-37.
- 11 114. Lega F, Prenestini A, Spurgeon P. Is management essential to improving the performance
12 and sustainability of health care systems and organizations? a systematic review and a roadmap for
13 future studies. *Value Health* 2013;16:S46-S51.
- 14 115. Wakerman J, Humphreys JS. Sustainable primary health care services in rural and remote
15 areas: innovation and evidence. *Aust J Rural Health* 2011;19:118-24.
- 16 116. Wakerman J, Humphreys JS. Sustainable workforce and sustainable health systems for rural
17 and remote Australia. *Med J Aust* 2013;199:S14-7.
- 18 117. Lehoux P, Roncarolo F, Silva HP, et al. What Health System Challenges Should Responsible
19 Innovation in Health Address? Insights From an International Scoping Review. *Int J Health Policy*
20 *Manag* 2019;8:63-75.
- 21 118. Braithwaite J, Vincent C, Nicklin W, et al. Coping with more people with more illness. Part 2:
22 new generation of standards for enabling healthcare system transformation and sustainability. *Int J*
23 *Qual Health Care* 2019;31:159-63.
- 24 119. Tsisis P. Chronic disease management and the home-care alternative in Ontario, Canada.
25 *Health Serv Manage Res* 2009;22:136-9.
- 26 120. Niraula S. Strategizing health technology assessment for containment of cancer drug costs in
27 a universal health care system: Case of the pan-Canadian Oncology Drug Review. *Cancer*
28 2019;125:3100-3.
- 29 121. Bentley C, Peacock S, Abelson J, et al. Addressing the affordability of cancer drugs: using
30 deliberative public engagement to inform health policy. *Health Res Policy Syst* 2019;17:17.
- 31 122. Rosser M. Advancing health system integration through supply chain improvement. *Healthc*
32 *Q* 2006;9:62-6, 4.
- 33 123. Guyon A, Hancock T, Kirk M, et al. The weakening of public health: a threat to population
34 health and health care system sustainability. *Can J Public Health* 2017;108:e1-e6.
- 35 124. Bessler JS, Ellies M. Values and value--a vision for the Australian health care system. *Aust*
36 *Health Rev* 1995;18:6-17; discussion 8-29.
- 37 125. Ferrelli RM, Fantini B, Taruscio D. Health systems sustainability for rare diseases. Preface.
38 *Ann Ist Super Sanita* 2019;55:249-50.
- 39 126. Bogaert P, van Oers H, Van Oyen H. Towards a sustainable EU health information system
40 infrastructure: A consensus driven approach. *Health Policy* 2018.
- 41 127. Fridell M, Edwin S, von Schreeb J, et al. Health System Resilience: What Are We Talking
42 About? A Scoping Review Mapping Characteristics and Keywords. *Int J Health Policy Manag*
43 2020;9:6-16.
- 44 128. AIHW. Australia's health 2016. Canberra, ACT: AIHW; 2016.
- 45 129. Anonymous. The impact of COVID-19 on aged care. *Aust Nurs Midwifery J* 2020;26:16.
- 46 130. Casale CR, Clancy CM. Commentary: Not about us without us. *Acad Med* 2009;84:1333-5.
- 47 131. Nagle LM, Pitts BM. Citizen perspectives on the future of healthcare. *Healthc Q* 2012;15:40-5.
- 48 132. Schwann NM, Bretz KA, Eid S, et al. Point-of-care electronic prompts: an effective means of
49 increasing compliance, demonstrating quality, and improving outcome. *Anesth Analg* 2011;113:869-
50 76.
- 51
52
53
54
55
56
57
58
59
60

- 1
2
3 133. Huynh AK, Hamilton AB, Farmer MM, et al. A pragmatic approach to guide implementation
4 evaluation research: strategy mapping for complex interventions. *Public Health Front* 2018;6.
5 134. Kilbourne AM, Braganza MZ, Bowersox NW, et al. Research Lifecycle to Increase the
6 Substantial Real-world Impact of Research: Accelerating Innovations to Application. *Medical Care*
7 2019;57 Suppl 10 Suppl 3:S206-S12.
8 135. Greenhalgh T, Macfarlane F, Barton-Sweeney C, et al. "If we build it, will it stay?" A case
9 study of the sustainability of whole-system change in London. *Milbank Q* 2012;90:516-47.
10 136. Glasgow RE, Chambers D. Developing robust, sustainable, implementation systems using
11 rigorous, rapid and relevant science *Clin Transl Sci* 2012;5:48-55.
12 137. McVeigh J, MacLachlan M, Gilmore B, et al. Promoting good policy for leadership and
13 governance of health related rehabilitation: a realist synthesis. *Glob Health* 2016;12:49.
14 138. De Santis M. Integrated care for healthcare sustainability for patients living with rare
15 diseases. *Ann Ist Super Sanita* 2019;55:276-82.
16 139. McIntosh E, Nagelkerk J, Vonderheid SC, et al. Financially viable nurse-managed centers.
17 *Nurse Pract* 2003;28:40, 6-8, 51.
18 140. Wutzke S, Benton M, Verma R. Towards the implementation of large scale innovations in
19 complex health care systems: views of managers and frontline personnel. *BMC Res Notes*
20 2016;9:327.
21 141. Burgess LH, Cohen MR, Denham CR. A new leadership role for pharmacists: a prescription
22 for change. *J Patient Saf* 2010;6:31-7.
23 142. Hanney S, Kanya L, Pokhrel S, et al. WHO Health Evidence Network Synthesis Reports. What
24 is the evidence on policies, interventions and tools for establishing and/or strengthening national
25 health research systems and their effectiveness? Copenhagen: WHO Regional Office for Europe
26
27 © World Health Organization 2020.; 2020.
28
29 143. Braithwaite J, Glaziou P, Westbrook J. The three numbers you need to know about
30 healthcare: the 60-30-10 Challenge. *BMC Med* 2020;18.
31 144. Tricco AC, Ashoor HM, Cardoso R, et al. Sustainability of knowledge translation interventions
32 in healthcare decision-making: a scoping review. *Implement Sci* 2016;11:55.
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

Figure 1. PRISMA flow diagram summarising the review and reasons for article exclusion*

**HOW CAN THE HEALTHCARE SYSTEM DELIVER SUSTAINABLE PERFORMANCE?
A SCOPING REVIEW**

ADDITIONAL FILE 1: SEARCH STRATEGY AND SUMMARY OF INCLUDED PAPERS

Search Strategy

	PubMed	Ovid Medline
	((sustainab*[Title/Abstract]) OR resilien*[Title/Abstract]) AND (((("health system*" [Title/Abstract]) OR "health system* performance" [Title/Abstract]) OR "health system* improvement" [Title/Abstract])	<ol style="list-style-type: none"> 1. "health system* performance" 2. "health system* improvement" 3. (health adj3 system) 4. 1 OR 2 OR 3 5. (sustainab* OR resilience*) 6. 4 AND 5
Additional Limits	English Language	English Language
Yield	3056 articles	2619 articles

1136/bmjopen-2024-059207 on 24 May 2024. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

1136/bmjopen-2021-059282 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

Summary of included studies in scoping review and reasons for inclusion

Article demographics				Reason for article inclusion and summary of results					
Reference	Year	Country	Type *	1. Definition of HSPS	2. Measuring HSPS	3. Challenges to HSPS	4. Improvements to HSPS	5. Sustaining or scaling change is HSPS	6. Other
Al Dhawi AA, West DJ, Jr., Spinelli RJ, Gompf TA. 2007	2007	Oman	ED			Increased consumer expectations, increased medication costs, and resource constraints	The environment financial sustainability, institutional sustainability, demand sustainability	The need to examine the entire system: social, economic, and environmental determinants of health in order to sustain changes in the health system	
Amalberti , R., W. Nicklin, and J. Braithwaite. 2016.	2016	Worldwide	ED			Ageing population, patients with comorbidities, and expensive health conditions to treat			
Ament SMC, Gillissen F, Moser A, Maessen JMC,	2014	Netherlands	EM					The importance of internal auditing and feedback of outcomes, (e.g., reminders and meetings),	

1136/bmjopen-2021-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

Dirksen CD, von Meyenfeldt MF, et al. 2014								changing organisational structure	
Armstrong BK, Gillespie JA, Leeder SR, Rubin GL, Russell LM. 2007	2007	Australia	ED			<ol style="list-style-type: none"> 1. Demography of disease and ageing population; 2. Increasing medical cost; 3. Health workforce supply and distribution; 4. Problems with the quality and safety; 5. Balancing private and public health; 6. Recognition in the importance of investing in the health of the next generation; 7. Urban planning for sustainable communities; 8. Inequity in health 	Solutions must include elements of prevention, and primary and acute rehabilitation services		

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2021-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

Atmore C. 2015	2015	New Zealand	ED			Doctors are becoming more specialised, but needs to become more generalist to look after the whole person	Transalpine service model (developed in a rural NZ hospital) provides options for sustainable health care in the future		
Barasa EW, Cloete K, Gilson L. 2017	2017	Worldwide	ED	Resilience is an important quality for creative adaptation		The challenge of thinking of everyday resilience rather than just crises			
Bessler JS, Ellies M. 1995	1995	Australia	ED			Admissions rise, and doctors are using technology more regularly. Public expenditure on healthcare has remained 'flat' but private health care premiums continue to escalate	Need to decrease the amount of beds in the public hospitals (as 15% of inpatients should not be, according to research), increase continuity of patient care (termed 'integrated networks'), and have less of a divide between state and federal health systems		
Birch S, Murphy	2015	Worldwide	ED		Health care sustainability	The unintended consequences of	Sustainability frameworks		

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

<p>GT, MacKenzie A, Cumming J. 2015</p>					<p>framework (HCSF), showing the relationship between expenditure levels, the determinants of expenditure, revenues to support the health care system, and their relationship to fiscal and political sustainability</p>	<p>redistributing cost of care and responding to the needs of the population e.g., redistributes what socio-economic groups use health care</p>	<p>should take into account the needs and trends of the population, the work force, financial and service information</p>		
<p>Braithwaite, J., D. Marks, and N. Taylor. 2014</p>	<p>2014</p>	<p>Australia</p>	<p>RA</p>	<p>Sustainability defined as the mid-to-long-term acceptance of a program</p>		<p>Looks at the need to improve implementation science, leading to sustainability</p>	<p>Sustainability was one of eight key factors in implementing changes in the health system</p>	<p>Sustainability needs to be considered from the inception of change programs and projects, and there needs to be commitment at a managerial level</p>	
<p>Bramesfeld, A., F. Amaddeo,</p>	<p>2016</p>	<p>European Union</p>	<p>EM</p>		<p>Measure and compare different</p>	<p>Recognises the challenge of</p>			

1136/bmjopen-2021-019207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

J. Caldas-de-Almeida, G. Cardoso, A. Depaigne-Loth, R. Derenne, V. Donisi et al. 2016.		Countries			countries using the QMP-MHC scale	bridging policy and practice			
Buchan J. 2004.	2004	Worldwide	ED	Argues that a HR policy is central to any sustainable health system performance changes	Must be sector specific measures e.g., staff per occupied bed, patient acuity measures	The lack of consistent human resource management (HRM), as well as lack of being able to fit HRM to organisational characteristics, context and priorities, and link this to sustainable improvements. No single intervention is likely to be effective in all contexts.		There is low take-up of HRM interventions	

1136/bmjopen-2021-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 29, 2024 by guest. Protected by copyright.

<p>Buchan JM, Naccarella L, Brooks PM. 2011</p>	<p>2011</p>	<p>Australia and New Zealand</p>	<p>ED</p>	<p>The ability for Australia and New Zealand to train enough health staff to fill the positions for their front-line health staff to reduce the reliance on international recruitment</p>	<p>Measurement is limited, e.g., can see if health care staff have received a qualification from a country outside Australia, but not how long they have been working in Australia</p>	<p>Brings into question attitudes of the country towards skilled personnel, immigration, funding of the education sector to train new health personnel (and the time commitment to train new health professionals must also be considered, as must the benefits of overseas personnel for national policy makers)</p>			
<p>Burgess LH, Cohen MR, Denham CR. 2010</p>	<p>2010</p>	<p>Worldwide</p>	<p>ED</p>			<p>Minimizing adverse drug events (ADEs) (and therefore readmissions) by having pharmacist leaders</p>	<p>Pharmacists need to become leaders to change hospital organisational and safety culture, working within an interdisciplinary team to ensure</p>	<p>Pharmacists should be involved in medication counselling during the discharge process, and follow-up after the transition to</p>	

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2021-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 29, 2024 by guest. Protected by copyright.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

For peer review only

							medication and medication issues are managed appropriately. Should also establish a medication review board to investigate near misses, being engaged in teamwork and communication, helping implement computerized systems, and being involved in patient training for discharge	home after hospital discharge	
Buttigieg SC, Schuetz M, Bezzina F. 2016	2016	Malta	EM			The need for public and private hospital services to work together to solve complex health care problems and benefit both entities	Collaboration between private and public sectors may involve: 1. regulated semi-competitive health model, whereby the government sets costs (e.g., for specific tests) and citizens are encouraged to		

1136/bmjopen-2021-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

							invest in private health insurance. 2. Public-private mix model, which makes care more comprehensive and complete; or 3. Public-private partnerships (PPPs)		
Buykx P, Humphreys JS, Tham R, et al. 2012	2012	Australia	EM	Providing appropriate and cost-effective care in a way that persists in or can adapt to environment. Should also positively influence the broader sustainability of the wider community		In rural health services, sustainability is threatened by small population size and lack of economy of scale, poorly management structures, low socioeconomic groups, and geographic isolation		Rural health services are enabled by supportive policy and state and federal support	
Casale CR, Clancy CM. 2009	2009	United States of America	ED				Improving equity in health through community-based participatory research		

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2021-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

							(CBPR). A component of this research is to plan for long-term process and commitment		
Cashin A. 2015	2015	Australia	ED	A health system must address all aspects of its sustainability , including financial, social and political elements		Being unsure if future conservative governments could threaten universal health care, and encouraging nurse innovation in Australia		Issue of encouraging government support that will be politically costly in the short-term, but beneficial in the long term	
Chambers DA, Glasgow RE, Stange KC. 2013	2013	Worldwide	ED	The continued positive effects of the intervention after the external funding has ended. This is expected to be constantly evaluated, developed and improved	The dynamic sustainability framework (DSF) was created to investigate the fit between the intervention, the practice setting, and the ecological system	Two assumptions of sustaining interventions are challenged: 1. 'voltage drop' where interventions yield lower benefits as they are put into practice outside a laboratory setting; and 2. 'program drift' where programs	Ensure focus on sustainability from the beginning of implementation of the intervention, rather than post-implementation. The setting for the intervention also important e.g., it should focus on organisational learning,		

						become less effective due to changes in protocol as it is delivered	stakeholders should be involved		
Cho CC, Ramanan RA, Feldman MD. 2011	2011	United States of America	EM		Used analysis of nomination letters for mentor awards to analyse what it is to be a good mentor		Through mentorship being role models and legacies for the future		
Coiera E, Hovenga EJ. 2007	2007	Worldwide	ED	Health systems need to be adaptable to changing contexts and strive to be environmentally sustainable	Making it easier to measure sustainability through increasing transparency in work processes	Financial challenges of health care costing more than expected, treating higher volumes of patients with more comorbidities and higher expectations of care, and workforce shortages	Digitisation to cut costs e.g., telemedicine to reduce travel time		
Crisp N. 2017	2017	United Kingdom	ED	Internal factors (1. efficiency & effectiveness of health care provision, 2.		Long term chronic conditions, especially the growing population of		The need of the health and care system to be strengthened by support from communities	

1136/bmjopen-2021-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

				availability of well trained health staff, 3. cost); external (4. population health, 5. contribution of carers and informal networks of care, 6. integration of policies and practices), and overall (7. public and political acceptability and support)		elderly with needs for community care		and multi-sectorial partners	
De Rosis S, Nuti S. 2018	2018	Italy	EM			Lack of a national or regional office responsible for project coordination. Longer-term financial investment is needed			
Delgado, P. 2016	2016	Canada	ED			Quality improvement			

1136/bmjopen-2021-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

						collaborative systems did not improve the sustainability of participating health systems in the treatment and management of chronic diseases		
Dhalla I. 2007	2007	Canada	ED		The article speculates that it may be better to assess health care as a proportion of GDP rather than a proportion of Government spending	Politicians are recognising that the 'status quo' may not be sustainable due to system demands. This often assumes tax is static or declining, but this is open to debate and interpretation		Increasing spending on health care can occur as long as it does not impinge upon spending on non-health goods and services
Dunn, P. M., B. B. Arnetz, J. F. Christensen, and L. Homer. 2007	2007	United States of America	EM				Through a program in which leadership and physicians themselves recognised physician wellbeing as important, and	

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2021-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

							this well-being was measured		
Edwards, N., M. Rowan, P. Marck, and D. Grinspun. 2011	2011	Canada	RA			"Blockages" in the system e.g., power relationships, or unintentional blockages to innovation	Through the use of "leverage point" strategies such as structure by which to organise the system	Identified leverage points and blockages in macro- and micro-levels based on the literature review	
Ehrlich C, Kendall E. 2015	2015	Australia	EM			Participants identified that, should funding cease, the program would not be sustained. This was attributed to limitations in program planning			
Ellner, A. L., S. Stout, E. E. Sullivan, E. P. Griffiths, A. Mountjoy, and R. S. Phillips. 2015	2015	Worldwide	ED			Recognises a lack of traditional metrics to measure health system improvement or sustainability			

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2021-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

<p>Farmanov a E, Kirvan C, Verma J, et al. 2016</p>	<p>2016</p>	<p>Canada</p>	<p>EM</p>			<p>Lack of leadership support, difficulty creating partnerships, communicating with and engaging with staff and physicians, struggling with funding models that perpetuate working in silos, insufficient time and resources, difficulty obtaining data, data management and measurement, scoping improvement projects, ensuring sustainability</p>	<p>Start small, but think big; work toward incremental development; select a portfolio of projects that are manageable and align with Triple aim dimensions; include partners at the outset; strategize and build multidisciplinary teams and leverage existing capabilities; do not make assumptions about patients/clients</p>		
<p>Fineberg HV. 2012</p>	<p>2012</p>	<p>United States of America</p>	<p>ED</p>	<p>Affordability (for individuals, organisation)</p>			<p>Increased use of IT, re-doubling the efforts to enhance quality</p>		

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2021-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20 2024 by guest. Protected by copyright.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

				s and the government), acceptability to key constituents, and adaptability			and safety in medical care, improving health care of high-need patients in a way that prevents hospitalisations, honour patient preferences, rely on systems engineering and operations research to smooth the patient journey through the health system, learn from peers and from evidence, and champion a system that values accountability		
Foo, C. Y., K. K. Lim, S. Sivasambu, K. B. Dahian, and P. P. Goh. 2015.	2015	Malaysia	EM		Measurement using data envelopment analysis (DEA) overtime to measure efficiency				

For peer review only

Fox, L. A., K. E. Walsh, and E. G. Schainker. 2016	2016	United States of America	EM		Measured group sustainability through staff turnover rate				
Garde S, Hullin CM, Chen R, et al. 2007	2007	Worldwide	RA	Argues that linking the health system sustainability and health information systems is important, but recognises that there is no suitable and all-encompassing definition of sustainability in relation to health care.	There is a lack of qualitative indicators for sustainability. Suggestions of measuring sustainability by the eMergy (embodied energy) sustainability index	There are technological (e.g., making programs that can be flexible and adapt to context changes), socio-political and organizational (e.g., needing drivers behind interventions) issues/barriers			
Global, regional, and national disability-adjusted life-years	2017	Worldwide	EM		Used information previously gathered to make decisions regarding		Formulation of sustainable development goals (SDGs)		

1136/bmjopen-2021-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

(DALYs) 2017					healthy life expectancy and risk-adjusted life expectancy			
Greenhalgh, T., F. Macfarlane, C. Barton-Sweeney, and F. Woodard. 2012	2012	United Kingdom	ED		Case study: three-year follow-up of a health care program in London that underwent changes in terms of policy and economics		Some services changed over the three years and were altered relating to changes that happened with time e.g. national policy changes	Some interventions were sustained but looked different to the original intervention, due to it being adapted through the three years
Gruen RL, Elliott JH, Nolan ML, Lawton PD, Parkhill A, McLaren CJ, Lavis JN. 2008	2008	Worldwide	RA	Sustainability after an initial implementation period when funding ceases is difficult				Targets of interventions to improve sustainability included the individual (e.g. through education), organisation (e.g., changes to policy), community (e.g., social actions) and system levels (e.g. social advocacy)

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

<p>Guyon A, Hancock T, Kirk M, et al. 2017</p>	<p>2017</p>	<p>Canada</p>	<p>ED</p>				<p>Recognising the importance of governments and the health system providing fund and support for public health, as it delivers important information for the health system to thrive</p>		
<p>Heron, N. 2015</p>	<p>2015</p>	<p>North Ireland</p>	<p>EM</p>				<p>Measure the effect of an intervention for management of musculoskeletal complaints in GP</p>		
<p>Hibbert PD, Thomas MJW, Deakin A, et al. 2018</p>	<p>2018</p>	<p>Australia</p>	<p>EM</p>			<p>When there is an adverse event (AE) resulting in a root cause analysis (RCA), there are barely ever (5% of the time) provided strong recommendations for altering and improving the health system. 86% of</p>	<p>Observations and patient and carer interviews and review of notes may be useful in gaining a better understanding of adverse event situations</p>		

1136/bmjopen-2021-059207 on 24 May 2022. Downloaded from http://bmjopen.bmj.com/ on April 20, 2024 by guest. Protected by copyright.

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2021-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

						the recommendations were considered 'weak'		
Hovenga EJ. 2013	2013	Worldwide	ED	Where everyone can access safe and correct health services to achieve the best outcomes possible			Four main outcomes or goals: improved health, responsiveness, financial risk protection, and improved efficiency	Information technology (IT) has a role to play in creating sustainable health systems (as it can lead to decisions having better clinical outcomes and lower costs)
Inotai A, Petrova G, Vitezic D, Kalo Z. 2014	2014	Central-Eastern European Countries	ED	Focus on financial sustainability	Measure the potential innovation by new drugs in terms of monetary value		Goal of innovative pharmaceutical companies is to provide health gain, equity in health, responsiveness of patients with complex comorbidities. To create this financial sustainability, affordable new innovative	

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

							treatments and political sustainability are necessary		
Kepros JP, Opreanu RC. 2009	2009	United States of America	ED		Measuring the financial and social output of an organisation		Requires optimal relationships and synergy between the hospital, medical school and physicians, each with their own core competencies		
Kerr R, Hendrie DV. 2018	2018	Australia	EM	Two meanings: 1) financial sustainability for governments and health services; 2) environmental sustainability		To effectively fund patient access to hospital care in a system where capital allocation is not funded based on patient-centredness			
Knutson, D. J. 1997	1997	United States of America	ED		The issue of measurement after the funding period terminate	Limitations in current models of chronic illness management, and the difference between thinking about	Recognises important components of models for critical care: should be patient centred, have a critical illness management		

1136/bmjopen-2021-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2021-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

						and the reality of how clinical work occurs	model, be conscious of minimising patient out-of-pocket expenses, consulting with the organisation, and recognising the link between clinical and research outcomes		
Lega, F., Prenestini, A., Spurgeon, P. 2013	2013	Worldwide	RA		Thirty-seven studies in a systematic review (both qualitative and quantitative were involved, and some had causal relationship analysis)	Rising costs, economic crises and ageing population	Recognise that the performance of health care organisations is correlated to management practices, leadership, engagement with professionals, management characteristics (e.g., training [doctors as managers are beneficial], background, career history), and organisational culture and	Medical engagement is linked to better patient mortality rates, decreased serious incidents, maintains high levels of patient care	

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

							management status. New technologies are also useful		
Lehoux P, Williams-Jones B, Miller F, Urbach D, Tailliez S. 2008	2008	Worldwide	ED	Recognising the importance of being sustainable overtime, rather than creating for short-term gain					
L, Goeree R, Levine M, et al. 2011	2011	Canada	RA		When post-drug interventions are being used clinically, there should be field evaluation studies conducted to ensure the efficacy and cost effectiveness of the intervention		Coverage with evidence development (CED) is necessary, not to replace RCTs, but to gain the next level of knowledge about that intervention in clinical practice. It will also increase inter-disciplinary collaboration		
Levine, S., S. O'Mahony	2017	United States of America	EM				Interventions to improve palliative care		

1136/bmjopen-2021-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2024-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

, A. Baron, A. Ansari, C. Deamant, J. Frader, I. Leyva, M. Marschke, and M. Preodor. 2017							(PC) in paediatric hospitals, and to improve physician self-care		
Lewis S. 2007	2007	Canada	ED			Financial, ageing population, concern over the proportion of government spending used on healthcare	The challenge of learning from other countries, and recognising the context specific elements of the systems they have enforced, and appropriately contextualising to the Canadian context e.g., Europe pays doctors less than Canada, utilises more home care	Believes sustainability should not be the focus, but rather quality improvement, aligning incentives with goals, making excellence mandatory and reducing health disparities should be the goal for at least the next five years	
Liaropoulos L, Goranitis I. 2015	2015	Worldwide	ED			Ageing population, the financial stress this places on healthcare			It was suggested that taxation should

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

						systems, and the question of who is to pay for this increased cost? (e.g., does retirement age remain the same or rise?)		be a focus to contribute to health care
Lizarondo, L., C. Turnbull, T. Kroon, K. Grimmer, A. Bell, S. Kumar, M. McEvoy et al. 2016	2016	Australia	EM		Using survey of Scott's 10 strategies for sustaining change in the health system		Allied health respondents recognised that low- or no-impact interventions that cause little improvement or cause harm could be minimised, and by selecting care responses for comparative effectiveness	
Lozano I, Rondan J, Vegas JM, Segovia E. 2016	2016	Spain	ED			Funding and support for ongoing professional learning, recognising differences in health structures between countries to understand how recommendatio		

1136/bmjopen-2021-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2021-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

						ns are transferrable		
Mackenzie J. 2011	2011	United Kingdom	ED	Sustainable development meets the needs of the present whilst ensuring future needs can be met		The challenge of getting the balance between environmental, social and economic sustainability right, and considering how these factors interact	Need to take a systems view of managing system risk, ensuring a more sustainable business system, and being strategic in the long term rather than focusing on short term gains	
Magnan S, Fisher E, Kindig D, et al. 2012	2012	United States of America	ED			There are very few or no direct links between investing health care and establishing the social determinants of health, and there is little communication between stakeholders in these different camps. Rising health care costs are also a concern	The development of "health outcomes trust" organisations and accountable care organisations (ACOs) to work to fulfil the triple aim and have sustainable funding. Community goal setting could also help to pay for population health	
McGorry PD,	2016	Australia	ED			The challenges of	E-health giving the opportunity	

For peer review only - <http://bmjopen.bmj.com/site/about/guidelines.xhtml>

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

Hamilton MP. 2016						implementing effective mental health reforms, including allowing access to early intervention with government funding, and funding with the NDIS for more complex cases	for a complementary role at all stages of illness, and the importance of research and evaluation in creating the most cost-effective solutions	
McGrath, S. P., and G. T. Blike. 2015	2015	United Kingdom	EM		Dartmouth-Hitchcock Value Institute Experience		The define-measure-analyse-improve-control framework was developed to allow a problem-solving approach to challenges	The last phase, 'control' promotes the changes to be sustained through time
McIntosh E, Nagelkerk J, Vonderheid SC, Poole M, Dontje K, Pohl JM. 2003	2003	United States of America	ED			Recognition that nurse managed centres often do not receive the necessary financial support for their centres to be continued	A financial advisory committee (FAC) could help improve financial outcomes in these centres	The FAC had meetings over three years and developed financial skills of the individuals
McVeigh J,	2016	Worldwide	RA, EM					Participation of people with

1136/bmjopen-2021-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 28, 2024 by guest. Protected by copyright.

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

For peer review only

MacLachlan M, Gilmore B, et al. 2016								disabilities (service users) in policy development and the governance of that service to improve sustainability. Additionally, aligning or integrating new models of care with existing models can strengthen program delivery and implementation of policies for rehabilitation. Support from professionals in the field and stakeholders is also beneficial for sustainability	
Molfenter, T., D. Gustafson, C. Kilo, A.	2005	United States of America	EM		Measure the self-reported and faculty-reported the success and	The model used was not able to predict sustainability of interventions or			

1136/bmjopen-2021-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

Bhattacharya, and J. Olsson. 2005.					sustenance of changes to their organisation	programs, but this may be due to the time period or the sustainability of the measure	
Nagle LM, Pitts BM. 2012	2012	Canada	ED				Recommendations: raise public awareness of services available, improve access to primary health care, empower patients about their care, use incentives to encourage serving in underserved areas, create an integrated health record service, devise alternatives to the fee-for-service model, increase funding for community services, give health professionals communication

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2021-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

							and language training, emphasise healthy lifestyles, ensure pharmaceuticals are affordable, decrease wait time and increase access for services for mental illness		
Pacifico Silva H, Lehoux P, Miller FA, Denis JL. 2018	2018	Worldwide	ED		Development of the responsible innovations for health (RIH) framework which identifies interventions that respond to the context and support equitable and sustainable health service. It includes 5 domains: 1. population health; 2.	Ensuring Responsible Innovations in Health (RIH), involving consideration of sustainability and equity challenges			

For peer review only

1136/bmjopen-2021-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

					health system; 3. Economic; 4. organisational; and 5. environmental			
Pencheon D. 2013	2013	England	ED		Measuring preventable illness and unplanned hospital admissions as system failures until proven otherwise	Understanding the changing needs (demographic, social, cultural) of the changing population; understanding how the rapid growth of science and technology can change outcomes; the need for public services to act within environmental boundaries and increased levels of scrutiny	Utilising technology to promote sustainable and personalised health care, and improving the prevention of illness rather than treating the illness once it arises e.g., increasing physical activity	
Peric, N., M. M. Hofmarcher-Holzhack	2017	European Union Countries	RA		Does not answer how we measure sustainability but the			

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

er, and J. Simon. 2017.					methods or 'actors and actions' by which sustainable health system performance is assessed				
Pronovost, P. J., C. G. Holzmueller, T. Callender, R. Demski, L. Winner, R. Day, J. M. Austin, S. M. Berenholtz, and M. R. Miller. 2016	2016	United States of America	ED		Measuring performance of the Johns Hopkins Hospital (JHH) over a number of years compared to national guidelines		Phase 3 of the program involves a peer education program for health professionals		
Rees, G. H. 2014.	2014	United States of America, United Kingdom, Australia	EM	"Implementation to effect continuous improvement, by either setting a cycle or					

				programming for the next unit on the patient journey to undertake Lean activities”				
Robertson J, Walkom EJ, Henry DA. 2011	2011	Australia	EM		Surveyed both GPs, specialists, and consumers (patients) in the health system, and asked them to identify the potential problems in the system	Both doctors and consumers recognise the rising cost of health care, but doctors are less concerned than consumers regarding the sustainability of the health system		
Robertson TM, Lofgren RP. 2015	2015	United States of America	ED			A large percentage (80%) of health spending is spent on a small proportion (20%) of the population due to complex episodes of care. The challenge is therefore to		"The national health care agenda has been heavily influenced by the assumptions that disease prevention and the general promotion of “population health” will be sufficient to

1136/bmjopen-2021-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

						learn to address these in a more cost-effective manner, but this poses difficulties e.g., it is hard to decrease costs through conducting outpatient clinics		reduce health care spending to a sustainable level."
Rosenberg-Yunger ZR, Daar AS, Singer PA, Martin DK. 2008	2008	Canada	ED	Sustainability of the health system "means ensuring that sufficient resources are available over the long term to provide timely access to quality services that address Canadians' evolving health needs."		The rising cost of pharmaceuticals and biopharmaceuticals, the complicated process by which drugs get approved for funding and use in developed countries, and the time consuming alternatives (e.g., the Special Access Program in Canada). This leads to moral	A mechanism to involve more stakeholders in the discussion	

1136/bmjopen-2021-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

						questions about the legitimacy and fairness of applying for drugs, especially new and expensive biopharmaceuticals		
Rosser, M. 2006	2006	Canada	ED				The Healthcare Materials Management Services (HMMS) created in 1997 and its success hinged on the collaboration between the hospitals involved	Sustaining change is thought to be attributed to: executive funding, leadership, collaboration, openness of providers to the process, support of front-line clinical leaders, and development of a unique entity with its own culture
Scheirer MA. 2005	2005	United States of America	RA	Sustaining a program or initiative that had previously been	Sustainability can fall into 3 measures: 1. health benefits continue post-funding	Challenge of funding only for short periods (3-5 years) and the subsequent need to source		The authors suggest that the expectation that a new project will be sustainable after

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2021-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

				developed and maintained after the initial funding period or other impetus had ended	(individual level outcomes); 2. continuation of program activities post-intervention (organisation level outcomes); 3. relates to changes in community capacity to promote health post-intervention/funding (community level outcomes)	funding. Also challenging is the uniqueness of context, whereby each project is influenced by its context and what programs or activities have preceded it		a 3 year funding project may be overly optimistic (therefore that it is hard to find funding opportunities after that time)	
Schwann, N. M., K. A. Bretz, S. Eid, T. Burger, D. Fry, F. Ackler, P. Evans et al. 2011.	2011	United States of America	EM				Decrease hospital acquired infections through point-of-care electronic prompts (POCEPs)	Sustaining changes from an intervention over a two year period	
Scott IA. 2006	2006	Australia	ED			Baby boomers getting older with	Training patients with counselling and behavioural	Abolishing state and federal boundaries in	

For peer review only

1136/bmjopen-2021-019207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

						comorbidities and decreased quality of life, the 'worried well', new technologies, the demand for new and further treatments, the influence of the media (e.g. "miracle cures"), juggling a finite health budget, threats of global warming, and deciding which treatments should be subsidised	strategies to take more control over their own care, encouraging non-traditional caregivers to do some forms of care if found to be equally effective	funding and creating a new federal system, having each patient with a GP responsible for their care, linking healthcare databases with a unique patient identifier	
Sepehri A, Chernomas R. 2004	2004	Canada	ED	Acknowledges that different fields have different definitions of sustainability, and that these definitions tend to focus on resources	Fiscal sustainability has been measured through the percentage of provincial and territorial budget allocation for health care, but this acts on	Threat to sustainability is the uncertainty of government funding			

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

				and the capacity of the public sector to finance current and future health expenditure	two assumptions. 1) providers are assumed to respond to needs, and 2) the needs are assumed to reflect the current state of medical knowledge			
Shaw J, Wong I, Griffin B, Robertson M, Bhatia RS. 2017	2017	Canada	EM			"Increasingly complex patient population"	Emphasis must be placed on sustainability in order to protect the universal public healthcare system. "Need for comprehensive health system planning"	
Shigayeva A, Coker RJ. 2015	2015	Worldwide	ED	Sustainability is the system's resilience. In a public health perspective, sustainability is defined in relation to if the benefit to	Several frameworks have been suggested, which measure determinants or dimensions of sustainability. They mostly do not		Five programmatic components in disease control programs that are important for sustainability: leadership, capacity, interactions (notions of	

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

				stakeholders is sustained overtime. Financial sustainability and being responsive to the consumer wishes also important	consider efficiency, which is an important component of sustainability. Underrepresented field: of 108 studies in systematic review, only two looked at HSPS (Lafond 1995a; Pammolli et al.)		integration), flexibility/adaptability and performance		
Solon, O., K. Woo, S. A. Quimbo, R. Shimkhada, J. Florentino, and J. W. Peabody. 2009.	2009	Phillipines	EM		Developed Q* to measure quality of hospital performance across a range of facilities				
Sonnenreich P, Geisler L. 2016	2016	United States of America	ED		Financial issues of rising healthcare costs and	Financial unsustainability in the system, (e.g., that 30% of healthcare	The initiation of value based formulary in pharmacies		

1136/bmjopen-2021-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

					decreasing affordability	spending is wasteful) and trying to balance this with allowing patients to access new expensive medicines. But a new way to look at it would be to analyse the <i>value</i> of the drug. There is also a problem with patient adherence to medications, especially when they have a higher expense		
Stockdale, S. E., J. Zuchowski, L. V. Rubenstein, N. Sapir, E. M. Yano, L. Altman, J. J. Fickel, S.	2018	United States of America	EM		Through interview analysis	Barriers to sustained improvement included a lack of collaborative working between local practice leaders; another challenge is balancing time that could be	Through the introduction of quality care councils and an evidence based quality-improvement project aimed at improving disciplinary leadership, aligning frontline	Assessed project completion and spread and found it was important to have mechanisms by which to hold frontline innovations would be

For peer review only

<p>McDougal, T. Dresselhaus, and A. B. Hamilton. 2016</p>						<p>spent on patients to be attributed to the 'extra work' of the project</p>	<p>improvement innovation and assessing implementation designs</p>	<p>suitable for spread (but does not research the impact of this)</p>	
<p>Stoelwinder JU, Paolucci F. 2009</p>	<p>2009</p>	<p>Netherlands</p>	<p>ED</p>			<p>Growth rate of the Australian health system is financially unsustainable, with the Australian Medical Association, as well as state governments, lobbying for more funding. It is also likely that there will be significant resistance by stakeholders when there is suggestion of Australian health system reform</p>	<p>Being inspired by the Netherlands new system of health reform, including policy objectives of durability (sustainability), solidarity (equity), choice, quality and efficiency. Additionally, there are tools to keep citizens engaged in their health care decisions, including the choice of 15 health insurance providers. To avoid insurers seeking out low-risk clients, there has been a</p>		

1136/bmjopen-2021-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

							complex risk-equalisation scheme put in place		
Stoelwind er JU. 2009	2009	Australia	ED			The need to address both financial and political sustainability in the health system (e.g., with rising health care costs, and the political structures to deal with tax payment rather than consumer payment for the health system)	Governance needs to be established for the "healthy Australia accord", the federal government should progressively take over funding responsibilities for Medicare, and a funding model called "Medicare select" should be established whereby public and private health models compete to allow consumer choice		
Stuart N, Adams J. 2007	2007	Canada	ED		Cost of health care that outpaces economic growth, and a way of conceptualisin	Spending on healthcare is being pushed to unsustainable levels meaning that, in order to be sustained,			

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2021-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

					g this is in a comparison to Maslow's hierarchy of needs, with different levels of health need (but this adds to questions of how health need and benefit are defined)	spending must be taken away from other areas e.g., education, infrastructure; or increase revenue; or decrease cost of health care		
Taylor M. 2007	2007	Australia	ED				The expansion and development of the role of nurse practitioners (NPs) e.g. by improving access to health care in remote and rural Australia	
Thompson RE. 1998	1998	United States of America	ED	Sustainability defined as meeting the needs of the present whilst guarding resources for future generations		Financial and moral factors that influence physician decisions, which have ultimately been influenced by politics and laws	"Managed care" needs to mature and evolve through supporting teaching, research, patient care and care for their staff	

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2021-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

<p>Tricco, A. C., H. M. Ashoor, R. Cardoso, H. MacDonal d, E. Cogo, M. Kastner, L. Perrier, A. McKibbo n, J. M. Grimshaw , and S. E. Straus. 2016.</p>	<p>2016</p>	<p>Canada</p>	<p>RA</p>		<p>Scoping review to see what knowledge could be gained from studies aiming to use knowledge translation to improve health of patients managing chronic diseases</p>			<p>Specifically examined articles that had follow-up one or more years after the initial test, or continued beyond the funding period</p>	
<p>Tsasis P. 2009</p>	<p>2009</p>	<p>Canada</p>	<p>ED</p>				<p>The potential of improving access to home care for older patients with one or more chronic illnesses through improving funding for these programs. Additionally, interdisciplinary teamwork and having a patient-centred approach</p>		

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

							to care has the potential to improve health system sustainability by minimising drug interactions and conflicting advice given to patients	
Van de Pas R, Hill PS, Hammonds R, et al. 2017	2017	Worldwide	ED				The current sustainable development goals (SDGs) are superficial, and more political debate on structure, policy and agency are needed to bridge the gap and overcome existing health injustices. Also noted that many of the SDGs, although not specifically health related, have impacts on health	Stewardship embodying the establishment of norms, values and rules to guide policy development and advocacy for global health across sectors. Also recognised as important is the production of global public goods, the mobilization of global solidarity and the management of externalities e.g., governments, states or

1136/bmjopen-2021-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

1136/bmjopen-2021-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

							transnational bodies	
Veillard J, Denny K. 2014	2014	Canada	ED			The majority of health care spending is on a small proportion of patients	Need for more consistency in practice and delivery methods	
Wakerman J, Humphreys JS. 2011	2011	Australia	RA			Addressing rural and remote areas in Australia. These areas are known for their deficits e.g., high morbidity and mortality, workplace shortages, lack of services and high cost of care delivery. Systems need to realise there is no one-size-fits-all solution, and changes need to align the on the micro-scale health service level as well as the macro-scale	A systematic approach is needed to improve primary health care	

1136/bmjopen-2021-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

						external policy environment		
Wakerman J, Humphreys JS. 2013	2013	Australia	ED			Tension between national health workforce policy initiatives and demographic, socioeconomic and political forces. Overall, health care service access and the health status is worse in non-metropolitan areas	The aim is to provide accessible, affordable, appropriate health care regardless of geography. Potential improvement in the number of doctors in regional and rural areas if there is a change in the culture of thinking of rural areas as negative and through the increased number of medical students being trained appropriately for regional and remote work, and addressing the other workforces that collaborate with the rural services (e.g.,	

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2021-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

							funding, infrastructure, governance), and increasing the accountability of the health service through agreed indicators and output measures		
Woodward, G. L., A. Iverson, R. Harvey, and P. G. Blake. 2015	2015	Canada	ED			Recognises the challenge of bridging policy and practice		Requires leadership, transparency, accountability and communication	
Wutzke, S., M. Benton, and R. Verma. 2016	2016	Australia and New Zealand	EM					Four general factors were found to be present in successful interventions: 1. having a sound business case for change; 2. being prepared for the change process and adapting to different contexts; 3.	

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

								promoting change through stakeholders; 4. ensuring support through the implementation process	
Zhao Y, Russell DJ, Guthridge S, et al. 2017	2017	Australia	EM		Regression analyses of payroll data	Managing fluctuations in funding and the translation of this to staff			
Pisco L, Pinto LF.. 2020	2020	Portugal	ED			Comorbidity and increasing age	Suggests that primary healthcare and preventive care (e.g., maternal health, disease prevention, vaccines etc.) is strong investment to increase productivity and strengthen social cohesion		
Ganann R, Peacock S, Garnett A, et al. 2019.	2019	Canada	ED			Discusses how an ageing population presses the need for sustainable	Capacity building through health services and policy research training in the following		

1136/bmjopen-2021-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2021-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

						healthcare system.	competencies: understanding health systems and the policy-making process, integrated knowledge transition activities tailored to the specific needs of primary healthcare clinicians and policy making, networking, negotiation an dialogue, project management, interdisciplinary collaborations among patients researchers health practitioners and policy makers, change management implementation, leadership mentorships and collaboration, analysis and evaluation of health related policies and		
--	--	--	--	--	--	--------------------	---	--	--

For peer review only

							programs, ensuring capacity for meaningful patient engagement, mobilising existing expertise, supporting careers, building capacity to apply research to real-world problems.		
Jessup RL, O'Connor DA, Putrik P, et al. 2019.	2018	Global	ED			Increasing pressures from ageing population, increasingly prevalent chronic disease, higher cost of tests, workforce shortages.			
Vainieri M, Noto G, Ferre F, Rosella LC. 2020.	2020	Global	ED	Defines sustainability as the ability of a health system to meet the needs of present and future.	broadly discusses how performance monitoring or measurement isn't currently sensitive enough to monitor	Overall short-term bias and perspective of the health system impacts establishing health system sustainability	Challenges listed include the need for improvement in data collection management, the need to adopt a patient-based perspective, and how performance measures are used in practice.		

1136/bmjopen-2021-019207 on 24 May 2022. Downloaded from http://bmjopen.bmj.com/ on April 20, 2024 by guest. Protected by copyright.

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

					health system sustainability				
Lo Sardo DR, Thurner S, Sorger J, Duftschmid G, Endel G, Klimek P. 2019.	2019	Austria	EM		Measures resilience, however, the paper argues that to be sustainable health systems must be resilient	Rising costs, chronic conditions, and ageing	To counter unsustainability health systems must be resilient		
Williams I, Allen K, Plahe G. 2019.	2019	England	EM		Rationing of finances and how this occurs in reality, with reference to the 'seven forms of rationing' (and how this can be applied to see if health systems are sustainable) - e.g., dilution via spreading thin of resources	Recognition that there are perceived barriers to timely release of central funding, and the need to prioritise spending			
Ammentorp J, Bigi	2021	Australia, Ireland,	EM			Challenges to implementing	Communication training program		

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

S, Silverman J, et al. 2021.		Austria, Denmark				programs: convincing investors, involving stakeholders, locating change agents	→ improving competencies and knowledge related to patient centred care		
Braithwaite J, Mannion R, Matsuyama Y, et al. 2018.	2018	Global	ED			Common pressures or stressors are manifesting in every healthcare system; these include scarcity of financial and staff resources, expectations of the public, and maintaining healthy relationships with multiple stakeholders			
Buttigieg SC. 2019.	2019	Global	ED	Sustainability in healthcare defined as “key task for health policy-makers to withstand social,		Challenges discussed include service delivery, human resources, leadership and governance	“Among these include an open innovation strategy that redesigns sharing intellectual property, resources, and data – and therefore		

1136/bmjopen-2021-029207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2021-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

				financial, and ecological pressures and challenges"			introducing flexibility, easier accessibility to libraries and collections of molecular entities, as well as opportunities for external researchers to work alongside company scientists."	
Byskov J, Maluka S, Marchal B, et al. 2019.	2019	Global	RA					"The debate on defining and operationalizing more sustainable systems approaches by more strongly including a priority setting and a decision-making process guidance raises the question whether (1) technical evidence-based information is most important and can be improved by

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2021-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

							more participatory value and specific context-based approaches (Baltussen et al., 2013) or (2) the participatory democratically based approaches (Biehl and Petryna, 2013; Daniels et al., 2015) are most important, but need support from technical evidence.”	
O'Brien N, Li R, Isaranuwatchai W, et al. 2019	2019	Global	ED			Paper looking at HTA as a means of improving HSS. Cites confusion over definition of HTA as a barrier to its implementation	"Health technology assessment (HTA) is a multi-disciplinary exercise for assessing the clinical and cost-effectiveness of technologies in the form mainly of programs of health (and	

1136/bmjopen-2024-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

For peer review only

							sometimes social care, together with their associated structural, procedural and implementation arrangements".. Governments consequently need to take responsibility for the development of strong and sustainable health systems	
Hanney S, Kanya L, Pokhrel S, Jones T, Boaz A. 2020.	2020	Global	RA			Research funding is a major barrier to HS research and therefore health systems cannot be improved. Discusses waste in research and fragmentation	" WHO Health Evidence Network Synthesis Reports. What is the evidence on policies, interventions and tools for establishing and/or strengthening national health research systems and their effectiveness? Copenhagen:	

							WHO Regional Office for Europe"		
Bentley C, Peacock S, Abelson J, et al. 2019.	2019	Canada	EM			Expensive cancer treatment.	The paper calls to use cost effective decisions and involve patients when making cancer funding decisions. Also, to disinvestment if that treatment becomes less effective later		
Braithwaite J, Vincent C, Nicklin W, Amalberti R. 2019.	2019	Global	ED				We will need to reflect a reasons health journey overall in evaluations and treatment		
Braithwaite J, Zurynski Y, Ludlow K, Holt J, Augustsson H, Campbell M.. 2019.	2019	Global	EM protocol	Defines fiscal sustainability, equality					
Rudnicka E,	2020	Global	ED				An ageing population	establishing a platform of	

1136/bmjopen-2021-059207 on May 2022. Downloaded from http://bmjopen.bmj.com/ on April 20, 2024 by guest. Protected by copyright.

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2021-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

<p>Napierała P, Podfigurna A, Męczekalski B, Smolarczyk R, Grymowicz M. 2020.</p>							<p>innovation and change, support country planning and action, collect better global data on health ageing, promoting research that addresses the current and future needs of older people, aligning health systems to the needs of older people, laying the foundations for a long-term care system in every country, Ensuring the human resources necessary for integrated care, undertaking a global campaign to combat ageism, defining an economic case for investment, Enhancing the</p>	
---	--	--	--	--	--	--	--	--

For peer review only

1136/bmjopen-2021-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

								global network for age-friendly cities and communities.
Shen H, Sui Y, Fu Y. 2020.	2020	Global	EM		This paper looks at apply social choice theory and the Stochastic Multicriteria Acceptability Analysis for group decision making (SMAA-2) to measure the value of health systems. The measurement consistent of three metrics; access, satisfaction, and efficiency, and considers individual preference to each. The article			

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

					suggested that measuring value is the ultimate goal of modern healthcare and can assist in building sustainable health systems			
Fridell M, Edwin S, von Schreeb J, Saulnier DD. 2020.	2020	Global	RA				Implies that resilience is essential to a sustainable healthcare system. Common factors contributing to resilience included: financing, highly skilled	

For peer review only

1136/bmjopen-2021-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

							workforce, continuous collection of information at the population level, leadership and governance, medical products (such as vaccines and affordable medications), and service delivery.		
Walsh K. 2019.	2019	Global	ED			Limited budget: "Health systems strengthening is a challenge – how can we improve access, coverage, quality and efficiency, and still keep within a limited budget?"	Developing human resource potential through e-learning	Broadening e-learning through online simulations, build on access (e.g., expand to mobile devices and apps)	
De Santis M. 2019.	2019	Global	RA			Change is expensive and incremental, integrated care is hard to quantify	Suggests that integrated care is a solution to system fragmentation, efficiency, and high costs in chronic disease and rare diseases	To achieve and scale integrated care there must be: political support and commitment, strong governance, stakeholder	

For peer review only - <http://bmjopen.bmj.com/site/about/guidelines.xhtml>

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2021-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 29, 2024 by guest. Protected by copyright.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

								engagement, organisational change, leadership, workforce education and training, patient focus/empowerment, financing incentives, ICT infrastructure and solutions, monitoring/evaluation system	
Ferrelli RM, Fantini B, Taruscio D. 2019.	2019	European Union	ED			Affordability and financing of equal access and healthcare delivery for people with rare diseases	Discusses networking or rare diseases providers to improve knowledge and healthcare delivery in the EU. The paper also suggests that resilience is important to sustainability	Discusses levers about to build a sustainable health system for rare diseases. Levers include: organisation structure, partnerships, workforce, knowledge development, leadership and governance, and country specific context.	
Steenhuis S, Struijs J,	2020	Global	RA			Discusses challenges in implementing	"Our study shows that bundled payment		

For peer review only

1136/bmjopen-2021-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

Koolman X, Ket J, E VDH. 2020.						and changing payment methods to address health system sustainability	contracts affect a broad range of health system actors, so their design and implementation should not be approached as merely the introduction of a new contracting model, but as part of a broader transformation to a more sustainable, value-based health care system. This approach should not focus on the volume and price of separate health care products but on the full care cycle of patients and the integral costs and outcomes associated with it"		
Nikolić B. 2020.	2020	European Union	ED			Discusses the fiscal	This paper focuses on	This paper discusses how	

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2021-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

						sustainability of health systems, how spending has outpaced GDP and uses Baumols theory and the human factor in healthcare (that much of it cannot be automated) causing costs to rise.	market competition and competition law between providers and how this could improve costs	healthcare providers can be considered undertakings through international case law and through guidelines e.g., separation of each activity performed, separation of management activities and calculate the economic nature of each of service item.	
Niraula S. 2019	2019	Canada	ED			Discusses how cancer medication funding is at odds, and needs to be balanced against, the fiscal sustainability of the healthcare system in Canada. A challenge in this sector is that	To address the high cost, and maintain fiscal sustainability the authors suggest to: improve collaborations and decrease duplication of efforts in R&D, minimise the conflicts of interest among members, involv		

For peer review only

1136/bmjopen-2021-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

						cancer drugs are expensive	citizens into decision making process, reconsider the funding model to an outcomes based funding model, incentivise cheaper alternatives (generic drugs) and penalise branded ones.		
Pereno A, Eriksson D. 2020.	2020	Nordic Countries	EM and RA	“In spite of the different ways to define sustainable healthcare systems, and regardless of whether the three-pillar model or the integrated understanding of sustainability is applied, all		In the introduction the paper mentions rising costs, chronic disease, societal pressure such as informed and sometimes demanding patients			

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

				approaches seem to have in common that a comprehensive approach with a long-term focus and a need to balance economic, social, and ecological interests needs to be used in the discussion of sustainable healthcare systems.”				
Bogaert P, van Oers H, Van Oyen H. 2018.	2018	European Union	EM and RA		By developing a sustainable health information infrastructure for monitoring performance		A unified information system with clear governance, central coordination and distributed implementation across EU countries will	Vague - it talks mainly about the structure of the information systems

For peer review only - <http://bmjopen.bmj.com/site/about/guidelines.xhtml>

1136/bmjopen-2021-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

							support system performance - provide unified data		
Wurcel V, Cicchetti A, Garrison L, et al. 2019.	2019	Global	ED			financial implications of value of diagnostic information (VODI), including supporting cost containment, allowing timely interventions and preventing disease progression and long term cost. This requires rapid technological pathology testing and turn around times to allow rapid clinical decisions (e.g., point-of-care testing, e-health records)	the need to identify and leverage the benefits of the value of diagnostic information for health systems		

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2021-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 29, 2024 by guest. Protected by copyright.

Cunningham FC, Ranmuthugala G, Westbrook JJ, Braithwaite J. 2019	2019	Australia	ED		Via the framework/network.				
Embi PJ, Richesson R, Tenenbaum J, et al. 2019	2019	USA	ED	Learning health system			the research results should extend far beyond the awardees who conduct the research, and there should be collaboration between funding agencies	that federal funding agencies should see investment in an initiative as an ongoing strategic investment rather than a time-limited option	
Enticott J, Braaf S, Johnson A, Jones A, Teede HJ. 2020.	2020	Australia	EM	Links to a learning health system relying on continuous learning		challenge of engaging multiple stakeholders in governance, research and within the health system itself; having leadership with focus, vision and engagement; skilled	creating a vibrant learning culture with top down and bottom up support; clinician engagement and inclusion; transparency around patient data use and research	importance of consistent investment/funding overtime	

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

						workforce and capacity building; data access and sharing/collaborating with consent		
Park YL, Canaway R. 2019.	2019	WHO Western Pacific Region	ED	"Healthcare system sustainability and resilience relate to preparedness and capacity to cope in the face of disease outbreak or disaster."			Move towards universal healthcare which will enable "quality; efficiency; equity; accountability; and sustainability and resilience"	Well-established care Utilising traditional medicine
Quaglio G, Figueras J, Mantoan D, et al. 2018.	2018	Italy/Belgium	ED			Y "Over the last 2 decades, health systems in the European Union (EU) are being questioned over their effectiveness and	Y - "(i) community participation is a key principle of health promotion practices, stemming from an ideological position that shifts from a	

1136/bmjopen-2021-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

For peer review only

					<p>sustainability. In pursuing both goals, they have to conciliate coexisting, not always aligned, realities. For example, (i) an epidemiological transition where chronic conditions and complex patients require integrated services pivoting around primary care, that contrasts with the prevalence of specialized, rather fragmented care, mainly provided by hospitals;1,2 (ii) a pervasive idea that more care is always</p>	<p>bio-medical paradigm towards a social model that creates conditions where people are active participants in their own healthcare;16 (ii) strengthening primary care is one of the major challenges facing EU healthcare systems as they reduce fragmentation in care provision. Decision makers are searching for models that are able to increase the whole pathway of care: primary, secondary and tertiary, long-term care and eventually social care;17 (iii)</p>		
--	--	--	--	--	---	--	--	--

1136/bmjopen-2021-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

					<p>better than less care, when there is a widespread evidence of inappropriate use of treatments and technologies;³ (iii) the rising promise of personalized medicine, that eclipses the efforts in promoting healthy lifestyles;⁴ or (iv) the increasing demand of information and transparency with respect to services' quality and safety, that contrasts with serious flaws in the good governance of health services.⁵</p>	<p>threats to good governance— lack of appropriate competences, the existence of conflicts of interest, bureaucratic rigidity— translate into a lack of transparency, poorly thought-out policies and the prevailing use of the 'low-hanging fruit' strategy;¹⁸ and (iv) finally, the generation and reuse of health data (administrative, clinical, environmental, etc.) are essential in embracing the change in the knowledge paradigm towards learning health systems</p>	
--	--	--	--	--	---	--	--

1136/bmjopen-2021-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

						Underlying these challenges is a profound transition in the medical knowledge paradigm, from the traditional and prevailing heuristic approach to the development of data-driven learning systems."	and subsequently toward more sustainable health systems"		
Kilbourne AM, Braganza MZ, Bowersox NW, et al. 2019.	2019	USA	EM			Funding, lack of incentives for researchers to apply their research into practice		Discusses how the learning health system may contribute to incremental change and enhancement of health system performance.	
Lehoux P, Roncarolo F, Silva HP, Boivin A, Denis JL,	2019	Global	RA			"Since the late 1980s, new health technologies not only	Successful health systems are characterized by healthy people, superior care and fairness. The		

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2021-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

<p>Hebert R. 2019.</p>						<p>increased global inequalities, but they also undermined the sustainability of health systems in rich and poor countries alike. "</p>	<p>researchers write that "over the next decades it will be imperative to implement policies that can support the development, financing and use of innovations that do not compromise but rather contribute to the success and sustainability of health systems."</p>		
<p>Editorial. Healthcare quarterly (Toronto, Ont.). 2020;22(4)</p>	<p>2020</p>	<p>Canada</p>	<p>ED</p>	<p>Health systems need the right distribution of educated health professionals who have the right training and mindset; the skills and support to build</p>	<p>Yes</p>	<p>Yes</p>	<p>Yes</p>	<p>Yes</p>	

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

				effective teams and visionary leaders who co-create compassionate cultures and inclusive partnerships that foster integrated patient-centred care; and the right resources, processes, and tools to deliver solutions for current and future demands.				
Measuring universal health coverage based on an index of	2020	Global	EM		Measures of UHC; UHC viewed as way of achieving health system sustainability and	Talks about challenges in achieving UHC- especially for low income countries - identifies per-capita spending		

For peer review only

1136/bmjopen-2021-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

<p>effective coverage of health services in 204 countries and territories, 1990-2019: a systematic analysis for the Global Burden of Disease Study 2019. Lancet (London,</p>					<p>sustainable health outcomes.</p>	<p>to be able to reach 90% UHC as \$2538...Also identifies USA as outlier - achieves only 82% overall coverage despite spending ~8500 per capita</p>			
<p>Abimbola S, Baatiema L, Bigdeli M.. 2019.</p>	<p>2019</p>	<p>Global</p>	<p>RA</p>	<p>Talks about resilient structures and Financing models</p>		<p>Talks about the challenges of decentralisation - i.e.. Decentralised governance and financing to jurisdictions and the impacts of this model. Australian specific</p>			

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

<p>Barbazza E, Kringos D, Kruse I, Klazinga NS, Tello JE. 2019.</p>	<p>2019</p>	<p>Global</p>	<p>EM & RA</p>	<p>Provides a definition of a sustainable primary care system that is linked with the broader health system</p>	<p>Provides a framework "The resulting framework applies a performance continuum in the classical approach of structures-processes-outcomes spanning 6 domains – primary care structures, model of primary care, care contact, primary care outputs, health system outcomes, and health outcomes – that are further classified by 26 subdomains and 63 features of</p>	<p>Lack of standardised data collection; poor linkage of primary care with broader system</p>			
---	-------------	---------------	--------------------	---	--	---	--	--	--

For peer review only

1136/bmjopen-2021-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

					primary care."				
Craig N, Robinson M. 2019.	2019	Scotland	ED	Yes		Yes		Yes	
Costa-Font J, Levaggi R. 2020.	2020	Global	ED	This perspective paper argues that a sustainable health system design encompasses identifying opportunities and incentives for innovation, alongside an analysis of its effect on expenditure. Although aging alone is not a powerful cost driver, the	Mainly in terms of economic outcomes	Focuses on ageing and increasing demands for new medical technologies including new treatments but talks about the potential impact of prevention	Prevention	Yes	

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

				<p>combined effect of costly innovation, personalized care, and the rise of chronic conditions is. We identify an increasing role of prevention, the reduction of the prevalence of chronic conditions, re-organisation of incentives in health care markets, including a closer scrutiny of the appropriateness of new treatments</p>				
--	--	--	--	--	--	--	--	--

For peer review only

<p>Derakhshani N, Doshman gir L, Ahmadi A, Fakhri A, Sadeghi-Bazargani H, Gordeev VS. 2020.</p>	<p>2020</p>	<p>Global</p>	<p>RA</p>	<p>UHC is implied to be a sustainable health system</p>	<p>Focussed on UHC as a goal for sustainability ; uses a framework and several dimensions... Talks about determinants, barriers and enablers of sustainable UHC</p>	<p>Service delivery (dimension 5) is another dimension of the suggested tool with four axes: basic benefits package, geographical access, quality of care, and human resources for health. In regards to the benefits package axes, developing an affordable, sustainable, and equitable basic package of health care services that can serve various population needs is a challenge.</p>	<p>Yes - talks about culture, integration, seamless care. Diffusion of Excellence practices in making a difference every day for veterans, this article highlights 4 different practice areas: 1) direct scheduling, 2) access to health care in rural areas, 3)</p>	<p>Yes - Social infrastructure and social sustainability (dimensions 1–2) seem to be influential factors in progress towards UHC: society literacy, community income, poverty, age group, and population.⁵⁴ To reach social sustainability and providing social infrastructure, as well as providing sustainable development, political will and determination, technical skills, expertise, and administrative cooperation are required.</p>
---	-------------	---------------	-----------	---	---	--	--	--

1136/bmjopen-2021-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2021-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

								Political commitment can be a pivotal issue in progress to achieve UHC. Socio-political and economic sustainability essential to support a sustainable UHC
Clancy C. 2019.	2019	USA	ED	Not as such... indirect	talks about data to support innovation and measure success		Yes - talks about culture, integration, seamless care. Diffusion of Excellence practices in making a difference every day for veterans, this article highlights 4 different practice areas: 1) direct scheduling, 2) access to health care in rural areas, 3) access to mental health care, and 4) interactive and	large national network providing care to 9 million veterans; Importance of systems and data. The next challenge, however, is elevating such lessons learned to transition the initiative from a nascent start-up to a sustainable part of VHA's culture. There are 3 primary components of the current

For peer review only - <http://bmjopen.bmj.com/site/about/guidelines.xhtml>

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2021-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

							patient-centred care.	transition plan: 1) cultivate the culture, 2) build partnerships and encourage collaboration, and 3) embrace appropriate technology.
Marcotte LM, Moriates C, Wolfson DB, Frankel RM. 2020.	2020	USA	ED	indirectly describes sustainability through high value care, professionalism and education and appropriate incentives and remuneration; It talks about re-conceptualising high value in terms of "infusing" this concept as a principle for			Yes - supporting professionalism is seen a more durable intervention rather than dealing with incentives for single aspects of practice. Linking professionalism with payment reform	"Medical professionalism is a strong, durable, intrinsic motivator for improving value in healthcare delivery and should be employed to support training efforts, systems change and payment reform".

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

				practice among all doctors in training... Providing high-value care as a competency for doctors in training				
Witter S, Palmer N, Balabano va D, et al. 2019.	2019	Global	RA	The term “HSS” first came from a recognition of the need to address the distorting effects of increasing expenditure on vertical programmes targeted to address specific diseases and interventions (e.g., HIV/AIDS, polio) in the absence of support to				

1136/bmjopen-2021-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 24, 2024 by guest. Protected by copyright.

				broader systems, while recognising that without strengthening of basic health systems, vertical programmes would be unlikely to deliver as expected.				
Sturmberg JP. 2018	2018		ED				Could work to improve the resilience of patients with multi-morbidities. This has been shown to help prevent overutilization of the health system as well as improve the QOL of patients	
Thistlethwaite JE, Dunston R,	2019	Australia	ED		Recognise that interprofessional health education		The importance and shift of interprofessional education from an organisational	

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

Yassine T. 2019.					needs to be funded constantly (even if funding is relatively small) and that it needs to be able to be adapted to micro, meso and macro processes		to a national level, and the role of national funding		
Iskrov G, Stefanov R, Ferrelli RM. 2019.	2019	European Union	ED		Recognition that fiscal sustainability is important, and that achieving this means that more prevalent diseases get more funding	The challenge of making primary care accessible, affordable, and reducing unnecessary hospital admissions. Integrating the health workforce to the benefit of the patient. Anticipating for changes in need and changing the health workforce accordingly.			

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2021-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

						And that constant data collection and analysis could improve policy and practice			
--	--	--	--	--	--	--	--	--	--

*Note.

ED – editorial, opinion piece; RA – review article, EM – empirical article.

For peer review only

HOW CAN THE HEALTHCARE SYSTEM DELIVER SUSTAINABLE PERFORMANCE? A SCOPING REVIEW

ADDITIONAL FILE 2: QUALITY ASSESSMENT

Hawker rating for included empirical articles

Reference	Abstract and title	Introduction and aims	Method and data	Sampling	Data analysis	Ethics and bias	Finding and results	Transferability and generalizability	Implications and usefulness	Total (out of 36)
Ament SMC, Gillissen F, Moser A, Maessen JMC, Dirksen CD, von Meyenfeldt MF, et al. 2014	4	4	4	3	4	4	4	3	3	33
Bramesfeld, A., F. Amaddeo, J. Caldas-de-Almeida, G. Cardoso, A. Depaigne-Loth, R. Derenne, V. Donisi et al. 2016	4	4	3	3	4	1	4	3	4	30
Buttigieg SC, Schuetz M, Bezzina F. 2016	3	3	4	3	3	4	4	3	4	31

1136/bmjopen-2021-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

Buykx P, Humphreys JS, Tham R, et al. 2012	4	4	2	1	1	3	4	2	4	25
Cho CC, Ramanan RA, Feldman MD. 2011	4	3	4	4	4	1	4	3	4	31
De Rosis S, Nuti S. 2018	3	4	4	3	4	1	4	3	3	29
Dunn, P. M., B. B. Arnetz, J. F. Christensen, and L. Homer. 2007	3	4	4	4	4	1	4	3	3	30
Ehrlich C, Kendall E. 2015	4	3	4	3	3	3	4	3	3	30
Farmanova E, Kirvan C, Verma J, et al. 2016	4	3	3	2	3	1	4	2	4	26
Foo, C. Y., K. K. Lim, S. Sivasampu, K. B. Dahian, and P. P. Goh. 2015	4	4	3	2	4	2	4	3	3	29
Fox, L. A., K. E. Walsh, and E. G. Schainker. 2016	4	4	4	1	4	1	4	2	3	27
Garde S, Hullin CM, Chen R, et	3	4	3	4	4	1	3	2	3	27

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

al. 2007;129(Pt 2):1179-1183.										
Global, regional, and national disability-adjusted life-years (DALYs) for 315 diseases and injuries and healthy life expectancy (HALE), 1990-2015: a systematic analysis for the Global Burden of Disease Study 2015. 2016	4	4	4	3	4	3	4	4	4	34
Heron, N. 2015.	3	3	4	4	4	1	4	4	2	29
Hibbert PD, Thomas MJW, Deakin A, et al. 2018	4	4	3	3	4	3	4	3	4	32
Kerr R, Hendrie DV. 2018	4	4	4	3	4	3	4	3	4	33
Levine, S., S. O'Mahony, A. Baron, A. Ansari, C. Deamant, J. Frader, I.	4	3	4	3	4	1	4	3	4	30

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

Leyva, M. Marschke, and M. Preodor. 2017										
Lizarondo, L., C. Turnbull, T. Kroon, K. Grimmer, A. Bell, S. Kumar, M. McEvoy et al. 2016	4	4	4	3	4	3	3	3	4	32
McVeigh J, MacLachlan M, Gilmore B, et al. 2016;12(1):49.	4	3	3	3	4	4	4	3	3	31
McGrath, S. P., and G. T. Blike. 2015	4	4	4	3	3	1	4	1	2	26
Molfenter, T., D. Gustafson, C. Kilo, A. Bhattacharya, and J. Olsson. 2005	2	2	4	2	4	3	3	3	4	27
Rees, G. H. 2014	3	4	3	3	4	1	4	3	4	29
Robertson J, Walkom EJ, Henry DA. 2011	4	4	4	3	4	4	4	3	3	33
Scheirer MA. Is sustainability	3	2	3	3	4	4	2	2	4	27

possible? A review and commentary on empirical studies of program sustainability. Am J Eval. 2005;26(3):320-47.										
Schwann, N. M., K. A. Bretz, S. Eid, T. Burger, D. Fry, F. Ackler, P. Evans et al. 2011	4	2	4	2	4	3	3	2	3	27
Shaw J, Wong I, Griffin B, Robertson M, Bhatia RS. 2017	3	4	4	2	4	1	4	3	3	28
Solon, O., K. Woo, S. A. Quimbo, R. Shimkhada, J. Florentino, and J. W. Peabody. 2009	4	4	4	3	4	3	4	3	4	33
Stockdale, S. E., J. Zuchowski, L. V. Rubenstein, N. Sapir, E. M.	4	4	4	3	4	1	4	3	4	31

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2021-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

Yano, L. Altman, J. J. Fickel, S. McDougall, T. Dresselhaus, and A. B. Hamilton. 2016										
Wutzke, S., M. Benton, and R. Verma. 2016	4	4	4	3	4	4	4	3	3	33
Zhao Y, Russell DJ, Guthridge S, et al. 2017	4	4	4	3	4	3	4	3	4	33
Lo Sardo DR, Thurner S, Sorger J, Duftschmid G, Endel G, Klimek P. 2019.	3	3	2	1	4	1	4	3	3	24
Williams I, Allen K, Plahe G. 2019.	3	4	4	4	4	4	4	4	4	35
Ammertorp J, Bigi S, Silverman J, et al. 2021.	4	4	3	3	4	3	4	4	4	33
Bentley C, Peacock S, Abelson J, et al. 2019.	4	4	3	3	3	3	4	4	4	32
Shen H, Sui Y, Fu Y. 2020.	4	4	2	2	4	4	4	4	4	32

Fridell M, Edwin S, von Schreeb J, Saulnier DD. 2020.	4	4	3	3	4	4	4	4	4	34
Pereno A, Eriksson D. 2020.	3	4	3	3	4	3	4	4	4	32
Bogaert P, van Oers H, Van Oyen H. 2018.	4	4	4	3	3	3	4	4	4	33
Enticott J, Braaf S, Johnson A, Jones A, Teede HJ. 2020.	4	4	4	3	4	4	4	3	4	34
Kilbourne AM, Braganza MZ, Bowersox NW, et al. 2019.	4	3	3	3	4	2	3	4	4	30
Measuring universal health coverage based on an index of effective coverage of health services in 204 countries and territories, 1990-2019: a systematic analysis for the Global Burden of Disease	4	4	4	4	4	3	4	4	4	35

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2021-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

Study 2019. Lancet. 2020.										
Barbazza E, Kringos D, Kruse I, Klazinga NS, Tello JE. 2019.	4	4	4	4	4	3	4	3	3	33

Note.

Each category is rated on a 4-point scale (from 1=“very poor” to 4=“good”) to create a total score of up to 36

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2021-059207
24 May 2022, 10:28:10
Not certified for publication
http://bmjopen.bmj.com/ on April 26, 2024 by guest
First published by copyright.

AACODS rating for editorial and opinion articles

Reference	Authority		Accuracy		Coverage		Objectivity		Date		Significance	
	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment
Al Dhawi AA, West DJ, Jr., Spinelli RJ, Gompf TA. The challenge of sustaining health care in Oman. <i>Health Care Manager.</i> 2007;26(1):19-30.	Yes	Authors have authority, relevant references included. Published in peer-reviewed journal	Yes	Brief clear and met, peer reviewed	Yes	Focus on Oman	Yes	Author bias not explicitly stated, but standpoint is balanced	Yes	Context of article identifiable. Key contemporary references included	Yes	Important article in recognising threats to the health system in Oman, and a model for sustaining health care reform in Oman is discussed
Amalberti, R., W. Nicklin, and J. Braithwaite . 2016. Preparing national health systems to cope with	Yes	Authors have authority, relevant references included. Published in peer-reviewed journal	Yes	Aim not explicit, but article to report on an international workshop previously conducted. No	Yes	Wide coverage, worldwide discussion encapsulating main issues associated with an ageing population	Yes	Recognise this paper made in association with the International Society of Quality in Health Care (ISQua)	Yes	Clear date acknowledged as from 1960s currently (2016 when article was published). Key	Yes	Good summary of current worldwide problem, and nuance between cohorts of countries experienci

1136/bmjopen-2022-005927 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> by guest. Protected by copyright.

<p>the impending tsunami of ageing and its associated complexities: Towards more sustainable health care. <i>Int J Qual Health Care</i> 28 (3):412-414. doi:10.1093/intqhc/mzw021.</p>				<p>method reported. Published in peer-reviewed journal</p>				<p>and participants from the countries involved. However, offers a balanced opinion of the issues discussed</p>		<p>references also included</p>		<p>ng an ageing population to different extents</p>
<p>Armstrong BK, Gillespie JA, Leeder SR, Rubin GL, Russell LM. Challenges in health and health care for Australia. <i>Medical</i></p>	<p>Yes</p>	<p>Authors have authority, relevant references included. Published in peer-reviewed journal</p>	<p>Yes</p>	<p>Brief clearly stated in presenting the challenges to make a sustainable health care system</p>	<p>Yes</p>	<p>Focus on Australian health system</p>	<p>Yes</p>	<p>Author bias not explicitly stated, but standpoint is balanced</p>	<p>Yes</p>	<p>Context of article identifiable. Key contemporary references included</p>	<p>Yes</p>	<p>Unique and useful article outlining some main challenges of health care, tailored to the health system and context in question</p>

<i>Journal of Australia.</i> 2007;187(9):485-489.												
Atmore C. The role of medical generalism in the New Zealand health system into the future. <i>New Zealand Medical Journal.</i> 2015;128(1419):50-55.	Yes	Authors have authority, relevant references included. Published in peer-reviewed journal	Yes	Brief clear and met, no method provided	Yes	New Zealand health care specific, but recognises that the solution could be applied to other health systems	Yes	Author bias not explicitly stated, but standpoint is balanced	Yes	Context of article identifiable. Key contemporary references included	Yes	Emphasises the importance of being a generalist and how this could trailblaze this new role and system design for other countries
Barasa EW, Cloete K, Gilson L. From bouncing back, to nurturing emergence: reframing the concept of resilience in health systems	Yes	Authors have authority and are from various continents around the globe, relevant references included. Published in peer-	Yes	Brief described and met. No methodology provided	Yes	Worldwide coverage that aligns with the authors diverse backgrounds	Yes	Well balanced presentation incorporating worldwide need to nurture everyday resilience in health care, rather than	Yes	Framed around the Ebola outbreak (2014-2016). Contemporary references also used	Yes	Relevant worldwide to all health systems

1136/bmjopen-2021-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

strengthening. <i>Health policy and planning</i> . 2017;32(suppl_3):iii91-iii94.		reviewed journal						just in emergencies				
Bessler JS, Ellies M. Values and value--a vision for the Australian health care system. <i>Australian Health Review</i> . 1995;18(3):6-17; discussion 18-29.	Partially	Authors have authority in IT but not healthcare, relevant references included. Published in peer-reviewed journal	Yes	Brief clear and met, no method provided, peer-reviewed	Yes	Focus on Australian health system	Yes	Author bias not explicitly stated, but standpoint is clear	Yes	Context of article identified as current (at time of publication). Key contemporary references included	Yes	Investigates the need for health reform to address rising costs with the health system and increase its sustainability
Birch S, Murphy GT, MacKenzie A, Cumming J. In place of fear: aligning health care	Yes	Authors have authority in a combination of fields (health economics, policy	Yes	Clear brief in outlining the current healthcare expenditure, and creating the healthcare	Yes	Worldwide, with examples from Australia, the UK and Canada	Yes	Authors standpoint clear. Examples from numerous countries and from reviews in the field,	Yes	Context of article identifiable. Key contemporary references included	Yes	Presents a healthcare sustainability framework

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

planning with system objectives to achieve financial sustainability. Journal of Health Services & Research Policy. 2015;20(2):109-114.		analysis, health services and nursing), relevant references included. Published in peer-reviewed journal		sustainability framework to identify determinants of healthcare expenditure, so that it can evolve with population needs				seems well balanced.				
Buchan J. What difference does ("good") HRM make? <i>Human Resources for Health [Electronic Resource]</i> . 2004;2(1):6	Yes	Authors have authority, relevant references included. Published in peer-reviewed journal	Yes	Argument is clear and balanced	Yes	Worldwide context, relates discussion to meeting the sustainable development goals, and discusses the role of human resource management in the health system	Yes	Authors standpoint is clear on the importance of human resource management	Yes	Context of article identifiable. Key contemporary references included	Yes	Contributes the importance of implementing, disseminating and sustaining good HRM in health systems

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2020-025277 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

<p>Buchan JM, Naccarella L, Brooks PM. Is health workforce sustainability in Australia and New Zealand a realistic policy goal? <i>Australian health review : a publication of the Australian Hospital Association</i> . 2011;35(2): 152-155.</p>	<p>Yes</p>	<p>Authors have authority, relevant references included. Published in peer-reviewed journal</p>	<p>Yes</p>	<p>Brief clear and met, peer reviewed</p>	<p>Yes</p>	<p>Australia and New Zealand context</p>	<p>Yes</p>	<p>Author bias not explicitly stated, but standpoint is balanced</p>	<p>Yes</p>	<p>Context of article identifiable. Key contemporary references included</p>	<p>Yes</p>	<p>Important argument that the health systems in Australia and New Zealand need more focus on prevention , and increasing the productivity of the health system</p>
<p>Burgess LH, Cohen MR, Denham CR. A new leadership role for</p>	<p>Yes</p>	<p>Authors have authority, relevant references included. Published</p>	<p>Yes</p>	<p>Aim and method well defined and adhered to</p>	<p>Yes</p>	<p>Worldwide, focusing on pharmacists as leaders</p>	<p>Yes</p>	<p>Author bias not explicitly stated, but standpoint is balanced</p>	<p>Yes</p>	<p>Context of article identifiable but date range of literature search not</p>	<p>Yes</p>	<p>Argues for the importance of pharmacist leaders</p>

1136/bmjopen-2022-059247 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

pharmacist s: a prescription for change. <i>Journal of patient safety.</i> 2010;6(1):3 1-37.		in peer- reviewed journal						and based on peer- reviewed literature		disclosed. Key contempor ary refer ences included		
Casale CR, Clancy CM. Commentar y: Not about us without us. <i>Academic Medicine.</i> 2009;84(10):1333- 1335.	Yes	Authors have authority, relevant references included. Published in peer- reviewed journal	Yes	Clear brief to argue for the use of communit y-based participato ry research for improving health care	Yes	Focus on United States of America health system	Yes	Author bias not stated, but recognises the bias in health care	Yes	Context of article identifiabl e. Key contempor ary refer ences included	Yes	Presents theoretical arguments for communit y-based participato ry research in response to another article in the journal
Cashin A. The challenge of nurse innovation in the Australian context of universal health care.	Yes	Authors have authority, relevant references included. Published in peer- reviewed journal	Yes	Brief clear and met, no method provided	Yes	Focus on Australian context, with emphasis on nurses	Yes	Author bias not explicitly stated, but standpoint is balanced	Yes	Context of article identifiabl e. Key contempor ary refer ences included	Yes	Important article in detailing the concept of universal health care applied to Australia to

<p><i>Collegian</i>. 2015;22(3): 319-324.</p>												empower nurse led health innovation
<p>Chambers DA, Glasgow RE, Stange KC. The dynamic sustainability framework: addressing the paradox of sustainment amid ongoing change. <i>Implement Sci</i>. 2013;8:117.</p>	Yes	Authors have authority, relevant references included	Yes	Aim of research is clear in responding to two frequent assumptions about sustainability (voltage drop and program drift)	Yes	Specific to United States of America health system	Yes	Bias not explicitly stated but authors standpoint is balanced	Yes	Context of article identifiable. Key contemporary references included	Yes	Significant as it adds the Dynamic Sustainability Network to the literature
<p>Coiera E, Hovenga EJ. Building a sustainable health system. <i>Yearb Med</i></p>	Yes	Authors have authority, relevant references included	Yes	Research aim identified and met	Yes	Worldwide, but focuses on the sustainability of current health systems	Yes	Bias not explicitly stated but is present	Yes	Context of article identifiable. Key contemporary references included	Yes	Important article with advice on the measurement and improvement of

1136/bmjopen-2021-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

1136/bmjopen-2021-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2022 by guest. Protected by copyright.

Inform 2007:11–8.												health system sustainability
Crisp N. What would a sustainable health and care system look like? <i>BMJ (Clinical research ed.)</i> . 2017;358:j3895.	Yes	Authors have authority as a member of the House of Lords (and is talking specifically about the NHS), relevant references included. Published in peer-reviewed journal	Yes	Clear brief to argue that sustainability depends on seven factors and that cross-sectional partnerships are needed to increase resilience. No methodology provided	Yes	NHS specific	Yes	Authors standpoint is clear in their argument	Yes	No date specifically, but from 1978 at the Alma Ata Declaration onwards to time of publication (2017). Contemporary references also included	Yes	Recognition of some factors that need more attention, and also needs further underpinning by the economy and through creative partnerships
Delgado, P. 2016. Meeting the Challenge of Chronic Conditions in a Sustainable	Yes	Authors have authority, relevant references included. Published in peer-	Yes	Aim to explore the aims of the Atlantic Healthcare Collaboration for Innovation	Yes	Designed to answer or discuss the aim. No specific method section, but	Yes	Bias not explicitly stated but authors standpoint is clear and based on evidence	Yes	Context of article identifiable but not specific to a particular 'date', e.g., research in	Yes	Contributes questions and suggestions for future research

Manner: Building on the AHC Learning. Healthc Pap 15 Spec No:90-95; discussion 97-123.		reviewed journal		and Improvement in Chronic Disease (AHC) and its areas of success and possible improvement		qualitative and quantitative methods employed in a separate article		from past research		area was published in 2005, while an opinion piece published in 2006. However, other contemporary references included		
Dhalla I. Canada's health care system and the sustainability paradox. <i>Cmaj.</i> 2007;177(1):51-53.	Yes	Authors have authority, relevant references included. Published in peer-reviewed journal	Yes	Brief stated, view is balanced with arguments from opposing view	Yes	Specific to Canadian health system, with Ontario as an example	Yes	Bias not explicitly stated, but work seems well balanced and acknowledges counter-arguments	Yes	Context of article identifiable. Key contemporary references included	Yes	Argument is relevant and adds new ideas to existing literature
Edwards, N., M. Rowan, P. Marck, and D. Grinspun. 2011.	Yes	Authors have authority, relevant references included. Published	Yes	Clear aim and methods provided	Yes	Specific to Canadian healthcare system	Yes	Bias not stated, article is balanced and limitations are	Yes	Contemporary references included	Yes	Relevant to Canada's healthcare system

1136/bmjopen-2024-019927 on 21 May 2024. Downloaded from <http://bmjopen.bmj.com/> April 20, 2024 by guest. Protected by copyright.

<p>Understanding whole systems change in health care: the case of nurse practitioners in Canada. Policy Polit Nurs Pract 12 (1):4-17.</p>		<p>in peer-reviewed journal</p>						<p>acknowledged</p>				
<p>Ellner, A. L., S. Stout, E. E. Sullivan, E. P. Griffiths, A. Mountjoy, and R. S. Phillips. 2015. Health Systems Innovation at Academic Health Centers: Leading in</p>	<p>Yes</p>	<p>Authors have authority, relevant references included. Published in peer-reviewed journal</p>	<p>Yes</p>	<p>Aim to argue for increased support for health innovators in academic health centres in the US, and define health system innovation</p>	<p>Yes</p>	<p>Define the scope of their article in introduction: defining health system innovation, distinguishing it from quality improvement, and examining career opportunities for</p>	<p>Yes</p>	<p>Argue that increased support is needed to advance health care goals in academic health centers</p>	<p>Yes</p>	<p>Context of article identifiable but not specific (identified as 21st century in article). Key contemporary references included</p>	<p>Yes</p>	<p>Relevant to US academic medicine, educating medical students, and trying to allow healthcare at a sustainable cost</p>

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2021-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2022 by guest. Protected by copyright.

<p>a New Era of Health Care Delivery. Acad Med 90 (7):872-880. doi:10.1097/acm.0000000000000679.</p>						those who will lead health systems innovation						
<p>Fineberg HV. Shattuck Lecture. A successful and sustainable health system--how to get there from here. New England Journal of Medicine. 2012;366(11):1020-1027.</p>	Yes	Authors have authority, relevant references included. Published in peer-reviewed journal	Yes	Clear examination of USA health system and how to increase its sustainability	Yes	American health care context	Yes	Author bias not explicitly stated, but standpoint is balanced	Yes	Context of article identifiable as after the 2010 Patient Protection and Affordable Care Act . Key contemporary references included	Yes	Recognises that many steps are needed to ensure a sustainable health system, and identifies characteristics of a sustainable health system
<p>Gruen RL, Elliott JH, Nolan ML, Lawton</p>	Yes	Authors have authority, relevant	Yes	Research aim and methods	Yes	Scope of article clearly defined	Yes	Author bias not stated but viewpoint	Yes	Context of article identifiable. Key	Yes	Contributes to conversation around

1136/bmjopen-2024-059207 on April 20, 2024 by guest. Protected by copyright.

PD, Parkhill A, McLaren CJ, Lavis JN.		references included		stated and met				is balanced		contemporary references included		health system sustainability
Greenhalgh, T., F. Macfarlane, C. Barton-Sweeney, and F. Woodard. 2012. "If we build it, will it stay?" A case study of the sustainability of whole-system change in London. <i>Milbank Q</i> 90 (3):516-547. doi:10.1111/j.1468-0009.2012.00673.x.	Yes	Authors have authority, relevant references included	Yes	Research aim and methods stated and met	Yes	Based in London health system, but significance extends beyond that	Yes	Bias minimized through administering of questionnaire by blinded researchers	Yes	Context of article identifiable. Key contemporary references included	Yes	Important article with significance for improving and scaling system change that can be applied to other health systems
Guyon A, Hancock T,	Yes	Authors have	Yes	Brief clear and met,	Yes	Focus on Canadian	Yes	Author bias not	Yes	Context of article	Yes	Identifies issues

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2021-015927 on May 24, 2022 by guest. Protected by copyright.

<p>Kirk M, et al. The weakening of public health: A threat to population health and health care system sustainability. <i>Canadian Journal of Public Health. Revue Canadienne de Sante Publique.</i> 2017;108(1):e1-e6.</p>		<p>authority, relevant references included. Published in peer-reviewed journal</p>		<p>no method provided</p>		<p>health system</p>		<p>explicitly stated, but standpoint is balanced</p>		<p>identifiable and discusses current government policy (at time of publication) in Canada. Key contemporary references included</p>		<p>with government approach to public health and responds to each</p>
<p>Hovenga EJ. Impact of data governance on a nation's healthcare system building blocks. <i>Studies in</i></p>	<p>Partially</p>	<p>Authors have authority, relevant references included. Unable to determine if journal is peer-reviewed</p>	<p>Yes</p>	<p>Brief clear and met, no method provided</p>	<p>Yes</p>	<p>Worldwide, focusing on 'a nation' to explain national healthcare</p>	<p>Yes</p>	<p>Author bias not explicitly stated, standpoint based on reputable sources e.g., world health</p>	<p>Yes</p>	<p>Context of article identified as current. Key contemporary references included</p>	<p>Yes</p>	<p>Important article educating readers about IT and healthcare and sustainability of that</p>

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

<i>Health Technology & Informatics</i> . 2013;193:24-66.								organisati on				health system
Inotai A, Petrova G, Vitezic D, Kalo Z. Benefits of investment into modern medicines in Central-Eastern European countries. Expert review of pharmacoeconomics & outcomes research. 2014;14(1):71-79.	Yes	Authors have authority, relevant references included. Published in peer-reviewed journal	Yes	Aim clearly stated and adhered to. No method provided	Yes	Specific to Central Eastern European countries	Yes	Authors standpoint is balanced, citing research and the WHO	Yes	Context of article identifiable. Key contemporary references included	Yes	Relevant, useful arguments for Central Eastern European health systems to consider
Kepros JP, Opreanu RC. A new model for	Yes	Authors have authority, relevant	Yes	Brief stated and examines the	Yes	United States of America	Yes	Authors standpoint clear, bias not	Yes	Context of article identifiable. Key	Yes	Adds historical context to relationshi

1136/bmjopen-2022-005927 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

health care delivery. <i>BMC health services research.</i> 2009;9:57.		references included. Published in peer-reviewed journal		evolving relationship between hospitals, medical schools and physicians		health system		explicitly mentioned		contemporary references included		p between medical schools, hospitals and physicians, and examines the shared vision for the future
Knutson, D. J. 1997. The role of strategic alliances in ensuring health care quality: a health care system perspective. <i>Clin Ther</i> 19 (6):1572-1578.	Partially	Authors have authority, but no references included	Yes	Brief clear and met, no method provided	Yes	Specific to HealthSystems Minnesota, but may be applicable more widely	Yes	Author bias not explicitly stated, but standpoint is balanced	Yes	Context of article identifiable. Key contemporary references included	Yes	Important article that focuses on the Chronic Illness Management Research and Development Project (CIMRDP) in Minnesota
Lehoux P, Williams-Jones B, Miller F, Urbach D, Tailliez S. What leads	Yes	Authors are associated with reputable organisations in	Yes	Authors clear experts in the field within the Canadian Health	Yes	Coverage is worldwide with very broad factors of sustainabil	Yes	Authors have more knowledge regarding Canadian system than	Yes	Context of article identifiable. Key contemporary	Yes	Applicable worldwide for industrialized countries to adopt a

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

<p>to better health care innovation? Arguments for an integrated policy-oriented research agenda. <i>Journal of Health Services & Research Policy</i>. 2008;13(4):251-254.</p>		<p>their fields. Published in peer reviewed journal.</p>		<p>system, and contemporary references are cited. Published in peer reviewed journal</p>		<p>ity being discussed, drawing on a workshop at an International conference</p>	<p>worldwide and this is stated. The participants from the workshop at the International Workshop of Innovations in Health, from which this paper arose, included participants from Canada, England, Wales, and Finland. The event was funded by various Canadian grants. This standpoint</p>		<p>references included</p>		<p>new kind of policy-oriented research based on relevance, usability and sustainability</p>
--	--	--	--	--	--	--	---	--	----------------------------	--	--

For peer review only

1136/bmjopen-2021-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

								is clear by the Authors, and yet their opinion piece seems balanced				
Levin L, Goeree R, Levine M, et al. Coverage with evidence development: the Ontario experience. International journal of technology assessment in health care. 2011;27(2): 159-168.	Yes	Authors have authority, relevant references included. Published in peer-reviewed journal	Yes		Yes	Focus on health system in Ontario, Canada	Yes					
Lewis S. Can a learning-disabled	Yes	Authors have authority, relevant	Yes	Brief clear and met, no method provided	Yes	Focus on Canadian health system	Yes	Author bias not explicitly stated, but	Yes	Context of article identifiable. Key	Yes	Unique perspective, arguing for the

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2022-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

<p>nation learn healthcare lessons from abroad? <i>Healthcare policy = Politiques de sante.</i> 2007;3(2):19-28.</p>		<p>references included. Published in peer-reviewed journal</p>						<p>standpoint is balanced</p>		<p>contemporary references included</p>		<p>focus on other aspects of the health system than its sustainability</p>
<p>Liaropoulos L, Goranitis I. Health care financing and the sustainability of health systems. <i>International journal for equity in health.</i> 2015;14:80.</p>	<p>Yes</p>	<p>Authors have authority, relevant references included. Published in peer-reviewed journal</p>	<p>Yes</p>	<p>Brief clear and met, no method provided</p>	<p>Yes</p>	<p>Worldwide, but focusing on cost-effectiveness of health systems</p>	<p>Yes</p>	<p>Author bias not explicitly stated, but standpoint is balanced</p>	<p>Yes</p>	<p>Context of article identifiable. Key contemporary references included</p>	<p>Yes</p>	<p>Investigates the sustainability of health care financing around the world</p>
<p>Lozano I, Rondan J, Vegas JM, Segovia E. Sustainability of the</p>	<p>Partially</p>	<p>Authors have authority, relevant references included.</p>	<p>Yes</p>	<p>Brief clear in replying to original article. No methods</p>	<p>Yes</p>	<p>Spanish health system context</p>	<p>Yes</p>	<p>Author bias not explicitly stated, but standpoint is</p>	<p>Yes</p>	<p>Context of article identifiable. Key contemporary</p>	<p>Yes</p>	<p>Argues that the Spanish health system has many</p>

1136/bmjopen-2022-009207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

<p>Health System: Beyond Cost-effectiveness Analyses. <i>Revista espanola de cardiologia (English ed.)</i>. 2016;69(9):880-881.</p>		<p>Journal not peer-reviewed</p>						<p>balanced in addressing original article's viewpoint and rebutting as appropriate</p>		<p>references included</p>		<p>strengths, but one of its weaknesses is the lack of sustainability</p>
<p>Mackenzie J. The old care paradigm is dead, long live the new sustainable care paradigm: how can GP commissioning consortia meet the demand challenges</p>	<p>Yes</p>	<p>Authors have authority, relevant references included. Published in peer-reviewed journal</p>	<p>Yes</p>	<p>Brief clear and met, no method provided</p>	<p>Yes</p>	<p>Focus on United Kingdom</p>	<p>Yes</p>	<p>Author bias not explicitly stated, but standpoint is balanced</p>	<p>Yes</p>	<p>Context of article identifiable as beginning from 1948 until present. Key contemporary references included</p>	<p>Yes</p>	<p>Examines the significance of prevention rather than treatment to increase the sustainability of the health system</p>

of 21st century healthcare? <i>London journal of primary care.</i> 2011;4(1):64-68.												
Magnan S, Fisher E, Kindig D, et al. Achieving accountability for health and health care. <i>Minnesota medicine.</i> 2012;95(11):37-39.	Partially	Authors have authority, relevant references included. Journal not peer-reviewed	Yes	Clear aim that is fulfilled, no method supplied	Yes	Focus on United States of America health system	Yes	Author bias not explicitly stated, but standpoint is balanced	Yes	Context of article identifiable. Key contemporary references included	Yes	Recognises the importance of the triple aim in health care sustainability
McGorry PD, Hamilton MP. Stepwise expansion of evidence-based care is needed for mental	Yes	Authors have authority, relevant references included. Published in peer-reviewed journal	Yes	Brief well defined and adhered to. No methodology present	Yes	focus on Australia and the mental health sector	Yes	Author bias not explicitly stated, but standpoint is balanced	Yes	Context of article identifiable. Key contemporary references included	Yes	Recognises the challenges in the system of

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2021-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

health reform. <i>The Medical journal of Australia.</i> 2016;204(9):351-353.												
McIntosh E, Nagelkerk J, Vonderheid SC, Poole M, Dontje K, Pohl JM. Financially viable nurse-managed centers. <i>Nurse Pract.</i> 2003;28(3):40, 46-48, 51.	Yes	Authors have authority, relevant references included. Published in peer-reviewed journal	Yes	Aim not clear, but brief clear and examples used to explain argument. Peer reviewed	Yes	Focus on the role of finance committees in nurse managed centres in the United States of America	Yes	Author bias not explicitly stated, but standpoint is balanced	Yes	Context of article identifiable. Key contemporary references included	Yes	Important article on nurse managed centres and how they function
Nagle LM, Pitts BM. Citizen perspectives on the future of healthcare.	Partially	Authors have authority, relevant references included. Journal	Yes	Brief clearly stated and met. No methods provided	Yes	Focus on health system in Ontario, Canada	Yes	Author bias not explicitly stated, but standpoint is balanced	Yes	Date is explicit (comments on the panel met from April-June)	Yes	Summarises the recommendations for sustainability from the unique

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2024-009207 on April 20, 2024. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

<i>Healthcare Quarterly.</i> 2012;15(2): 40-45.		not peer-reviewed								2011 Contemporary references also included		panel of Ontarians
Pacifico Silva H, Lehoux P, Miller FA, Denis JL. Introducing responsible innovation in health: a policy-oriented framework. <i>Health Research Policy & Systems.</i> 2018;16(1): 90.	Yes	Authors have authority, relevant references included. Published in peer-reviewed journal	Yes	Research aim identified and met. No method provided	Yes	Worldwide, with examples from the United States and European Union	Yes	Author bias not explicitly stated, but bias of technologies being discussed is explicitly stated	Yes	Context related to responsible research and innovation in health, and thus is centred on when the research on this topic increased	Yes	Contributes a responsible innovations in health framework, with nine dimensions organised into five domains
Pencheon D. Developing a sustainable health and care system: lessons for	Yes	Authors have authority, relevant references included. Published in peer-	Yes	Brief clear and met, no method provided	Yes	England NHS context	Yes	Author bias not explicitly stated, but standpoint is balanced	Yes	Context identified as the five years previous to publication in 2013 (where	Yes	Important article highlighting ways in which the health system can be sustained

1136/bmjopen-2024-009207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

research and policy. <i>Journal of Health Services & Research Policy</i> . 2013;18(4): 193-194.		reviewed journal								future proofing the health care system (as attempted)		
Pronovost, P. J., C. G. Holzmueller, T. Callender, R. Demski, L. Winner, R. Day, J. M. Austin, S. M. Berenholtz, and M. R. Miller. 2016. Sustaining Reliability on Accountability Measures at The Johns Hopkins Hospital. It	Yes	Authors have authority, relevant references included. Published in peer-reviewed journal	Yes	Aim not explicit, but article brief is provided. Methodology provided and adhered to	Yes	Specific and well defined: Johns Hopkins Hospital in 2012-2014	Yes	Authors clear that they conducted previous research in measuring results of sustainability improvement measures (2012) and the author's efforts to sustain them	Yes	Clear date acknowledged from 2012 (initial results) to 2013	Yes	Suggests quality could improve through applying the framework used at Johns Hopkins Hospital (JHH)

1136/bmjopen-2021-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 28, 2024 by guest. Protected by copyright.

Comm J Qual Patient Saf 42 (2):51-60.												
Robertson TM, Lofgren RP. Where population health misses the mark: breaking the 80/20 rule. <i>Academic Medicine.</i> 2015;90(3):277-278.	Yes	Authors have authority, relevant references included. Published in peer-reviewed journal	Yes	No aim, but brief clearly stated. Relevant references included. Published in peer reviewed journal.	Yes	United States health context	Yes	Bias not explicitly stated but states the aim to reduce health care spending through analysis of medical insurance claim records	Yes	Context of article identifiable. Key contemporary references included	Yes	Adds to the argument of the importance of identifying health spending and working on reducing it where possible
Rosenberg-Yunger ZR, Daar AS, Singer PA, Martin DK. Healthcare sustainability and the challenges of innovation to	Yes	Authors have authority, relevant references included. Published in peer-reviewed journal	Yes	Clear brief comprising three parts to review government response to biopharmaceuticals and health system	Yes	Focus on Canada health system	Yes	Author bias not explicitly stated, but standpoint is balanced	Yes	Context of article identifiable. Key contemporary references included	Yes	Contributes recommendations for the field regarding access to biopharmaceuticals

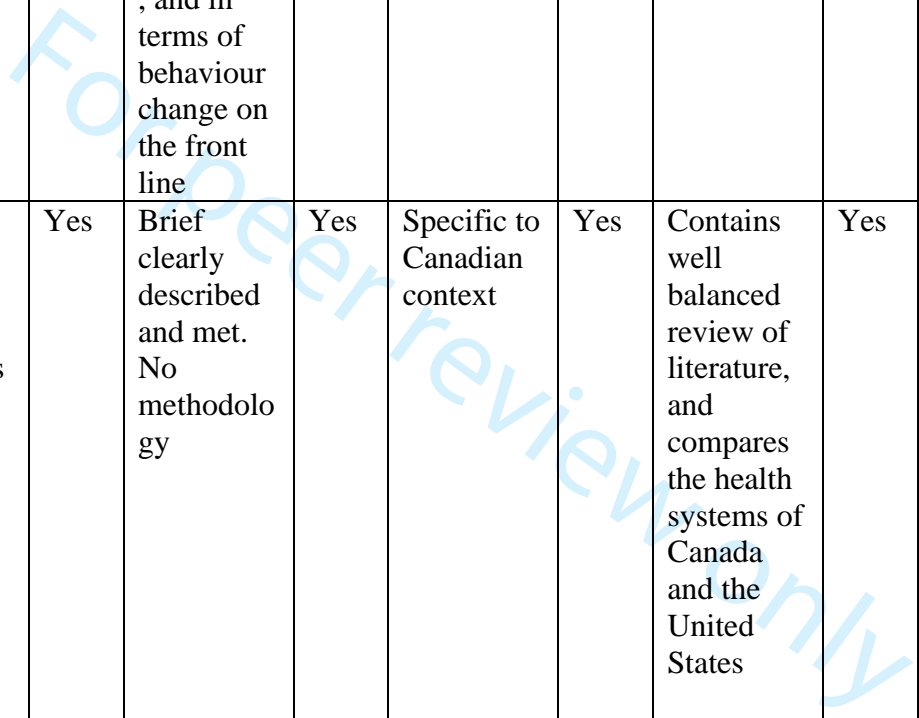
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2021-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on 20 April 2024 by guest. Protected by copyright.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	biopharmaceuticals in Canada. <i>Health policy (Amsterdams), Netherlands</i> . 2008;87(3):359-368.				sustainability								
16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32	Rosser, M. 2006. Advancing health system integration through supply chain improvement. <i>Healthc Q</i> 9 (1):62-66, 64.	Partially	Authors have authority, but no references included	Yes	Research aim identified and met	Yes	Focus on Canadian health system	Yes	Clear from the article even though bias is not specifically mentioned that the stance of the article is that HMMS are beneficial	Yes	Context of article covered from 1997 (inception of HMMS) and 2006 (article publication). No references included	Yes	Significance evident in the "lessons learned" section
33 34 35 36 37 38 39 40 41 42 43 44 45 46 47	Scott IA. Is modern medicine at risk of losing the plot? <i>The Medical</i>	Yes	Authors have authority, journal is peer-reviewed	Yes	Examines if pledges by Australian Government for improvement	Yes	Specific to Australian population health care spending, and the private	Yes	Clear opinion but well balanced argument	Yes	Context of article identifiable. Key contemporary	Yes	Relevant, adds context to Australian health. Encourages different

1136/bmjopen-2025-009207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

<i>journal of Australia.</i> 2006;185(4):213-216.				ents to health care are sustainable financially, and in terms of behaviour change on the front line		health insurance system of Australia				references included		aspects of the health system to work together
Sepehri A, Chernomas R. Is the Canadian health care system fiscally sustainable? <i>International Journal of Health Services.</i> 2004;34(2):229-243.	Yes	Authors have authority, relevant references included. Published in peer-reviewed journal	Yes	Brief clearly described and met. No methodology	Yes	Specific to Canadian context	Yes	Contains well balanced review of literature, and compares the health systems of Canada and the United States	Yes	Context of article identifiable. Key contemporary references included	Yes	Argued for the best way to increase the sustainability and economic viability of the national Canadian health system
Shigayeva A, Coker RJ. Communicable disease	Yes	Authors have authority, relevant references included.	Yes	Aim clearly stated and met. No methodology	Yes	Worldwide context, but focus on disease control programs	Yes	Author bias not explicitly stated, but standpoint	Yes	Context of article identifiable. Key contemporary	Yes	Important article that proposes characteristics and a framework



1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2025-009207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

<p>control programmes and health systems: an analytical approach to sustainability. <i>Health policy and planning</i>. 2015;30(3):368-385.</p>		<p>Published in peer-reviewed journal</p>						<p>is balanced</p>		<p>references included</p>		<p>that may have the potential for sustainability</p>
<p>Sonnenreich P, Geisler L. Covering the Cost of the Cure: From Hepatitis C to Cancer, New Therapies Are Straining a System Plagued by Inefficiency. <i>P T</i>. 2016;41(9):565-589.</p>	<p>Yes</p>	<p>Authors have authority, relevant references included. Published in peer-reviewed journal</p>	<p>Yes</p>	<p>Aim not clear, but brief clear and examples used to explain argument. Peer reviewed</p>	<p>Yes</p>	<p>Focus on United States of America health system</p>	<p>Yes</p>	<p>Author bias not explicitly stated, but standpoint is balanced with research from other researchers and articles</p>	<p>Yes</p>	<p>Context of article identifiable. Key contemporary references included</p>	<p>Yes</p>	<p>Examines the evolving notions of value in healthcare, cost vs cure,</p>

1136/bmjopen-2020-027177 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2022 by guest. Protected by copyright.

<p>Stoelwinder JU, Paolucci F. Sustaining Medicare through consumer choice of health funds: lessons from the Netherlands. <i>Medical Journal of Australia</i>. 2009;191(1):30-32.</p>	<p>Yes</p>	<p>Authors have authority, relevant references included. Published in peer-reviewed journal</p>	<p>Yes</p>	<p>Brief clear and met, peer reviewed</p>	<p>Yes</p>	<p>Focus on how Australia can learn from the Netherlands health system</p>	<p>Yes</p>	<p>Author bias not explicitly stated, but standpoint is balanced. Authors are affiliated with Australian institutions</p>	<p>Yes</p>	<p>Context of article identifiable as contemporary (comment on 2008 funding agreement in Australia, but Netherlands health policies since 1941. Published in 2009). Key contemporary references included</p>	<p>Yes</p>	<p>Extracts the application to Australia of the Netherlands policies.</p>
<p>Stoelwinder JU. Final report of the National Health and Hospitals Reform</p>	<p>Yes</p>	<p>Authors have authority, relevant references included. Published in peer-</p>	<p>Yes</p>	<p>Brief clear and met, no method provided</p>	<p>Yes</p>	<p>Specific to Australian health system</p>	<p>Yes</p>	<p>Author bias not explicitly stated, but standpoint is balanced. Also of</p>	<p>Yes</p>	<p>Context of article identifiable and there is explicit reference to the actions of</p>	<p>Yes</p>	<p>Timely article suggesting changes to Australian health system</p>

1136/bmjopen-2021-019927, 2021, 2024 by guest. Protected by copyright.

<p>Commission: will we get the health care governance reform we need? <i>The Medical Journal of Australia</i>. 2009;191(7):387-388.</p>		<p>reviewed journal</p>						<p>note, author declares conflict of interest as they are a board member of Medibank Private</p>		<p>the National Health and Hospitals Reform Commission and federal government response. Key contemporary references included</p>		
<p>Stuart N, Adams J. 2007. The sustainability of Canada's healthcare system: a framework for advancing the debate. <i>Healthcare Quarterly</i> 10: 96–103.</p>	<p>Partially</p>	<p>Authors have authority, relevant references included. Journal not peer-reviewed</p>	<p>Yes</p>	<p>Brief clear and met, no method provided, peer-reviewed</p>	<p>Yes</p>	<p>Focus on Canadian health care</p>	<p>Yes</p>	<p>Author bias not explicitly stated, but standpoint is balanced and bias within the healthcare system is identified and discussed</p>	<p>Yes</p>	<p>Context of article identifiable. Key contemporary references included</p>	<p>Yes</p>	<p>Examines the importance of improving the sustainability of the Canadian health system</p>

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2023-019277 first published May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 28, 2024 by guest. Protected by copyright.

Taylor M. Australian health care reform: a place for nurse practitioners? Aust Nurs J. 2007;15(6):20-23.	Partially	Author information not available, journal not peer-reviewed. However, relevant and peer-reviewed references are included	Yes	Clear brief to discuss role of NPs in Australia and how the role can be sustainable	Yes	Focus on the role of nurse practitioners in Australia	Yes	Author bias not explicitly stated, but standpoint is justified by numerous government reports	Yes	Context of article identifiable as after the 2010 Patient Protection and Affordable Care Act. Key contemporary references included	Yes	Recognises and emphasises the emerging role of the nurse practitioner, and how it can be sustained
Thompson RE. Sustainability as the lynch pin of public policy and industry initiatives. <i>Physician executive</i> . 1998;24(4):52-55.	Partially	Authors are associated with reputable organisations in their field. However, journal is not peer-reviewed	Partially	No clearly stated brief, starts with USA health political history and then to discuss managed care	Yes	American population health	Partially	Authors standpoint is clear in their argument. However, it is not particularly balanced in presentation.	Partially	Context of article identifiable. Majority of references are not contemporary	Yes	Promotes discussion regarding healthcare in the USA, and if and how managed care can be sustainable
Tsisis P. Chronic disease management and the	Yes	Authors have authority, relevant references	Yes	Brief clear and met, no method provided	Yes	Focus on health system in Ontario, Canada	Yes	Author bias not explicitly stated, but standpoint	Yes	Context of article identifiable. Key contemporary	Yes	Important article, justified in terms of health of

1136/bmjopen-2021-029277 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 29, 2024 by guest. Protected by copyright.

home-care alternative in Ontario, Canada. Health Serv Manage Res. 2009;22(3):136-139.		included. Published in peer-reviewed journal						is balanced		ary references included		Canadians , and financial improvement
Van de Pas R, Hill PS, Hammonds R, et al. Global health governance in the sustainable development goals: Is it grounded in the right to health? <i>Global challenges (Hoboken, NJ)</i> . 2017;1(1):47-60.	Yes	Authors have authority, relevant references included. Published in peer-reviewed journal	Yes	Clear brief regarding analysis of the roots of the sustainable development goals in the right to health	Yes	Worldwide, focusing on the sustainable development goals	Yes	Author bias not explicitly stated, but standpoint is balanced and urban bias is discussed	Yes	Context of article identifiable as post-2015 sustainable development goals. Key contemporary references included	Yes	Unique argument, questions if the sustainable development goals satisfy the right to health, and concludes that they do not
Veillard J, Denny K. Transforma	Yes	Authors have authority,	Yes	Clear brief in observatio	Yes	Focus on Canadian health	Yes	Author bias not explicitly	Yes	Context of article identifiable	Yes	Argues five points regarding

1136/bmjopen-2023-015927 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> April 20, 2024 by guest. Protected by copyright.

<p>tion through Clinical and Social Integration: Meeting the Needs of High Users of Healthcare. <i>Healthcare Papers</i>. 2014;14(2):4-7.</p>		<p>relevant references included. Published in peer-reviewed journal</p>		<p>ns regarding the use of the health system by a minority of the population</p>		<p>system, especially Ontario, but message is applicable worldwide</p>		<p>stated, but standpoint is well balanced with arguments on many perspectives discussed</p>		<p>e. Key contemporary references included</p>		<p>Ontario's health system and the potential for improvement</p>
<p>Wakerman J, Humphreys JS. Sustainable workforce and sustainable health systems for rural and remote Australia. <i>The Medical journal of Australia</i>. 2013;199(5</p>	<p>Yes</p>	<p>Authors have authority, relevant references included. Published in peer-reviewed journal</p>	<p>Yes</p>	<p>Brief clear and met, no method provided</p>	<p>Yes</p>	<p>Specific to rural and remote Australia</p>	<p>Yes</p>	<p>Author bias not explicitly stated, but standpoint is balanced</p>	<p>Yes</p>	<p>Context of article identifiable. Key contemporary references included</p>	<p>Yes</p>	<p>Recognise s interdependence of the health system of urban and rural areas</p>

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2021-059620 on 27 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

Suppl):S14-17.												
Woodward, G. L., A. Iverson, R. Harvey, and P. G. Blake. 2015. Implementation of an agency to improve chronic kidney disease care in Ontario: lessons learned by the Ontario Renal Network. Healthc Q 17 Spec No:44-47.	Yes	Authors have authority, relevant references included. Published in peer-reviewed journal	Yes	The aim is adhered to, but there is no relevant methodology.	Yes	Limits of article known (to identify lessons learnt from the CKD agency to improve care)	Yes	Argument that the CKD system has been effective and sustainable	Yes	Context of article identifiable. Key contemporary references included	Yes	Identifies methods used for improving CKD care and their success
Pisco L, Pinto LF. From Alma-Ata to Astana: the path of	Yes	all authors from reputable institutions		peer reviewed, but no aim or methodology	Yes	Portugal only	Yes		Yes	recent references included	Yes	

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

Primary Health Care in Portugal, 1978-2018 and the genesis of Family Medicine. <i>Ciencia & saude coletiva</i> . 2020												
Ganann R, Peacock S, Garnett A, et al. Capacity development among academic trainees in community-based primary health care research: The Aging, Communi	Yes	all authors from reputable institutions	Yes	clear aim and adhered to	Yes	context clearly stated and clear limits	Yes	bias not explicitly stated	Yes	recent references included	Yes	

For peer review only

<p>ty and Health Research Unit Experience. Prim Health Care Res Dev. 2019;20:e139.</p>												
<p>Jessup RL, O'Connor DA, Putrik P, et al. Alternative service models for delivery of healthcare services in high-income countries: a scoping review of systematic reviews. BMJ</p>	<p>Yes</p>		<p>Yes</p>		<p>Yes</p>		<p>Yes</p>		<p>Yes</p>		<p>Yes</p>	

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

open. 2019;9(1): e024385.												
Vainieri M, Noto G, Ferre F, Rosella LC. A Performance Management System in Healthcare for All Seasons? International Journal of Environmental Research & Public Health [Electronic Resource] . 2020;17(15):03	Yes	all authors from reputable institutions	Yes		Yes	Explicitly mentions bias	Yes		Yes	recent references included	Yes	
Braithwaite J, Mannion	Yes	all authors from reputable	Yes	relevant references	Yes	includes informatio	Yes		Yes	recent references included	Yes	adds meaningfully and

For peer review only

<p>R, Matsuyama Y, et al. The future of health systems to 2030: a roadmap for global progress and sustainability. International journal for quality in health care: journal of the International Society for Quality in Health Care. 2018;30(10):823-831.</p>		<p>institutions and published extensively in field</p>				<p>n on 152 countries</p>										<p>enriches current literature</p>
---	--	--	--	--	--	---------------------------	--	--	--	--	--	--	--	--	--	------------------------------------

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

Buttigieg SC. Innovation Strategies and Health System Guiding Principles to Address Equity and Sustainability in Responsible Innovation in Health Comment on "What Health System Challenges Should Responsible Innovation in Health Address? Insights	Yes	all authors from reputable institutions	Yes		Yes		Yes	notes need to address contextual differences	Yes	recent references included	Yes	
---	-----	---	-----	--	-----	--	-----	--	-----	----------------------------	-----	--

For peer review only

1136/bmjopen-2021-059207 on 24 May 2022
Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

<p>From an International Scoping Review". Int. 2019;8(9): 570-572</p>												
<p>Byskov J, Maluka S, Marchal B, et al. A systems perspective on the importance of global health strategy developments for accomplishing today's Sustainable Development Goals. Health policy and planning.</p>	<p>Yes</p>	<p>all authors from reputable institutions worldwide</p>	<p>Yes</p>	<p>aim clearly stated and met</p>	<p>Yes</p>	<p>coverage based on aim being met</p>	<p>Yes</p>	<p>balanced standpoint</p>	<p>Yes</p>	<p>relevant contemporary references included</p>	<p>Yes</p>	<p>brings suggested ways forward to achieve the SDGs</p>

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

2019;34(9):635-645.												
O'Brien N, Li R, Isaranuwatchai W, et al. How can we make better health decisions a Best Buy for all?: Commentary based on discussions at iDSI roundtable on 2 (nd) May 2019 London, UK. Gates open research. 2019;3:15-43.	Yes	all authors from reputable colleges, peer reviewed article	Yes	peer reviewed, authoritative references	Yes	covers health technology assessment (HTA)	Yes	bias not explicitly stated but balanced standpoint with WHO and country and local evidence	Yes	contemporary references included	Yes	adds to the literature
Hanney S, Kanya L, Pokhrel S,	Yes	WHO authority, as well as	Yes	authoritative, clear aim met	Yes	scoping review parameters	Yes	bias not explicitly stated but	Yes	Contemporary	Yes	Has considerations for

1136/bmjopen-2022-009207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

<p>Jones T, Boaz A. WHO Health Evidence Network Synthesis Reports. What is the evidence on policies, interventions and tools for establishing and/or strengthening national health research systems and their effectiveness? Copenhagen: WHO Regional Office for Europe © World Health</p>		<p>individual authors</p>				<p>well defined</p>			<p>balanced standpoint with WHO and country and local evidence</p>			<p>references included</p>				<p>policy analysis in many countries</p>
--	--	---------------------------	--	--	--	---------------------	--	--	--	--	--	----------------------------	--	--	--	--

For peer review only

1136/bmjopen-2021-059207
0124 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

Organizational 2020.; 2020												
Braithwaite J, Vincent C, Nicklin W, Amalberti R. Coping with more people with more illness. Part 2: new generation of standards for enabling healthcare system transformation and sustainability. International Journal for Quality in Health	Yes	well published authors in the field	Yes	authoritative references in the field, aim strategy met	Yes	global, but strategy for ISQua well defined	Yes	balanced standpoint, evidence from sources from around the world	Yes	context well defined, contemporary references used	Yes	important paper adding to literature

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2021-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

Care. 2019;31(2):159-163												
Braithwaite J, Zurynski Y, Ludlow K, Holt J, Augustsson H, Campbell M. Towards sustainable healthcare system performance in the 21st century in high-income countries: a protocol for a systematic review of the grey literature. BMJ open.	Yes	well published authors in the field	Yes	authoritative references	Yes	global but well defined protocol	Yes	balanced standpoint, bias explicitly addressed	Yes	date used well defined, contemporary references used	Yes	significant and important for the field

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

2019;9(1): e025892												
Martiniuk AL, Colbran R, Ramsden R, et al. Capability ... what's in a word? Rural Doctors Network of New South Wales Australia is shifting to focus on the capability of rural health professionals. Rural and remote health. 2020;20(3):5633	Yes	authoritative authors	Yes	authoritative references	Yes	coverage well defined	Yes	balanced standpoint	Yes	contemporary references included	Yes	important and adds to the field
Rudnicka E,	Yes	peer reviewed	Yes	Peer-reviewed	Yes	aimed to coverage	Yes	Authors standpoint	Yes		Yes	

For peer review only

1136/bmjopen-2021-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2022 by guest. Protected by copyright.

<p>Napierała P, Podfigurna A, Męczałski B, Smolarczyk R, Grymowicz M. The World Health Organization (WHO) approach to healthy ageing. <i>Maturitas</i>. 2020;139:6-11.</p>		journal article				global perspective and achieved it		is clear, relatively balance presentation				
<p>Walsh K. Strengthening primary care: the role of e-learning. <i>Educ</i>. 2019;30(5):267-269.</p>	Yes	Author has a strong publication record in peer reviewed journals	Yes	peer reviewed	Yes		Yes	no bias stated but is a balanced commentary	Yes	contemporary references included, date discernible by subject matter	Yes	
<p>De Santis M.</p>	Yes	Authors both	Yes	peer reviewed	Yes	Looking at studies	Yes	No bias stated,	Yes	recent references	Yes	

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2022-019287 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

Integrated care for healthcare sustainability for patients living with rare diseases. Annali dell'Istituto superiore di sanita. 2019;55(3):276-282.		appear to have roles in prominent rare disease organisations in Europe				published between 2000 and 2018. Search terms provided, both grey lit and PR included		standpoint is clear		included, date discernible		
Ferrelli RM, Fantini B, Taruscio D. Health systems sustainability for rare diseases. Preface. Annali dell'Istituto superiore di sanita.	Yes	Authors either work for rare diseases network in Europe or in the ministry of health in Italy	Yes	Book chapter-editors are all from reputable organisations	Yes	Europe specific with focus on rare diseases	Yes	No bias stated, standpoint is clear	Yes	Contemporary references, the context is very clear	Yes	

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2021-059207 on 20 May 2024. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

2019;55(3):249-250.												
Steenhuis S, Struijs J, Koolman X, Ket J, E VDH. Unraveling the Complexity in the Design and Implementation of Bundled Payments: A Scoping Review of Key Elements From a Payer's Perspective. Milbank Quarterly. 2020;98(1):197-222.	Yes	Authors have peer reviewed publication history	Yes	Aim stated, clear methodology	Yes	Limits stated in the methodology- review related to payment methods, relevant to OECD countries	Yes	Authors address risk of bias, there is a balanced standpoint presented	Yes	Contemporary references included, date discernible throughout the text	Yes	
Nikolić B. Applicability of	Yes	contemporary references,	Yes	aim clearly	Yes	clear coverage within EU	Yes	authors opinion is balanced	Yes	content clear contemporary	Yes	important article that helps

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2021-022477 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on 24 May 2022. Protected by copyright.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

European Union Competition Law to Health Care Providers: The Dividing Line between Economic and Noneconomic Activities. Journal of health politics, policy and law. 2020.		author from reputable source		stated and met				by contemporary references and different standpoints		ary references present		make the legal uncertainty clear
Niraula S. Strategizing health technology assessment for containment of cancer drug costs in a	Yes	authoritative author, detailed reference list	Yes	clearly stated brief, peer reviewed article	Yes	coverage specific to Canadian oncology drug review	Yes	balanced standpoint	Yes	universal health care system in Canada since 1968 and has been deduced with contemporary references	Yes	adds context, important yet specific article

For peer review only

1136/bmjopen-2021-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

<p>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18</p> <p>universal health care system: Case of the pan-Canadian Oncology Drug Review. Cancer. 2019;125(18):3100-3103.</p>												
<p>19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40</p> <p>Wurcel V, Cicchetti A, Garrison L, et al. The Value of Diagnostic Information in Personalised Healthcare: A Comprehensive Concept to</p>	<p>Yes</p>	<p>authors experts in the field</p>	<p>Yes</p>	<p>peer-reviewed article, clear aim and methodology</p>	<p>Yes</p>	<p>coverage specific to the VODI published articles</p>	<p>Yes</p>	<p>balanced standpoint with examples and references</p>	<p>Yes</p>	<p>contemporary references included,</p>	<p>Yes</p>	<p>important addition regarding value of diagnostic information (VODI)</p>

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

Facilitate Bringing This Technology into Healthcare Systems. Public Health Genomics . 2019;22(1-2):8-15.												
Cunningham FC, Ranmuthugala G, Westbrook JJ, Braithwaite J. Tackling the wicked problem of health networks: the design of an evaluation framework. BMJ	Yes	authors authoritative in field, detailed reference list	Yes	clearly stated aim and methods adhered to. Work is representative of the field	Yes	evaluations of systematic reviews to date	Yes	balanced standpoint	Yes	date discernable, contemporary references present	Yes	meaningful contribution to literature

For peer review only

1136/bmjopen-2021-059207
 Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

open. 2019;9(5): e024231.												
Embi PJ, Richesson R, Tenenbaum J, et al. Reimagining the research-practice relationship: policy recommendations for informatics-enabled evidence-generation across the US health system. JAMIA open. 2019;2(1): 2-9.	Yes	authoritative authors from well-respected institutions	Yes	clear aim highlighted and met	Yes	specific to covering what was discussed and the findings from the 2016 AMIA meeting	Yes	balanced standpoint with contributions from over 70 participants at meeting	Yes	discernable from references as well as timing of meeting reported on	Yes	synthesised findings from meeting and adds to literature
Park YL, Canaway R. Integrating	Yes	authoritative authors	Yes	peer reviewed journal	Yes	limits clearly stated with Western	Yes	bias not explicitly stated, but expert balanced	Yes	date discernable, contemporary	Yes	interesting and unique article,

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2022-019207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 29, 2024 by guest. Protected by copyright.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

<p>Traditiona l and Complem entary Medicine with National Healthcar e Systems for Universal Health Coverage in Asia and the Western Pacific. Health syst. 2019;5(1): 24-31.</p>						<p>Pacific region</p>		<p>standpoint drawing on experience s from many countries</p>		<p>references present</p>		<p>adds to the literature</p>
<p>Quaglio G, Figueras J, Mantoan D, et al. An overview of future EU health systems. An insight</p>	<p>Yes</p>	<p>Authors have all previously published extensivel y in this field</p>	<p>Yes</p>	<p>Published in peer reviewed journal. Aim isn't explicitly presented, but article is referencin g/ reporting</p>	<p>Yes</p>	<p>EU specific context</p>	<p>Yes</p>	<p>Author bias isn't stated, but discussion presents clear standpoint and is balanced</p>	<p>Yes</p>	<p>Reference s workshop in 2017 that inspired the publicatio n, references recent literature</p>	<p>Yes</p>	<p>Contribute s meaningfu lly to discussion of HSS in the EU</p>

1136/bmjopen-2021-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

<p>into governance, primary care, data collection and citizens' participation. Journal of public health (Oxford, England)</p>				<p>on workshop held in parliament</p>								
<p>Lehoux P, Roncarolo F, Silva HP, Boivin A, Denis JL, Hebert R. What Health Systems Challenges Should Responsible Innovation in Health Address? Insights</p>	<p>Yes</p>	<p>Authors have strong publication record in PR journals</p>	<p>Yes</p>	<p>aim stated, methods clearly stated, published in PR journal aim stated, methods clearly stated, published in PR journal</p>	<p>Yes</p>	<p>international scoping review with well defined parameters and search strategy</p>	<p>Yes</p>	<p>Bias isn't stated but limitations of review are, and standpoint is balanced</p>	<p>Yes</p>	<p>Articles included for review span 2000-2016</p>	<p>Yes</p>	<p>Very detailed scoping review, identifies a number of challenges facing global health systems</p>

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2021-059207 on 24 May 2022
Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

From an International Scoping Review. Int. 2019;8(2): 63-75.												
Editorial. Healthcare quarterly (Toronto, Ont.). 2020;22(4)		Authors not stated- editors of Healthcare Quarterly- a		Commentary- no aim or methods	Yes	Canada specific	Yes	Standpoint clear	Yes	Context is identifiable because of contemporary references		
Abimbola S, Baatiema L, Bigdeli M. The impacts of decentralization on health system equity, efficiency and resilience: a realist synthesis	Yes	Authors from reputable institutions with good publication records in peer reviewed journals	Yes	clear methodology/ search strategy. In peer reviewed journal. No aim explicitly stated	Yes	wide coverage- looking at low/middle and high income countries	Yes	Author bias not stated, but balanced standpoint	Yes	context of article identified	Yes	identified three mechanisms by which decentralization may influence equity, efficiency, and resilience in 25 countries (low

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2021-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

of the evidence. Health Policy & Planning. 2019;34(8):605-617												middle and high income)
Craig N, Robinson M. Towards a preventative approach to improving health and reducing health inequalities: a view from Scotland. Public health. 2019;169:195-200.	Yes	Both authors affiliated with the NHS	Yes	no aims or method stated but is peer reviewed and well referenced	Yes	Scotland specific	Yes	Author bias not stated but viewpoint is clear	Yes	Context easy to discern based on references and analysis of trends in previous 10-15 years	Yes	Useful in Scottish context
Costa-Font J, Levaggi R. Innovation, aging,	Yes	Both authors have strong publication history	Yes	Peer reviewed, no aim or method stated	Yes	special issue presents papers presented	Yes	There isn't a bias stated	Yes	discernable from references	Yes	

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

<p>and health care: Unraveling "silver" from "red" herrings? Health Econ. 2020;29 Suppl 1:3-7.</p>		<p>and are associated with reputable institutions. Published in peer reviewed journal</p>				<p>at a workshop</p>						
<p>Derakhshani N, Doshman gir L, Ahmadi A, Fakhri A, Sadeghi-Bazargani H, Gordeev VS. Monitoring Process Barriers and Enablers Towards Universal Health Coverage</p>	<p>Yes</p>	<p>Authors have strong publication history</p>	<p>Yes</p>	<p>detailed methods and search strategy</p>	<p>Yes</p>	<p>parameters defined in search strategy</p>	<p>Yes</p>	<p>bias not stated, viewpoint clear</p>	<p>Yes</p>	<p>content is discernable</p>	<p>Yes</p>	

<p>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24</p> <p>Within the Sustainable Development Goals: A Systematic Review and Content Analysis. ClinicoEconomics and outcomes research : CEOR. 2020;12:459-472</p>												
<p>25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47</p> <p>Clancy C. Creating World-Class Care and Service for Our Nation's Finest: How Veterans Health Administration</p>		<p>Author affiliated with VA, no publication record</p>	<p>Yes</p>	<p>in peer reviewed journal</p>	<p>Yes</p>	<p>restricted to VA</p>			<p>Yes</p>	<p>date and content discernable from text</p>		

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

Diffusion of Excellence Initiative Is Innovating and Transforming Veterans Affairs Health Care. Perm. 2019;23												
Marcotte LM, Moriates C, Wolfson DB, Frankel RM. Professionalism as the Bedrock of High-Value Care. Academic Medicine.	Yes	authors have strong publication record	Yes	peer reviewed	Yes	No limits stated, but is restricted to looking at healthcare professionals (in US context)	Yes	bias not explicitly stated, but standpoint is balanced	Yes	date/context discernable from text	Yes	

For peer review only

1136/bmjopen-2021-059287 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

2020;95(6):864-867.												
Witter S, Palmer N, Balabano va D, et al. Health system strengthening- Reflection s on its meaning, assessmen t, and our state of knowledg e. Internatio nal Journal of Health Planning & Managem ent. 2019;34(4):e1980-e1989	Yes	authors have strong publication record	Yes	peer reviewed, but there is no aims or methods	Yes	Looked at studies published between 2000 and 2018 focussed on interventio ns in LMIC	Yes	acknowled gement of biases and limitations; well balanced standpoint	Yes	conten t discerne d from references	Yes	contributes to the literature
Sturmberg JP. Resilience for health-	Yes	author has publication record in this field	Yes	peer reviewed, but there is no aims or methods		limits not stated		no bias stated		no discerne d date	Yes	contributes to conversatio n around health

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

<p>an emergent property of the "health systems as a whole". Journal of evaluation in clinical practice. 2018;24(6):1323-1329.</p>												<p>system resilience</p>
<p>Thistlethwaite JE, Dunston R, Yassine T. The times are changing: workforce planning, new health-care models and the need for interprofessional education</p>	<p>Yes</p>	<p>authors from reputable institutions</p>	<p>Yes</p>	<p>peer reviewed</p>	<p>Yes</p>	<p>Specific to Australia/ the Australian health system</p>	<p>Yes</p>	<p>bias not explicitly stated, but standpoint is balanced</p>	<p>Yes</p>	<p>references contemporary reports about Australian health system. Content is discernable</p>	<p>Yes</p>	

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2021-059207 on 24 May 2022
Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

<p>in Australia. Journal of interprofe ssional care. 2019;33(4):361-368.</p>												
<p>Iskrov G, Stefanov R, Ferrelli RM. Health systems for rare diseases: financial sustainabi lity. Annali dell'Istitut o superiore di sanita. 2019;55(3):270-275</p>	<p>Yes</p>	<p>authors have strong publication record</p>	<p>Yes</p>	<p>No clear aim stated, but there is clear methodolog y and paper has been peer reviewed</p>	<p>Yes</p>	<p>covers health systems in EU member states</p>	<p>Yes</p>	<p>balanced standpoint</p>	<p>Yes</p>	<p>references contempora ry reports about health systems in the EU- context is very clear</p>	<p>Yes</p>	<p>contributes to the literature</p>

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) Checklist

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
TITLE			
Title	1	Identify the report as a scoping review.	4
ABSTRACT			
Structured summary	2	Provide a structured summary that includes (as applicable): background, objectives, eligibility criteria, sources of evidence, charting methods, results, and conclusions that relate to the review questions and objectives.	4-5
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known. Explain why the review questions/objectives lend themselves to a scoping review approach.	6-7
Objectives	4	Provide an explicit statement of the questions and objectives being addressed with reference to their key elements (e.g., population or participants, concepts, and context) or other relevant key elements used to conceptualize the review questions and/or objectives.	8
METHODS			
Protocol and registration	5	Indicate whether a review protocol exists; state if and where it can be accessed (e.g., a Web address); and if available, provide registration information, including the registration number.	N/A
Eligibility criteria	6	Specify characteristics of the sources of evidence used as eligibility criteria (e.g., years considered, language, and publication status), and provide a rationale.	9-10, methods paragraph 2
Information sources*	7	Describe all information sources in the search (e.g., databases with dates of coverage and contact with authors to identify additional sources), as well as the date the most recent search was executed.	10, methods paragraph 3
Search	8	Present the full electronic search strategy for at least 1 database, including any limits used, such that it could be repeated.	11, methods paragraph 3 and table 2
Selection of sources of evidence†	9	State the process for selecting sources of evidence (i.e., screening and eligibility) included in the scoping review.	10-12
Data charting process‡	10	Describe the methods of charting data from the included sources of evidence (e.g., calibrated forms or forms that have been tested by the team before their use, and whether data charting was done independently or in duplicate) and any processes for obtaining and confirming data from investigators.	N/A
Data items	11	List and define all variables for which data were sought and any assumptions and simplifications made.	10, methods paragraph 5
Critical appraisal of individual	12	If done, provide a rationale for conducting a critical appraisal of included sources of evidence; describe	10



SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
sources of evidence§		the methods used and how this information was used in any data synthesis (if appropriate).	
Synthesis of results	13	Describe the methods of handling and summarizing the data that were charted.	11-13, synthesis of results and discussion section
RESULTS			
Selection of sources of evidence	14	Give numbers of sources of evidence screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally using a flow diagram.	12-13, results paragraph 3
Characteristics of sources of evidence	15	For each source of evidence, present characteristics for which data were charted and provide the citations.	12-13, results paragraph 3 and 4
Critical appraisal within sources of evidence	16	If done, present data on critical appraisal of included sources of evidence (see item 12).	13
Results of individual sources of evidence	17	For each included source of evidence, present the relevant data that were charted that relate to the review questions and objectives.	10-13, results paragraphs 1-4
Synthesis of results	18	Summarize and/or present the charting results as they relate to the review questions and objectives.	Pages 13-23
DISCUSSION			
Summary of evidence	19	Summarize the main results (including an overview of concepts, themes, and types of evidence available), link to the review questions and objectives, and consider the relevance to key groups.	24, paragraph 2
Limitations	20	Discuss the limitations of the scoping review process.	5, strengths and limitations paragraph
Conclusions	21	Provide a general interpretation of the results with respect to the review questions and objectives, as well as potential implications and/or next steps.	26, conclusion paragraph
FUNDING			
Funding	22	Describe sources of funding for the included sources of evidence, as well as sources of funding for the scoping review. Describe the role of the funders of the scoping review.	28

JBI = Joanna Briggs Institute; PRISMA-ScR = Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews.

* Where *sources of evidence* (see second footnote) are compiled from, such as bibliographic databases, social media platforms, and Web sites.

† A more inclusive/heterogeneous term used to account for the different types of evidence or data sources (e.g., quantitative and/or qualitative research, expert opinion, and policy documents) that may be eligible in a scoping review as opposed to only studies. This is not to be confused with *information sources* (see first footnote).

‡ The frameworks by Arksey and O'Malley (6) and Levac and colleagues (7) and the JBI guidance (4, 5) refer to the process of data extraction in a scoping review as data charting.

§ The process of systematically examining research evidence to assess its validity, results, and relevance before using it to inform a decision. This term is used for items 12 and 19 instead of "risk of bias" (which is more applicable to systematic reviews of interventions) to include and acknowledge the various sources of evidence that may be used in a scoping review (e.g., quantitative and/or qualitative research, expert opinion, and policy document).



From: Tricco AC, Lillie E, Zarin W, O'Brien KK, Colquhoun H, Levac D, et al. PRISMA Extension for Scoping Reviews (PRISMA ScR): Checklist and Explanation. *Ann Intern Med.* 2018;169:467–473. doi: [10.7326/M18-0850](https://doi.org/10.7326/M18-0850).

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60



St. Michael's

Inspired Care.
Inspiring Science.

For peer review only - <http://bmjopen.bmj.com/site/about/guidelines.xhtml>

**HOW CAN THE HEALTHCARE SYSTEM DELIVER SUSTAINABLE
PERFORMANCE?
A SCOPING REVIEW**

ADDITIONAL FILE 4: INCLUSION AND EXCLUSION CRITERIA

Table 1. Inclusion and exclusion criteria

Inclusion Criteria*	Exclusion Criteria
1. Definition(s) of healthcare systems performance sustainability.	1. Pertaining to sustainability relating to: <ol style="list-style-type: none"> a. Disaster management, pandemic or other emergency preparedness. b. Foreign aid or foreign investment. c. Workplace health and safety. d. Environmental sustainability.
2. Measurement of SPHS.	2. Of no relevance to the Australian context: <ol style="list-style-type: none"> a. Low-income countries. b. Healthcare systems in conflict zones. c. Specific to a country's political situation.
3. Discussion and identification of the challenges involved in SPHS.	3. Does not otherwise deal with sustainability of 'healthcare systems' (e.g., concerned with diagnosis or management of a single disease or improvements in a single healthcare setting).
4. Discussion or identification of ways in which to improve SPHS.	4. Focuses on broad population healthcare initiatives rather than healthcare delivery systems (e.g., vaccination programs).
5. Discussion of sustaining and scaling change in SPHS.	5. Does not otherwise address the objectives of this review
	6. High risk of bias or low quality.

*To be eligible for inclusion, articles needed to demonstrate one or more of the inclusion criteria.

BMJ Open

How can the Healthcare System Deliver Sustainable Performance? A Scoping Review

Journal:	<i>BMJ Open</i>
Manuscript ID	bmjopen-2021-059207.R1
Article Type:	Original research
Date Submitted by the Author:	31-Dec-2021
Complete List of Authors:	Zurynski, Yvonne; Macquarie University, Australian Institute of Health Innovation Herkes, Jessica; Macquarie University, Australian Institute of Health Innovation Holt, Joanna; Macquarie University, Australian Institute of Health Innovation McPherson, Elise; Macquarie University, Australian Institute of Health Innovation Lamprell, Gina; Macquarie University, Australian Institute of Health Innovation Dammery, Genevieve; Macquarie University, Australian Institute of Health Innovation Meulenbroeks, Isabelle; Macquarie University, Australian Institute of Health Innovation Halim, Nicole; Macquarie University, Australian Institute of Health Innovation Braithwaite, Jeffrey; Macquarie University, Australian Institute of Health Innovation
Primary Subject Heading:	Health services research
Secondary Subject Heading:	Health policy, Public health
Keywords:	PUBLIC HEALTH, Health policy < HEALTH SERVICES ADMINISTRATION & MANAGEMENT, HEALTH SERVICES ADMINISTRATION & MANAGEMENT

SCHOLARONE™
Manuscripts



I, the Submitting Author has the right to grant and does grant on behalf of all authors of the Work (as defined in the below author licence), an exclusive licence and/or a non-exclusive licence for contributions from authors who are: i) UK Crown employees; ii) where BMJ has agreed a CC-BY licence shall apply, and/or iii) in accordance with the terms applicable for US Federal Government officers or employees acting as part of their official duties; on a worldwide, perpetual, irrevocable, royalty-free basis to BMJ Publishing Group Ltd ("BMJ") its licensees and where the relevant Journal is co-owned by BMJ to the co-owners of the Journal, to publish the Work in this journal and any other BMJ products and to exploit all rights, as set out in our [licence](#).

The Submitting Author accepts and understands that any supply made under these terms is made by BMJ to the Submitting Author unless you are acting as an employee on behalf of your employer or a postgraduate student of an affiliated institution which is paying any applicable article publishing charge ("APC") for Open Access articles. Where the Submitting Author wishes to make the Work available on an Open Access basis (and intends to pay the relevant APC), the terms of reuse of such Open Access shall be governed by a Creative Commons licence – details of these licences and which [Creative Commons](#) licence will apply to this Work are set out in our licence referred to above.

Other than as permitted in any relevant BMJ Author's Self Archiving Policies, I confirm this Work has not been accepted for publication elsewhere, is not being considered for publication elsewhere and does not duplicate material already published. I confirm all authors consent to publication of this Work and authorise the granting of this licence.

1
2
3 HOW CAN THE HEALTHCARE SYSTEM DELIVER SUSTAINABLE PERFORMANCE? A
4
5 SCOPING REVIEW
6

7 Yvonne Zurynski, Jessica Herkes-Deane, Joanna Holt, Elise McPherson, Gina Lamprell,
8
9 Genevieve Dammary, Isabelle Meulenbroeks, Nicole K. Halim, Jeffrey Braithwaite
10
11
12
13

14 *Yvonne Zurynski and *Jessica Herkes-Deane are joint first authors
15

16
17 *Yvonne Zurynski, PhD, BAppSc, MAppSc, MHPol
18

19 Centre for Healthcare Resilience and Implementation Science and the NHMRC Partnership
20

21 Centre for Health System Sustainability, Australian Institute of Health Innovation
22

23 Macquarie University
24

25 Sydney, NSW, Australia
26
27
28
29
30
31
32

33 *Jessica Herkes-Deane BSc(Adv), MRes
34

35 Centre for Healthcare Resilience and Implementation Science and the NHMRC Partnership
36

37 Centre for Health System Sustainability, Australian Institute of Health Innovation
38

39 Macquarie University
40

41 Sydney, NSW, Australia
42
43
44
45
46

47 Joanna Holt BSc(Hons); MHP
48

49 Centre for Healthcare Resilience and Implementation Science and the NHMRC Partnership Centre
50

51 for Health System Sustainability, Australian Institute of Health Innovation
52

53 Macquarie University
54

55 Sydney, NSW, Australia
56
57
58
59
60

1
2
3
4
5 Elise McPherson BA, BSc(Hon), MRes
6

7 Centre for Healthcare Resilience and Implementation Science, Australian Institute of Health
8

9
10 Innovation,
11

12 Macquarie University
13

14 Sydney, NSW, Australia
15
16
17
18

19 Gina Lamprell BA(Hons)
20

21 Centre for Healthcare Resilience and Implementation Science, Australian Institute of Health
22

23 Innovation
24

25
26 Macquarie University
27

28 Sydney, NSW, Australia
29
30
31
32

33 Genevieve Dammery BSc(Hons)
34

35 NHMRC Partnership Centre for Health System Sustainability, Australian Institute of Health
36

37 Innovation
38

39 Macquarie University
40

41 Sydney, NSW, Australia
42
43
44
45
46

47 Isabelle Meulenbroeks B. Physio, MPH
48

49 NHMRC Partnership Centre for Health System Sustainability, Australian Institute of Health
50

51 Innovation
52

53 Macquarie University
54

55 Sydney, NSW, Australia
56
57
58
59
60

1
2
3
4
5 Nicole K. Halim BSc, MPH
6

7 Centre for Healthcare Resilience and Implementation Science and the NHMRC Partnership

8
9 Centre for Health System Sustainability, Australian Institute of Health Innovation

10
11 Macquarie University

12
13 Sydney, NSW, Australia
14
15
16
17
18

19 Jeffrey Braithwaite PhD, FIML, FCHSM, FFPHRCP, FAcSS, Hon FRACMA, FAHMS

20
21 Centre for Healthcare Resilience and Implementation Science and the NHMRC Partnership

22
23 Centre for Health System Sustainability, Australian Institute of Health Innovation

24
25 Macquarie University

26
27 Sydney, NSW, Australia
28
29
30
31
32

33 **Corresponding author:**

34
35 Jeffrey Braithwaite

36
37 Australian Institute of Health Innovation

38
39 Macquarie University

40
41 Level 6, 75 Talavera Road

42
43 North Ryde, NSW 2109,

44
45
46 Australia

47
48 jeffrey.braithwaite@mq.edu.au

49
50
51 Phone: + 61 2 9850 2401

52
53 Words Abstract: 300

54
55 Words Manuscript: 3865
56
57
58
59
60

HOW CAN THE HEALTHCARE SYSTEM DELIVER SUSTAINABLE PERFORMANCE? A SCOPING REVIEW

Abstract

Background: Increasing health costs, demand, and patient multimorbidity challenge the sustainability of healthcare systems. These challenges persist and have been amplified by the global pandemic.

Objectives: We aimed to develop an understanding of how the sustainable performance of healthcare systems (SPHS) has been conceptualised, defined, and measured.

Design: Scoping review of peer reviewed articles and editorials published from database inception to February 2021.

Data sources: PubMed and Ovid Medline, and snowballing techniques.

Eligibility criteria: We included articles that discussed key focus concepts of SPHS: 1) definitions, 2) measurement, 3) identified challenges, 4) identified solutions for improvement, and 5) scaling successful solutions to maintain SPHS.

Data extraction and synthesis: After title/abstract screening, full-text articles were reviewed, and relevant information extracted and synthesised under the five focus concepts.

Results: Of 142 included articles, 38 (27%) provided a definition of SPHS. Definitions were based mainly on financial sustainability, however, SPHS was also more broadly conceptualised and included acceptability to patients and workforce, resilience through adaptation, and rapid absorption of evidence and innovations. Measures of SPHS were also predominantly financial, but recent articles proposed composite measures that accounted for financial, social and health outcomes. Challenges to achieving SPHS included the increasingly complex patient populations, limited integration because of entrenched fragmented systems and siloed professional groups, and

1
2
3 the ongoing translational gaps in evidence-to-practice and policy-to-practice. Improvement
4 strategies for SPHS included developing appropriate workplace cultures, direct community and
5 consumer involvement, and adoption of evidence-based practice and technologies. There was
6
7 also a strong identified need for long term monitoring and evaluations to support adaptation of
8 healthcare systems and to anticipate changing needs where possible.
9
10
11
12
13

14 **Conclusions:** To implement lasting change and to respond to new challenges, we need context-
15 relevant definitions and frameworks, and robust, flexible, and feasible measures to support the
16 long-term sustainability and performance of healthcare systems.
17
18
19
20
21
22
23

24 **Keywords:** healthcare system sustainability, sustainable performance of healthcare systems,
25 healthcare services, value in healthcare
26
27
28
29
30
31
32

33 *Strengths and limitations of this study*

- 34
35 • This scoping review addresses a knowledge gap by providing a comprehensive synthesis
36 of the literature including definitions, measurement, challenges, solutions for
37 improvement, and scaling up successful solutions to maintain sustainable performance of
38 healthcare systems (SPHS).
39
40
41
42
43
- 44 • The review methodology was guided by the PRISMA-ScR statement, and we searched
45 multiple databases and used complementary snowballing techniques to increase
46 comprehensiveness.
47
48
49
50
- 51 • The use of the Hawker and AACODS quality appraisal tools provided an assessment of
52 the quality of literature on the sustainable performance of healthcare systems.
53
54
55
56
57

- Our review is limited in scope to countries with health systems of relevance to Australia, and this limits the generalizability of our results to low- or middle-income countries.

For peer review only

Background

Globally, healthcare spending is tracking above and beyond economic growth[1]. Challenges facing healthcare systems include an ageing population and subsequent rise of chronic diseases and multimorbidity[2, 3] and increasingly expensive new medical technologies[3, 4]. It is estimated that approximately 30% of care delivered by healthcare systems is low-value, attributable mainly to administrative overheads, bureaucracy, over-diagnosis, overtreatment or other factors[5]. Systems lacking coordination and integration across clinical disciplines and healthcare sectors also result in wasteful spending through both care duplication and omission of needed care[6]. If healthcare spending follows current trajectories, governments suggest that healthcare systems will begin to become unaffordable[3]. This leads us to the question: “what is the current thinking about interventions and initiatives to make healthcare systems more sustainable?” Understanding how healthcare system sustainability is conceptualised underpins the implementation and evaluation of system-wide interventions that aim to improve performance. Although literature about the sustainability of individual innovations and improvement programs is growing,[7] the broad question of whole-of-system sustainability is rarely studied.

Sustainability itself has remained an ambiguous topic in the literature. Sustainability suggests that healthcare systems should be built to last, and able to adapt and endure, ensuring that resources are expended efficiently and responsibly to maintain or improve individual and population health and wellbeing[8]. To be sustainable, a healthcare system must adequately deliver across financial, social, and environmental concerns[4]. This triple bottom-line is difficult to achieve consistently over time. For example, sustainable health services may need additional short-term investments to be financially beneficial in the long-term[1].

1
2
3
4
5 The healthcare system is defined as one that delivers care to those who need it across many
6 different settings. It includes key components: capacity- including physical, capital, and human
7 assets; organisational structure, both formal and informal; finances- including mechanisms for
8 funding allocations, ownership, and solvency; patients or clients and their characteristics and
9 needs; and care processes and infrastructure[9].
10
11
12
13
14
15
16
17
18

19 Healthcare system sustainability is difficult to measure in practice and requires ongoing long-
20 term monitoring and evaluation of appropriate indicators. One potential way to conceptualise and
21 operationalise sustainability is an assessment of the sustainable performance of healthcare
22 systems (SPHS). Although past reviews have addressed the sustainability of improvement
23 programs and policies in the healthcare system,[7, 10, 11] they did not specifically address how
24 SPHS is conceptualised in the medical literature. As a response, this study was designed using a
25 systems science lens to fill this gap in knowledge by reviewing publications that report on or
26 discuss the SPHS.
27
28
29
30
31
32
33
34
35
36
37
38
39

40 **Objectives**

41
42 This scoping review of health and medical literature aims to develop an understanding of how
43 SPHS has been conceptualised, defined, and measured, and to scope the identified challenges and
44 potential solutions to achieving and maintaining SPHS.
45
46
47
48
49
50

51 **Methods**

52 ***Study Design***

53
54
55
56
57
58
59
60

In keeping with scoping review methodology,[12] our inclusion criteria were broad, and our search was comprehensive to capture the state of knowledge about SPHS. We included literature reviews, primary empirical articles (including qualitative, quantitative, and mixed methods studies), case studies, opinion pieces, and editorials published in English from database inception to February 2021. To be included, studies had to report on, or discuss in detail, aspects of healthcare systems sustainability, resilience, or performance improvement, and could cover improvements in cost-effectiveness, affordability, safety, quality, equity, or access, whilst creating or realising value (Table 1). Only articles that addressed the research objectives and provided insights into current knowledge of sustainability in healthcare delivery systems were included. Articles on environmental sustainability; those investigating discrete improvement programs implemented in specific healthcare settings including studies on specific diseases or programs (for example studies on vaccination programs for a specific disease); and studies with a specific focus on COVID-19 were out of scope, as we applied a system-wide lens rather than a disease-specific focus (Table 1).

Table 1. Inclusion and exclusion criteria

Inclusion Criteria*	Exclusion Criteria
1. Definition(s) of healthcare systems performance sustainability.	1. Pertaining to sustainability relating to: <ol style="list-style-type: none"> Disaster management, pandemic or other emergency preparedness. Foreign aid or foreign investment. Workplace health and safety. Environmental sustainability.
2. Measurement of SPHS.	
3. Discussion and identification of the challenges involved in SPHS.	2. Of no relevance to the Australian context: <ol style="list-style-type: none"> Low-income countries. Healthcare systems in conflict zones. Specific to a country's political situation.
4. Discussion or identification of ways in which to improve SPHS.	

-
- | | |
|---|--|
| 5. Discussion of sustaining and scaling change in SPHS. | 3. Does not otherwise deal with sustainability of ‘healthcare systems’ (e.g., concerned with diagnosis or management of a single disease or program or improvements in a single healthcare setting). |
| | 4. Focuses on broad population healthcare initiatives rather than healthcare delivery systems (e.g., vaccination programs). |
| | 5. Does not otherwise address the objectives of this review |
| | 6. High risk of bias or low quality. |
-

*To be eligible for inclusion, articles needed to demonstrate one or more of the inclusion criteria.

Information Sources

In consultation with an experienced university medical librarian, we developed a search strategy using key words and MeSH terms and conducted an advanced search of PubMed and Ovid Medline (Additional File 1). Additional relevant articles were identified by hand searching reference lists of included articles (snowballing).

Study Selection

Guided by the Preferred Reporting Items for Systematic review and Meta-Analysis extension for Scoping Reviews (PRISMA-ScR) statement,[13, 14] and the methodological framework for scoping reviews,[12] screening of the article titles and abstracts was conducted by four reviewers (JH, JHD, GD and EM) using the predetermined inclusion and exclusion criteria (Table 1).

Reviewers screened a 5% of sample of the titles and abstracts whilst applying the inclusion and exclusion criteria and the team then met to discuss any discrepancies, before screening continued.

The full-text review was then conducted by a second reviewer team (JHD, YZ, GD, IM and GL) in consultation with JH and EM. Discrepancies were resolved in team meetings in consultation with JB as arbitrator.

Quality Assessment of Individual Studies

To understand the scope of the quality of included articles, Hawker et al.'s Quality Assessment Tool was applied as it enables quality assessment among many different article types including quantitative, qualitative, or mixed-methods empirical research studies or literature reviews[15]. The Quality Assessment Tool contains nine categories (abstract and title; introduction and aims; method and data; sampling; data analysis; ethics and bias; results; transferability or generalizability; and implications and usefulness) and a total quality score can be calculated (maximum score=36), where higher scores denote higher quality[15-17]. For quality assessment of opinion or commentary pieces, the Authority Accuracy Coverage Objectivity Date Significance (AACODS) Checklist was used[12, 17].

Data Extraction

Characteristics of included articles, year of publication, country of origin, and article type were tabulated. A purpose-designed Excel spreadsheet was used to extract relevant details from each article. The Excel spreadsheet was piloted by three reviewers on five articles and adjusted as needed.

Patient and Public Involvement

No patients or public were involved.

Results

Study Selection

1
2
3 Of 5675 articles identified in the database searches, 2404 were duplicates, leaving 3271 articles.
4
5 Undertaking independent title and abstract screening of 5% of articles, two reviewers achieved an
6
7 acceptable level of agreement (Kappa = 0.6)[18]. A further 2750 articles were excluded, leaving
8
9 521 articles for full-text review. A substantial level of agreement was achieved on review of 5%
10
11 of full text articles undertaken independently by four reviewers JHD, YZ, GD and IM; (Kappa =
12
13 0.7)[18]. After full-text review, 136 articles were included. Eighty-three additional articles were
14
15 identified from snowballing, and six met the inclusion criteria, for a total of 142 articles included
16
17 for data extraction (Figure 1). See Additional File 2 for further details.
18
19
20
21
22
23

24 [Insert **Figure 1**. PRISMA flow diagram summarising the review and reasons for article
25
26 exclusion* here]
27
28
29
30

31 *Study Characteristics*

32
33 Of the included articles, 18 were review articles (either systematic or narrative), 82 were editorial
34
35 or opinion pieces, 37 were primary empirical studies, and five were a brief narrative review
36
37 combined with an empirical study (classified as empirical for simplicity). Empirical studies used
38
39 a wide variety of data collection techniques and included qualitative analysis of interviews,[19]
40
41 survey results,[20, 21] analysis of hospital data records,[22, 23] and economic analysis[24-28].
42
43
44 The included articles described studies that covered various geographic locations, most
45
46 commonly Canada (n=22), the United States of America (n=22), Australia (n=23, including two
47
48 which involved Australia and New Zealand), the United Kingdom (n=6), the Netherlands (n=2),
49
50 and one each from the following countries Austria, Italy, Northern Ireland, Malaysia, Malta, New
51
52 Zealand, Oman, the Philippines, Portugal, Scotland and Spain. The remainder of studies referred
53
54 to geographical regions such as the European Union, or to multiple nations, for example one
55
56
57
58
59
60

1
2
3 included the United States of America, the United Kingdom, and Australia[29] and another
4
5 included Australia, Ireland, Austria and Denmark[30].
6
7
8
9

10 The data extraction sheet included the citation, study aims, study design, themes addressed, and
11 additional relevant information about SPHS. Details of the 142 included articles are summarised
12 in Additional File 2. Of the 142, most identified challenges (n=94, 66%) and proposed ways to
13 improve SPHS (n=89, 62%) while fewer discussed measuring SPHS (n=48, 34%), or sustaining
14 and scaling change (n=47, 33%) and fewer still provided any definition of SPHS (n=38, 27%).
15
16
17
18
19
20
21
22
23

24 ***Quality of Included Studies***

25
26 Forty-three empirical studies scored 25-34 points on the Hawker's Quality Assessment Tool,[15]
27 and 29 were of high quality, 13 moderate quality, and one borderline low quality[16]. None were
28 excluded due to low quality (Additional File 3). The quality of editorial and opinion pieces
29 (n=99) was analysed according to the AACODS criteria, and 72 articles ranked 'yes' for all
30 criteria indicating high quality (Additional File 3).
31
32
33
34
35
36
37
38
39

40 ***Defining SPHS***

41
42 Definitions of SPHS were provided by 38 publications including 25 opinion pieces, seven review
43 articles, and six empirical studies (Table 2). The definitions fell into three broad groupings: 1)
44 fiscal sustainability, 2) human resource sustainability and acceptance of change by stakeholders,
45 and 3) system adaptability and improvement (Table 2). Definitions focused on continual
46 improvement,[29] and embeddedness of changes into the healthcare system in the long term[31-
47
48
49
50
51
52
53
54
55
56
57
58
59
60

Several articles defined SPHS in terms of fiscal sustainability[24, 32-37]. Examples included discussions of sustainability of rural primary care services in the face of ongoing policy change to reimbursement and practice incentives,[36] adoption of new funding models to ensure availability of medicines,[24] and hospital capital investments to improve patient access to care[35]. Articles also discussed the importance of balancing financial interests with social and ecological interests[38]. Several papers conceptualised SPHS as the continuation of programs after the cessation of external program-specific funding[39-41].

Four articles[42-45] discussed SPHS through the lens of a learning healthcare system, a system in which ‘science, informatics, incentives, and culture are aligned for continuous improvement and innovation’[46]. These articles focussed predominantly on using data and evidence to support system adaptability and improvement over time.

Table 2. Definitions of SPHS

Definition	Exemplar Quotes	Relevant References		
		Empirical articles	Editorials or opinion pieces	Reviews
Fiscal sustainability	“The WHO considers fiscal sustainability as a requirement, rather than an objective, of health financing policy. Sustainability of healthcare financing therefore cannot be interpreted as a reduction of healthcare costs, but rather as a predictable growth or control of health expenditures.”[24]	[35, 36, 47, 48]	[24, 32-34, 37, 39, 49]	[40, 41, 47, 50, 51]
Human resource sustainability and acceptability	“It has been increasingly recognised that getting HR policy and management "right" has to be at the core of any sustainable solution to health system performance”[32, 52]	[48]	[32-34, 38, 49, 52-58]	[31, 51]

to stakeholders	“A sustainable health system also has acceptability to key constituents, including patients and health professionals.” [33]			
Adaptability and improvement over time to create a future-focused intervention	“A sustainable health system ... [has] adaptability, because health and health care needs are not static (i.e., a health system must respond adaptively to new diseases, changing demographics, scientific discoveries, and dynamic technologies in order to remain viable).”[33] “Ensuring that sufficient resources are available over the long term to provide timely access to quality services that address Canadians’ evolving health needs.”[59]	[36, 43]	[4, 33, 39] [42, 49, 55-65]	[31, 50, 51, 66, 67]

Measuring SPHS

The measurement of SPHS was addressed through theoretical discussions across the 24 editorials and seven review articles, and by proposing, developing, or applying frameworks or indicators in 17 empirical studies (Table 3). These frameworks and indicators were heterogeneous and included financial, social and healthcare outcomes[68] with some articles highlighting the limitations of widely used financial metrics[34, 69]. Although heterogeneous,[40] measures were undertaken at three broad outcome levels: 1) Individual (e.g., continued health benefits for patients or healthcare providers); 2) Organisational (e.g., continuation of innovations, hospital-level fiscal improvements); or 3) Community (e.g., continued use of programs, services or healthcare interventions).

A variety of new SPHS measures were proposed, developed, modified, or tested in research environments[20, 22, 45, 66, 70, 71] to address current deficits in available measures (Table 3).

For example, the Q*Scale was designed to combine data on caseload, patient satisfaction and physician aptitude, such that changes in hospital performance could be more effectively monitored[70]. In contrast, the Dynamic Sustainability Framework (DSF) seeks to investigate the fit between the intervention, practice settings, contexts and cultures, healthcare policies, and the broader ecology within which healthcare systems operate, including socio-political systems[39]. Similarly, the Health Care Sustainability Framework (HCSF) and the Responsible Innovations for Health (RIH) framework, recognise the importance of accounting for the needs and trends of the population, workforce, and financial constraints[72, 73]. Alternative models utilising a scoring system (e.g. using the Resilience Indicator) were based on data-driven simulation modelling,[74] or theoretical composite indicators of the value of healthcare systems[74, 75].

Table 3. Summary of established and novel frameworks suggested for measuring SPHS

Established framework name	Rationale for use
Organisational Change Model (OCM)	To measure the success of sustained organisational change, according to faculty member survey respondents [71]
Analysis of hospital records (e.g., payroll records)	Measuring staff turnover, workforce supply and financial sustainability [22, 26]
Evaluation of health networks	To evaluate the effectiveness and sustainability of health networks [76]
Novel framework name	Rationale for development
Q* Scale	To measure performance at the hospital level [70]
Dynamic Sustainability Framework (DSF)	To investigate the fit between the intervention, the practice setting, and the ecological system [39] To improve measurement of SPHS beyond patient outcomes only [40]
Resilience Indicator	To highlight the systemic relevance of primary care network systems to quantify healthcare resilience [74]
eMergy (embodied energy) Sustainability Index	To address the lack of qualitative indicators for sustainability [66]

Future Health Index (FHI)	To identify preparedness of countries to building sustainable health systems [75]
Health Care Sustainability Framework (HCSF)	To measure the relationships between political and fiscal sustainability of an intervention [72]
Responsible Innovations for Health (RIH) Framework	To identify interventions that suitably address five domains (population health, healthcare system, economic, organisational, environmental)[73]
Research Lifecycle Framework	To enhance the impact of the Learning Health System by operationalising research innovations into clinical practice [45]
Value Of Diagnostic Information (VODI) Framework	To outline the multidimensional benefits and potential of healthcare diagnostics [77]

Identified Challenges to SPHS

Ninety-four articles, including 60 editorials, 22 empirical studies and 12 reviews, identified challenges to SPHS across three main themes: 1) increasingly complex patient populations; 2) ongoing gaps between evidence, policy and practice; and 3) concerns of system fragmentation and need for integration for a more streamlined adoption and sustainment of interventions.

Increasingly complex patient populations,[3, 23, 49, 74, 78-84] including patients with multi-morbidity[21, 48, 74, 79, 80, 82, 85, 86] and greater demand for effective aged care, under already strained healthcare budgets[3, 27, 49, 57, 87-92] were frequently discussed. The increasing demands and expectations of patients for healthcare of the highest quality challenges healthcare systems to meet this demand[4, 21, 79, 80, 82, 93, 94].

The gaps between evidence, policy and practice[40, 95, 96] continue to threaten SPHS as does limited investment in building workforce capacity and stakeholder involvement[30, 43]. The

challenge of increasing public scrutiny and the need to balance financial, environmental, and social sustainability were also recognised[28, 38, 63, 97, 98].

The fragmented nature of healthcare systems including power imbalances among the health professions, and resistance to changes in the scope of practice was reported to limit team approaches to care[99, 100]. Siloed care delivery models can become misaligned with the complexity of the healthcare system and the complexity of patient needs[55, 72, 101, 102]. Other publications reported lack of collaboration between public and private hospitals[91, 103] and widening gaps in care quality in rural/remote regions due to limited resources[23, 36, 91, 104]. Poor integration of primary care with the broader healthcare system was also seen as challenging SPHS[67, 81].

Opportunities for Improvement of SPHS

To address the challenges posed requires more than a one-time simple "fix". Continued adaptation in response to local contexts, and ongoing monitoring and evaluation are required to support the sustainment of effective solutions and to anticipate future needs and solutions[71].

Twelve review articles, 19 empirical articles, and 56 editorials discussed opportunities to improve SPHS.

Greater strategic investment in the system,[34, 62, 69, 88, 89] including funding novel interventions,[26, 40, 53, 98, 105] and capacity building programs for staff[30, 106] were advocated. Workplace culture in healthcare was identified as an important factor for SPHS. The importance of physician well-being was highlighted,[44, 95, 107, 108] and was strongly linked with organisational culture[17]. The importance of mentorship, teaching and leadership were also

1
2
3 highlighted as enablers of organisational improvements[19, 43, 94, 95]. Building healthcare
4 system cultures that support medical graduates was viewed as crucial[38, 108-110]. Promoting
5 incentives for generalist doctors to practice rurally was thought to address the current
6 geographical gap in access to healthcare[44, 104, 109-111].
7
8
9

10
11
12
13
14 The promotion of desired attitudes, values and ideals of healthcare organisations was also
15 recognised for achieving SPHS. Specifically, the value of patient-centred care and evidence-
16 based medicine[30, 44, 65, 79, 84, 85, 111, 112], and collaboration between and within
17 healthcare facilities and disciplines was highlighted as important for SPHS[42, 48, 103, 112-115].
18 Support by management that values the workforce, uses robust data-driven hospital management
19 systems, and accessible, shared electronic medical record systems was also acknowledged as
20 vital[93, 116].
21
22
23
24
25
26
27
28
29
30
31
32

33 The importance of political stability and bridging the jurisdictional-federal divide in federated
34 healthcare systems (such as in the US, Canada, and Australia) was important for effective unified
35 healthcare system functioning[24, 51, 88, 89, 117, 118]. It is not only organisational culture in
36 healthcare,[119] but the broader organisation, governance and regulation of the healthcare system
37 that are important for SPHS[64, 120, 121].
38
39
40
41
42
43
44
45
46

47 Community involvement is an important factor that bolsters capacity to implement and sustain
48 change[116]. Empowering patients to care for their own health, and building confidence among
49 caregivers to deliver some aspects of care, reduces burden on the healthcare system[79].
50
51
52

53 Community involvement via Community Based Participatory Research bolstered equity and
54
55
56
57

1
2
3 improved outcomes of care[122] and responding to recommendations from citizen panels also
4
5 improved SPHS[92, 115, 123].
6
7

8
9
10 As technology advances, so does the ability to harness it to promote the sustainability of
11
12 healthcare systems[33]. For example, point-of-care electronic prompts were used in one study of
13
14 hospital surgical wards to decrease rates of hospital-acquired infections[124]. Embedding
15
16 artificial intelligence and big data analytics hold promise to support efficient and effective service
17
18 delivery to improve SPHS[55]. Other studies have suggested greater adoption of telemedicine to
19
20 reduce travel time and costs[4] as complementary support to patients,[105] to improve
21
22 diagnostics,[77] and as a platform to promote prevention of illness,[23] as contributing to SPHS.
23
24
25

26 27 28 ***Sustaining and Scaling Change in SPHS***

29
30 Forty-seven articles addressed this theme, including nine reviews, 11 empirical articles and 27
31
32 editorials. As interventions are often implemented with limited and/or short-term (2-3 year)
33
34 evaluation plans, demonstrating SPHS is often elusive[40]. Robust evaluations using relevant
35
36 SPHS indicators embedded alongside implementation, from the outset to support adaptations and
37
38 decisions about ongoing investments were advocated[51, 125]. One article proposed that federal
39
40 funding agencies should perceive funding implementations of health innovations as ongoing
41
42 strategic investments rather than time-limited projects[42].
43
44
45

46
47
48 The importance of accepting changes or adaptations to proposed interventions were also
49
50 highlighted [126, 127]. For example, Greenhalgh *et al*[127] reported on a three-year case study
51
52 follow-up of a healthcare system transformation and found that adaptations of the intervention to
53
54 local contexts was important for sustainment of the intervention.
55
56
57

1
2
3
4
5
6 A recurring sentiment in the articles reviewed was the importance of support for the continuation
7
8 of interventions from leaders and stakeholders[65, 78, 116, 119, 128, 129]. Leaders and managers
9
10 have a clear role in supporting staff throughout the processes of reforms and changes, by
11
12 providing opportunities for co-design, education including e-learning, and building peer
13
14 networks[62, 130] whilst creating open communication to involve front-line staff in planning and
15
16 implementation[116, 131]. For example, one article suggested that pharmacists should be
17
18 involved in developing hospital discharge procedures to improve medication safety and
19
20 adherence[132]. In more recent articles, policy makers and political leaders are highlighted as
21
22 important change agents, as long as they work in concert with front-line health staff[51, 129,
23
24 133].
25
26
27
28
29

30
31 Transparent healthcare policies and algorithms for equitable distribution of healthcare funds was
32
33 advocated, and particularly prioritised by rural areas[36, 69]. Beyond the government,
34
35 communities and multi-sectorial partners,[49] and collaborations among hospitals, medical
36
37 schools and physicians were also highlighted as vital for SPHS[68].
38
39
40
41

42 Although publications in our review predominantly urged for the sustainability of innovations,
43
44 recent literature also highlights the need for discontinuation or redesign of programs that have
45
46 become ineffective or irrelevant over time[4, 39, 127]. This is important to achieve sustainability
47
48 as it ensures that value is maintained in the healthcare system[134].
49
50
51
52

53 **Discussion**

54
55
56
57
58
59
60

1
2
3 Definitions of SPHS were rarely offered, with only 27% of included articles providing any
4
5 definition of SPHS whilst referring to the concept of SPHS. When definitions were provided,
6
7 they mainly centred on financial and workforce sustainability, and a variety of concepts related to
8
9 adaptability, improvement, and innovation for the future. The lack of definitions and variability
10
11 in definitions creates significant limitations for the interpretation of the current body of literature
12
13 on SPHS. As a first step to address this limitation, we would urge authors discussing SPHS to
14
15 provide a definition that is relevant to their context. Furthermore, there were interesting contrasts
16
17 in the boundaries adopted to describe the ‘healthcare system’ in the included papers which has
18
19 also been identified by others[135]. For example, some studies measured SPHS at a single
20
21 hospital level,[70] whereas others addressed it at a national system level,[136] making
22
23 comparisons across studies difficult. In the future, as evidence about SPHS develops it may be
24
25 possible to create nuanced measures, definitions, and approaches to SPHS as applied to different
26
27 healthcare system levels and contexts.
28
29
30
31
32
33
34

35 The long-standing approach to measuring SPHS in terms of financial outcomes is increasingly
36
37 becoming more sophisticated through the development of newer more nuanced frameworks and
38
39 indicators that account for health and societal benefits whilst factoring in the complex and
40
41 dynamic nature of healthcare systems. Although new frameworks and measures, for example the
42
43 Future Health Index,[75] the Q*Scale[70] and the Resilience Indicator[74] have been proposed,
44
45 the evidence for the practical application of such frameworks and measures in the real world was
46
47 limited.
48
49
50
51
52
53

54 The most common opportunities for improving SPHS related to building supportive and
55
56 functional workplace and organisational cultures that promote collaboration, transparency, patient
57
58
59
60

centredness and community participation. The adoption of technological advances including greater use of linked up information technology platforms to provide intelligence about aspects of SPHS were also discussed in the literature[4, 23, 33, 105, 124]. Importantly, policy and political stability over time was also recognised as a supportive factor for SPHS, especially when implementing innovations and interventions that require longer term horizons to demonstrate their impacts on SPHS[24, 40, 51, 88, 89, 96, 117, 118]. This aligns with findings from a recent systematic review that specifically focused on the sustainability of health improvement programs[44].

The increasing adoption of pragmatic implementation trials in healthcare research is an important advance to support effectiveness testing in real-life situations rather than in contrived randomised controlled trials that are difficult to implement at scale in real-world settings to meet the needs of changing populations[46, 131].

Table 4 provides a summary of the current evidence about SPHS under five headings: defining sustainability; measuring it; associated challenges of realising sustainable performance; identifying opportunities for improvement; and creating, sustaining and scaling SPHS. This provides an important starting point for future research in the field.

Table 4. Summary of key findings under the five SPHS focus areas analysed in this review

Criteria	Explanation	Key points from included articles
Defining sustainability	What do we mean by SPHS?	<ul style="list-style-type: none"> - SPHS is difficult to define [29, 31-33] - Sustainability is most often framed in terms of fiscal/financial or economic sustainability [4, 24, 32-37, 66]

		- Sustaining a system intervention post-implementation and initial funding period [39-41]
Measuring	How do we measure SPHS?	<ul style="list-style-type: none"> - Issue of system boundaries—at which level should we measure sustainability? (e.g., at the individual hospital or healthcare system level) [70, 136] - Heterogeneous outcome data collection techniques (e.g., individual, organisation and community level) [34, 40, 68, 69] - Wide variety of new methods and indicators suggested (see Table 3) [20, 22, 66, 70, 71, 73]
Associated challenges	What challenges are associated with SPHS?	<ul style="list-style-type: none"> - Complex patient population (e.g., ageing, comorbidities and chronic illnesses) [3, 4, 21, 27, 49, 78-80, 85-91, 93] - The chasm between evidence and practice and policy and practice [26, 28, 34, 40, 53, 62, 63, 69, 88, 89, 95-98, 105, 106] - Fragmentation and gaps (e.g., power imbalances between healthcare personnel, rural versus urban services, fragmentation between public and private hospitals) [36, 71, 72, 91, 99-101, 103]
Opportunities for improvement	What helps improve SPHS?	<ul style="list-style-type: none"> - Workplace culture (e.g., mentorship, leadership, support for health professionals) [17, 19, 95, 104, 107, 109, 110] - Organisational culture (e.g., promoting collaborative attitudes, transparency, patient-centred care and political stability) [24, 79, 85, 88, 89, 93, 103, 113, 116-118] - Consumer and community involvement to align the system with needs (e.g., patient reported measures, in research, focus groups, and consumer panels) [79, 116, 122, 123] - Implementing technological advances (e.g., e-health) [4, 23, 33, 105, 124]
Sustaining and scaling	What initiatives for have been used to improve and maintain to SPHS (or value)?	<ul style="list-style-type: none"> - Setting up interventions for sustainability (e.g., extended initial funding periods, ongoing evaluation feedback loops, using pragmatic trial designs) [40, 98, 124, 137] - Support from all stakeholders [49, 62, 78, 116, 128, 130-132] - Developing cross-sectoral, interdisciplinary relationships and collaborations [36, 68, 69, 79]

-
- Ability of intervention to adapt and flex depending on the context of implementation [127]
-

Strengths and Limitations

Methodological strengths of the current review include the use of the PRISMA-ScR statement to guide the review, including searching multiple databases and using snowballing techniques to increase comprehensiveness. Although formal quality appraisal is not recommended for scoping reviews, we felt it was important to also understand the scope of the quality of articles being published in addition to understanding their content and findings about SPHS.

As described above, the heterogenous nature of the current literature and limited use of definitions and frameworks made synthesis challenging. Our choice to limit the current review to studies reporting on SPHS in high-income countries further limits generalisability to other settings including in low- and middle-income countries (LMICs).

Future research directions

This article summarises the current scope of the literature on SPHS and provides an important starting point for future research. Although new SPHS measures and frameworks that include factors other than financial inputs and outputs have been proposed, their usefulness needs to be evaluated in the real-world healthcare ecosystem in the future. Taking a broad system-wide lens, our focus was on the SPHS in healthcare delivery settings and did not specifically consider individual programs for specific diseases, conditions or settings. In addition, the role of preventative care and broader public health prevention measures such as vaccination programs, should be a focus for future research. Research on the specific effect of the COVID-19 pandemic on SPHS is warranted to inform future responses to similar broad-ranging global threats to

SPHS[124, 125]. Understanding the scope of SPHS in LMICs is important for the future development of SPHS and future research is needed to summarise current knowledge, interventions, programs and measures of SPHS in these settings.

Conclusion

There is broad agreement that the sustainability of healthcare systems and their performance levels are increasingly being challenged. Our review confirms that the concept of SPHS is important and is frequently discussed in the health and medical literature. The field of SPHS is expanding with recent publications defining SPHS in terms other than the traditional financial measures. This places more emphasis on acceptability of the system to patients, healthcare providers and other stakeholders, adaptation and resilience, and sufficient nimbleness to absorb new evidence and innovations to support continuous improvements.

It is unlikely that we will, nor should we, settle on a single definition of SPHS. We would favour definitions that are robust but flexible to ensure their utility in the many and varied healthcare system contexts, however, authors and editors should strive to ensure that a definition is provided in any discussions of SPHS. We need sophisticated yet practical indicators of SPHS that capture sustainability beyond the traditional financial measures. Such measures have been proposed in the research literature, but their utility needs to be tested in real-world settings. The current literature suggests that SPHS is improved by strengthening of workplace cultures, continuous workforce development, direct health consumer and community involvement, and swift adoption and embedding of new evidence and technologies that are proven to have an advantage over current practice.

List of Abbreviations:

AACODS	Authority Accuracy Coverage Objectivity Date Significance
DFS	Dynamic Sustainability Framework
HCSF	Health Care Sustainability Framework
OCM	Organisational Change Model
PRISMA	Preferred Reporting Items for Systematic review and Meta-Analysis
RIH	Responsible Innovations for Health
SPHS	Sustainable Performance of Healthcare Systems
WHO	World Health Organisation

Additional Files

Additional File 1: SEARCH STRATEGY (Zurynski_HerkesAdditionalFile1-search strategy.docx)

Additional File 2: SUMMARY OF INCLUDED PAPERS (Zurynski_HerkesAdditionalFile2-summary of included papers.docx)

Additional File 3: QUALITY ASSESSMENT (Zurynski_Herkes_AdditionalFile3-quality assessment.docx)

Declarations

Ethics approval and consent to participate

Not applicable.

Authors' contributions

JB conceptualised the study and led the team's work. EM, JHD, JH and YZ developed the search strategy. EM, JHD, JH, GL, GD, and YZ conducted the abstract review, and JHD, GD, GL, IM and YZ full-text review and data extraction, with JB acting as arbitrator when needed. JHD, IM

1
2
3 and GD conducted the quality assessment. YZ and JHD drafted the manuscript with input from
4
5 GD and NKH, and all authors contributed their comments and approved of the final version of
6
7 the manuscript.
8
9

10 **Funding**

11
12 This work was supported by the NHMRC Partnership Centre for Health System Sustainability
13
14 (Grant ID 9100002) and NHMRC Investigator Grant APP1176620.
15
16

17 **Competing interests**

18
19 There are not competing interests.
20
21
22

23 **Patient consent for publication**

24
25 Not applicable.
26
27

28 **Provenance and peer review**

29
30 Not commissioned; externally peer reviewed.
31
32

33 **Availability of data and materials**

34
35 All data relevant to the study are included in the article or uploaded as supplementary information
36
37
38

39 **Acknowledgements**

40
41 We gratefully acknowledge Kelly Nguyen for administrative and logistical support.
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

Uncategorized References

1. OECD. Fiscal sustainability of health systems: bridging health and finance perspectives. Paris, France: OECD Publishing; 2015.
2. Global, regional, and national disability-adjusted life-years (DALYs) for 315 diseases and injuries and healthy life expectancy (HALE), 1990-2015: a systematic analysis for the Global Burden of Disease Study 2015. *Lancet* 2016;388:1603-58.
3. Amalberti R, Nicklin W, Braithwaite J. Preparing national health systems to cope with the impending tsunami of ageing and its associated complexities: Towards more sustainable health care. *Int J Qual Health Care* 2016;28:412-4.
4. Coiera E, Hovenga EJ. Building a sustainable health system. *Yearb Med Inform* 2007;11-8.
5. Fisher ES, Bynum JP, Skinner JS. Slowing the growth of health care costs - lessons from regional variation. *N Engl J Med* 2009;360:849-52.
6. Zhi M, Ding EL, Theisen-Toupal J, Whelan J, Arnaout R. The landscape of inappropriate laboratory testing: a 15-year meta-analysis. *PLoS One* 2013;8:e78962-e.
7. Braithwaite J, Ludlow K, Testa L, Herkes J, Augustsson H, Lamprell G, et al. Built to last? The sustainability of healthcare system improvements, programs and interventions: a systematic integrative review. *BMJ Open* 2020;10:e036453.
8. AIHI. Purpose Sydney, Australia: Australian Institute of Health Innovation; 2017 [Available from: <https://www.healthsystemsustainability.com.au/about-us-2/purpose-of-nhmrc-partnership-centres/>].
9. Piña IL, Cohen PD, Larson DB, Marion LN, Sills MR, Solberg LI, et al. A framework for describing health care delivery organizations and systems. *Am J Public Health* 2015;105:670-9.
10. Lennox L, Maher L, Reed J. Navigating the sustainability landscape: a systematic review of sustainability approaches in healthcare. *Implement Sci* 2018;13.
11. Wiltsey Stirman S, Kimberly J, Cook N, Calloway A, Castro F, Charns M. The sustainability of new programs and innovations: a review of the empirical literature and recommendations for future research. *Implement Sci* 2012;14:17.
12. Arksey H, O'Malley LO. Scoping studies: towards a methodological framework. *Int J Soc Res Methodol* 2005;8:19-32.
13. Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group. Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *PLoS Med* 2009;6:e1000097.
14. Shamseer L, Moher D, Clarke M, Ghersi D, Liberati A, Petticrew M, et al. Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015: elaboration and explanation. *BMJ* 2015;349:g7647.
15. Hawker S, Payne S, Kerr C, Hardey M, Powell J. Appraising the evidence: reviewing disparate data systematically. *Qual Health Res* 2002;12:1284-99.
16. Lorenc T, Pettigrew M, Whitehead M. Appendix 5: quality assessment for the systematic review of qualitative evidence. In: Research PH, editor. *Crime, Fear of Crime and Mental Health: Synthesis of Theory and Systematic Reviews of Interventions and Qualitative Evidence*. 2.2. Southampton, United Kingdom: NIHR Journals Library; 2014.
17. Braithwaite J, Herkes J, Ludlow K, Testa L, Lamprell G. The association between organisational and workplace cultures, and patient outcomes: systematic review. *BMJ Open* 2017;7:e017708.
18. Landis J, Koch G. The measurement of observer agreement for categorical data. *Biometrics* 1977;33:159-74.
19. Stockdale SE, Zuchowski J, Rubenstein LV, Sapir N, Yano EM, Altman L, et al. Fostering evidence-based quality improvement for patient-centered medical homes: initiating local quality councils to transform primary care. *Health Care Manag Rev* 2018;43:168-80.

- 1
2
3 20. Lizarondo L, Turnbull C, Kroon T, Grimmer K, Bell A, Kumar S, et al. Allied health: integral to
4 transforming health. *Aust Health Rev* 2016;40:194-204.
- 5 21. Robertson J, Walkom EJ, Henry DA. Health systems and sustainability: doctors and
6 consumers differ on threats and solutions. *PLoS One* 2011;6:e19222.
- 7 22. Fox LA, Walsh KE, Schinker EG. The creation of a pediatric hospital medicine dashboard:
8 performance assessment for improvement. *Hosp Pediatr* 2016;6:412-9.
- 9 23. Pencheon D. Developing a sustainable health and care system: lessons for research and
10 policy. *J Health Serv Res Policy* 2013;18:193-4.
- 11 24. Inotai A, Petrova G, Vitezic D, Kalo Z. Benefits of investment into modern medicines in
12 Central-Eastern European countries. *Expert Rev Pharm Out* 2014;14:71-9.
- 13 25. Sepehri A. Does autonomization of public hospitals and exposure to market pressure
14 complement or debilitate social health insurance systems? Evidence from a low-income country. *Int*
15 *J Health Serv* 2014;44:73-92.
- 16 26. Zhao Y, Russell DJ, Guthridge S, Ramjan M, Jones MP, Humphreys JS, et al. Long-term trends
17 in supply and sustainability of the health workforce in remote Aboriginal communities in the
18 Northern Territory of Australia. *BMC Health Serv Res* 2017;17:836.
- 19 27. Sonnenreich P, Geisler L. Covering the cost of the cure: from hepatitis C to cancer, new
20 therapies are straining a system plagued by inefficiency. *P & T* 2016;41:565-89.
- 21 28. Stuart B, D'Onofrio CN, Boatman S, Feigelman G. CHOICES: promoting early access to end-of-
22 life care through home-based transition management. *J Palliat Med* 2003;6:671-83.
- 23 29. Rees GH. Organisational readiness and Lean Thinking implementation: findings from three
24 emergency department case studies in New Zealand. *Health Serv Manage Res* 2014;27:1-9.
- 25 30. Ammentorp J, Bigi S, Silverman J, Sator M, Gillen P, Ryan W, et al. Upscaling communication
26 skills training - lessons learned from international initiatives. *Patient Educ Couns* 2021;104:352-9.
- 27 31. Braithwaite J, Marks D, Taylor N. Harnessing implementation science to improve care
28 quality and patient safety: a systematic review of targeted literature. *Int J Qual Health Care*
29 2014;26:321-9.
- 30 32. Shigayeva A, Coker RJ. Communicable disease control programmes and health systems: an
31 analytical approach to sustainability. *Health Policy Plan* 2015;30:368-85.
- 32 33. Fineberg HV. A successful and sustainable health system--how to get there from here. *N Engl*
33 *J Med* 2012;366:1020-7.
- 34 34. Sepehri A, Chernomas R. Is the Canadian health care system fiscally sustainable? *Int J Health*
35 *Serv* 2004;34:229-43.
- 36 35. Kerr R, Hendrie DV. Is capital investment in Australian hospitals effectively funding patient
37 access to efficient public hospital care? *Aust Health Rev* 2018;23:23.
- 38 36. Buykx P, Humphreys JS, Tham R, Kinsman L, Wakerman J, Asaid A, et al. How do small rural
39 primary health care services sustain themselves in a constantly changing health system
40 environment? *BMC Health Serv Res* 2012;12:81.
- 41 37. Cashin A. The challenge of nurse innovation in the Australian context of universal health
42 care. *Collegian* 2015;22:319-24.
- 43 38. Buttigieg SC. Innovation Strategies and Health System Guiding Principles to Address Equity
44 and Sustainability in Responsible Innovation in Health Comment on "What Health System
45 Challenges Should Responsible Innovation in Health Address? Insights From an International
46 Scoping Review". *Int J Health Policy Manag* 2019;8:570-2.
- 47 39. Chambers DA, Glasgow RE, Stange KC. The dynamic sustainability framework: addressing
48 the paradox of sustainment amid ongoing change. *Implement Sci* 2013;8.
- 49 40. Scheirer MA. Is sustainability possible? A review and commentary on empirical studies of
50 program sustainability. *Am J Eval* 2005;26:320-47.
- 51 41. Gruen RL, Elliott JH, Nolan ML, Lawton PD, Parkhill A, McLaren CL, et al. Sustainability
52 Science: an integrated approach for health-programme planning. *Lancet* 2008;372:1579-89.
- 53
54
55
56
57
58
59
60

42. Embi PJ, Richesson R, Tenenbaum J, Kannry J, Friedman C, Sarkar IN, et al. Reimagining the research-practice relationship: policy recommendations for informatics-enabled evidence-generation across the US health system. *JAMIA Open* 2019;2:2-9.
43. Enticott J, Braaf S, Johnson A, Jones A, Teede HJ. Leaders' perspectives on learning health systems: a qualitative study. *BMC Health Serv Res* 2020;20:1087.
44. Clancy C. Creating World-Class Care and Service for Our Nation's Finest: How Veterans Health Administration Diffusion of Excellence Initiative Is Innovating and Transforming Veterans Affairs Health Care. *Permanente Journal* 2019;23.
45. Kilbourne AM, Braganza MZ, Bowersox NW, Goodrich DE, Miake-Lye I, Floyd N, et al. Research Lifecycle to Increase the Substantial Real-world Impact of Research: Accelerating Innovations to Application. *Med Care* 2019;57 Suppl 10 Suppl 3:S206-s12.
46. Committee on the Learning Health Care System in A, Institute of M. In: Smith M, Saunders R, Stuckhardt L, McGinnis JM, editors. Best Care at Lower Cost: The Path to Continuously Learning Health Care in America. Washington (DC): National Academies Press (US); 2013.
47. Braithwaite J, Zurynski Y, Ludlow K, Holt J, Augustsson H, Campbell M. Towards sustainable healthcare system performance in the 21st century in high-income countries: a protocol for a systematic review of the grey literature. *BMJ Open* 2019;9:e025892.
48. Pereno A, Eriksson D. A multi-stakeholder perspective on sustainable healthcare: From 2030 onwards. *Futures* 2020;122:102605.
49. Crisp N. What would a sustainable health and care system look like? *BMJ* 2017;358:j3895.
50. Abimbola S, Baatiema L, Bigdeli M. The impacts of decentralization on health system equity, efficiency and resilience: a realist synthesis of the evidence. *Health Policy Plan* 2019;34:605-17.
51. Derakhshani N, Doshmangir L, Ahmadi A, Fakhri A, Sadeghi-Bazargani H, Gordeev VS. Monitoring Process Barriers and Enablers Towards Universal Health Coverage Within the Sustainable Development Goals: A Systematic Review and Content Analysis. *Clinicoecon Outcomes Res* 2020;12:459-72.
52. Buchan J. What difference does ("good") HRM make? *Hum Resour Health* 2004;2:6.
53. Buchan JM, Naccarella L, Brooks PM. Is health workforce sustainability in Australia and New Zealand a realistic policy goal? *Aust Health Rev* 2011;35:152-5.
54. Hovenga EJ. Impact of data governance on a nation's healthcare system building blocks. *Studies in Health Technology & Informatics* 2013;193:24-66.
55. Vainieri M, Noto G, Ferre F, Rosella LC. A Performance Management System in Healthcare for All Seasons? *Int J Environ Res Public Health* 2020;17.
56. Editorial. *Healthc Q* 2020;22:1-2.
57. Costa-Font J, Levaggi R. Innovation, aging, and health care: Unraveling "silver" from "red" herrings? *Health Econ* 2020;29 Suppl 1:3-7.
58. Craig N, Robinson M. Towards a preventative approach to improving health and reducing health inequalities: a view from Scotland. *Public Health* 2019;169:195-200.
59. Rosenberg-Yunger ZR, Daar AS, Singer PA, Martin DK. Healthcare sustainability and the challenges of innovation to biopharmaceuticals in Canada. *Health Policy* 2008;87:359-68.
60. Barasa EW, Cloete K, Gilson L. From bouncing back, to nurturing emergence: reframing the concept of resilience in health systems strengthening. *Health Policy Plan* 2017;32:iii91-iii4.
61. Lehoux P, Williams-Jones B, Miller F, Urbach D, Tailliez S. What leads to better health care innovation? Arguments for an integrated policy-oriented research agenda. *Journal of Health Services & Research Policy* 2008;13:251-4.
62. Thompson RE. Sustainability as the lynch pin of public policy and industry initiatives. *Physician Exec* 1998;24:52-5.
63. Mackenzie J. The old care paradigm is dead, long live the new sustainable care paradigm: how can GP commissioning consortia meet the demand challenges of 21st century healthcare? *London J Prim Care (Abingdon)* 2011;4:64-8.

64. Walsh K. Strengthening primary care: the role of e-learning. *Educ Prim Care* 2019;30:267-9.
65. Marcotte LM, Moriates C, Wolfson DB, Frankel RM. Professionalism as the Bedrock of High-Value Care. *Acad Med* 2020;95:864-7.
66. Garde S, Hullin CM, Chen R, Schuler T, Granz J, Knaup P, et al. Towards sustainability of health information systems: how can we define, measure and achieve it? *Stud Health Technol Inform* 2007;129:1179-83.
67. Barbazza E, Kringos D, Kruse I, Klazinga NS, Tello JE. Creating performance intelligence for primary health care strengthening in Europe. *BMC Health Serv Res* 2019;19:1006.
68. Kepros JP, Opreanu RC. A new model for health care delivery. *BMC Health Serv Res* 2009;9:57.
69. Dhalla I. Canada's health care system and the sustainability paradox. *Can Med Assoc J* 2007;177:51-3.
70. Solon O, Woo K, Quimbo SA, Shimkhada R, Florentino J, Peabody JW. A novel method for measuring health care system performance: experience from QIDS in the Philippines. *Health Policy Plan* 2009;24:167-74.
71. Molfenter T, Gustafson D, Kilo C, Bhattacharya A, Olsson J. Prospective evaluation of a Bayesian model to predict organizational change. *Health Care Manage Rev* 2005;30:270-9.
72. Birch S, Murphy GT, MacKenzie A, Cumming J. In place of fear: aligning health care planning with system objectives to achieve financial sustainability. *J Health Serv Res Policy* 2015;20:109-14.
73. Pacifico Silva H, Lehoux P, Miller FA, Denis JL. Introducing responsible innovation in health: a policy-oriented framework. *Health Res Policy Syst* 2018;16:90.
74. Lo Sardo DR, Thurner S, Sorger J, Duftschmid G, Endel G, Klimek P. Quantification of the resilience of primary care networks by stress testing the health care system. *Proceedings of the National Academy of Sciences of the United States of America* 2019;116:23930-5.
75. Shen H, Sui Y, Fu Y. Using social choice theory and acceptability analysis to measure the value of health systems. *PLoS One* 2020;15:e0235531.
76. Cunningham FC, Ranmuthugala G, Westbrook JI, Braithwaite J. Tackling the wicked problem of health networks: the design of an evaluation framework. *BMJ Open* 2019;9:e024231.
77. Wurcel V, Cicchetti A, Garrison L, Kip MMA, Koffijberg H, Kolbe A, et al. The Value of Diagnostic Information in Personalised Healthcare: A Comprehensive Concept to Facilitate Bringing This Technology into Healthcare Systems. *Public Health Genomics* 2019;22:8-15.
78. Shaw J, Wong I, Griffin B, Robertson M, Bhatia RS. Principles for health system capacity planning: insights for healthcare leaders. *Healthc Q* 2017;19:17-22.
79. Scott IA. Is modern medicine at risk of losing the plot? *Med J Aust* 2006;185:213-6.
80. Robertson TM, Lofgren RP. Where population health misses the mark: breaking the 80/20 rule. *Acad Med* 2015;90:277-8.
81. Pisco L, Pinto LF. From Alma-Ata to Astana: the path of Primary Health Care in Portugal, 1978-2018 and the genesis of Family Medicine. *Cien Saude Colet* 2020;25:1197-204.
82. Jessup RL, O'Connor DA, Putrik P, Rischin K, Nezon J, Cyril S, et al. Alternative service models for delivery of healthcare services in high-income countries: a scoping review of systematic reviews. *BMJ Open* 2019;9:e024385.
83. Rudnicka E, Napierała P, Podfigurina A, Męczekalski B, Smolarczyk R, Grymowicz M. The World Health Organization (WHO) approach to healthy ageing. *Maturitas* 2020;139:6-11.
84. Quaglio G, Figueras J, Mantoan D, Dawood A, Karapiperis T, Costongs C, et al. An overview of future EU health systems. An insight into governance, primary care, data collection and citizens' participation. *J Public Health (Oxf)* 2018;40:891-8.
85. Knutson DJ. The role of strategic alliances in ensuring health care quality: a health care system perspective. *Clin Ther* 1997;19:1572-8.
86. Delgado P. Meeting the challenge of chronic conditions in a sustainable manner: building on the AHC learning. *Healthc Pap* 2016;15 Spec No:90-5; discussion 7-123.

- 1
2
3 87. Veillard J, Denny K. Transformation through clinical and social integration: meeting the
4 needs of high users of healthcare. *Healthc Pap* 2014;14:4-7.
- 5 88. Stoelwinder JU. Final report of the National Health and Hospitals Reform Commission: will
6 we get the health care governance reform we need? *Med J Aust* 2009;191:387-8.
- 7 89. Stoelwinder JU, Paolucci F. Sustaining Medicare through consumer choice of health funds:
8 lessons from the Netherlands. *Med J Aust* 2009;191:30-2.
- 9 90. Magnan S, Fisher E, Kindig D, Isham G, Wood D, Eustis M, et al. Achieving accountability for
10 health and health care. *Minn Med* 2012;95:37-9.
- 11 91. Armstrong BK, Gillespie JA, Leeder SR, Rubin GL, Russell LM. Challenges in health and health
12 care for Australia. *Med J Australia* 2007;187:485-9.
- 13 92. Ganann R, Peacock S, Garnett A, Northwood M, Hyde A, Bookey-Bassett S, et al. Capacity
14 development among academic trainees in community-based primary health care research: The
15 Aging, Community and Health Research Unit Experience. *Prim Health Care Res Dev* 2019;20:e139.
- 16 93. Al Dhawi AA, West DJ, Jr., Spinelli RJ, Gompf TA. The challenge of sustaining health care in
17 Oman. *Health Care Manag* 2007;26:19-30.
- 18 94. Thistlethwaite JE, Dunston R, Yassine T. The times are changing: workforce planning, new
19 health-care models and the need for interprofessional education in Australia. *J Interprof Care*
20 2019;33:361-8.
- 21 95. Dunn PM, Arnetz BB, Christensen JF, Homer L. Meeting the imperative to improve physician
22 well-being: assessment of an innovative program. *J Gen Intern Med* 2007;22:1544-52.
- 23 96. Woodward GL, Iverson A, Harvey R, Blake PG. Implementation of an agency to improve
24 chronic kidney disease care in Ontario: lessons learned by the Ontario Renal Network. *Healthc Q*
25 2015;17 Spec No:44-7.
- 26 97. Pencheon D. Making health care more sustainable: the case of the English NHS. *Public Health*
27 2015;129:1335-43.
- 28 98. Lewis S. Can a learning-disabled nation learn healthcare lessons from abroad? *Healthc Policy*
29 2007;3:19-28.
- 30 99. Edwards N, Rowan M, Marck P, Grinspun D. Understanding whole systems change in health
31 care: the case of nurse practitioners in Canada. *Policy Polit Nurs Pract* 2011;12:4-17.
- 32 100. Lozano I, Rondan J, Vegas JM, Segovia E. Sustainability of the health system: beyond cost-
33 effectiveness analyses. *Rev Esp Cardiol* 2016;69:880-1.
- 34 101. Farmanova E, Kirvan C, Verma J, Mukerji G, Akunov N, Phillips K, et al. Triple aim in Canada:
35 developing capacity to lead to better health, care and cost. *Int J Qual Health Care* 2016;28:830-7.
- 36 102. Iskrov G, Stefanov R, Ferrelli RM. Health systems for rare diseases: financial sustainability.
37 *Ann Ist Super Sanita* 2019;55:270-5.
- 38 103. Buttigieg SC, Schuetz M, Bezzina F. Value chains of public and private health-care services in
39 a small EU island state: a SWOT analysis. *Public Health Front* 2016;4:201.
- 40 104. Atmore C. The role of medical generalism in the New Zealand health system into the future.
41 *N Z Med J* 2015;128:50-5.
- 42 105. McGorry PD, Hamilton MP. Stepwise expansion of evidence-based care is needed for mental
43 health reform. *Med J Aust* 2016;204:351-3.
- 44 106. Ehrlich C, Kendall E. Integrating collaborative place-based health promotion coalitions into
45 existing health system structures: the experience from one Australian health coalition. *Int J Integr*
46 *Care* 2015;15:e047.
- 47 107. Levine S, O'Mahony S, Baron A, Ansari A, Deamant C, Frader J, et al. Training the workforce:
48 description of a longitudinal interdisciplinary education and mentoring program in palliative care. *J*
49 *Pain Symptom Manage* 2017;53:728-37.
- 50 108. Lega F, Prenestini A, Spurgeon P. Is management essential to improving the performance
51 and sustainability of health care systems and organizations? a systematic review and a roadmap for
52 future studies. *Value Health* 2013;16:S46-S51.
- 53
54
55
56
57
58
59
60

- 1
2
3 109. Wakerman J, Humphreys JS. Sustainable workforce and sustainable health systems for rural
4 and remote Australia. *Med J Aust* 2013;199:S14-7.
- 5 110. Wakerman J, Humphreys JS. Sustainable primary health care services in rural and remote
6 areas: innovation and evidence. *Aust J Rural Health* 2011;19:118-24.
- 7 111. Lehoux P, Roncarolo F, Silva HP, Boivin A, Denis JL, Hébert R. What Health System
8 Challenges Should Responsible Innovation in Health Address? Insights From an International
9 Scoping Review. *Int J Health Policy Manag* 2019;8:63-75.
- 10 112. Braithwaite J, Vincent C, Nicklin W, Amalberti R. Coping with more people with more illness.
11 Part 2: new generation of standards for enabling healthcare system transformation and
12 sustainability. *Int J Qual Health Care* 2019;31:159-63.
- 13 113. Tsisis P. Chronic disease management and the home-care alternative in Ontario, Canada.
14 *Health Serv Manage Res* 2009;22:136-9.
- 15 114. Niraula S. Strategizing health technology assessment for containment of cancer drug costs in
16 a universal health care system: Case of the pan-Canadian Oncology Drug Review. *Cancer*
17 2019;125:3100-3.
- 18 115. Bentley C, Peacock S, Abelson J, Burgess MM, Demers-Payette O, Longstaff H, et al.
19 Addressing the affordability of cancer drugs: using deliberative public engagement to inform health
20 policy. *Health Res Policy Syst* 2019;17:17.
- 21 116. Rosser M. Advancing health system integration through supply chain improvement. *Healthc*
22 *Q* 2006;9:62-6, 4.
- 23 117. Guyon A, Hancock T, Kirk M, MacDonald M, Neudorf C, Sutcliffe P, et al. The weakening of
24 public health: a threat to population health and health care system sustainability. *Can J Public Health*
25 2017;108:e1-e6.
- 26 118. Bessler JS, Ellies M. Values and value--a vision for the Australian health care system. *Aust*
27 *Health Rev* 1995;18:6-17; discussion 8-29.
- 28 119. Ferrelli RM, Fantini B, Taruscio D. Health systems sustainability for rare diseases. Preface.
29 *Ann Ist Super Sanita* 2019;55:249-50.
- 30 120. Bogaert P, van Oers H, Van Oyen H. Towards a sustainable EU health information system
31 infrastructure: A consensus driven approach. *Health Policy* 2018.
- 32 121. Fridell M, Edwin S, von Schreeb J, Saulnier DD. Health System Resilience: What Are We
33 Talking About? A Scoping Review Mapping Characteristics and Keywords. *Int J Health Policy Manag*
34 2020;9:6-16.
- 35 122. Casale CR, Clancy CM. Commentary: Not about us without us. *Acad Med* 2009;84:1333-5.
- 36 123. Nagle LM, Pitts BM. Citizen perspectives on the future of healthcare. *Healthc Q* 2012;15:40-5.
- 37 124. Schwann NM, Bretz KA, Eid S, Burger T, Fry D, Ackler F, et al. Point-of-care electronic
38 prompts: an effective means of increasing compliance, demonstrating quality, and improving
39 outcome. *Anesth Analg* 2011;113:869-76.
- 40 125. Huynh AK, Hamilton AB, Farmer MM, Bean-Mayberry B, Stirman SW, Moin T, et al. A
41 pragmatic approach to guide implementation evaluation research: strategy mapping for complex
42 interventions. *Public Health Front* 2018;6.
- 43 126. Kilbourne AM, Braganza MZ, Bowersox NW, Goodrich DE, Miake-Lye I, Floyd N, et al.
44 Research Lifecycle to Increase the Substantial Real-world Impact of Research: Accelerating
45 Innovations to Application. *Medical Care* 2019;57 Suppl 10 Suppl 3:S206-S12.
- 46 127. Greenhalgh T, Macfarlane F, Barton-Sweeney C, Woodard F. "If we build it, will it stay?" A
47 case study of the sustainability of whole-system change in London. *Milbank Q* 2012;90:516-47.
- 48 128. McVeigh J, MacLachlan M, Gilmore B, McClean C, Eide AH, Mannan H, et al. Promoting good
49 policy for leadership and governance of health related rehabilitation: a realist synthesis. *Glob Health*
50 2016;12:49.
- 51 129. De Santis M. Integrated care for healthcare sustainability for patients living with rare
52 diseases. *Ann Ist Super Sanita* 2019;55:276-82.
- 53
54
55
56
57
58
59
60

- 1
2
3 130. McIntosh E, Nagelkerk J, Vonderheid SC, Poole M, Dontje K, Pohl JM. Financially viable nurse-
4 managed centers. *Nurse Pract* 2003;28:40, 6-8, 51.
5 131. Wutzke S, Benton M, Verma R. Towards the implementation of large scale innovations in
6 complex health care systems: views of managers and frontline personnel. *BMC Res Notes*
7 2016;9:327.
8 132. Burgess LH, Cohen MR, Denham CR. A new leadership role for pharmacists: a prescription
9 for change. *J Patient Saf* 2010;6:31-7.
10 133. Hanney S, Kanya L, Pokhrel S, Jones T, Boaz A. WHO Health Evidence Network Synthesis
11 Reports. What is the evidence on policies, interventions and tools for establishing and/or
12 strengthening national health research systems and their effectiveness? Copenhagen: WHO Regional
13 Office for Europe; 2020.
14 134. Braithwaite J, Glaziou P, Westbrook J. The three numbers you need to know about
15 healthcare: the 60-30-10 Challenge. *BMC Med* 2020;18.
16 135. Braithwaite J, Churrua K, Long JC, Ellis LA, Herkes J. When complexity science meets
17 implementation science: a theoretical and empirical analysis of systems change. *BMC Med*
18 2018;16:63.
19 136. Bramesfeld A, Amaddeo F, Caldas-de-Almeida J, Cardoso G, Depaigne-Loth A, Derenne R, et
20 al. Monitoring mental healthcare on a system level: country profiles and status from EU countries.
21 *Health Policy* 2016;120:706-17.
22 137. Tricco AC, Ashoor HM, Cardoso R, MacDonald H, Cogo E, Kastner M, et al. Sustainability of
23 knowledge translation interventions in healthcare decision-making: a scoping review. *Implement Sci*
24 2016;11:55.
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

Figure titles legends and footnotes

FIGURE 1.

Title:

Figure 1. PRISMA flow diagram summarising the review and reasons for article exclusion*

Footnotes:

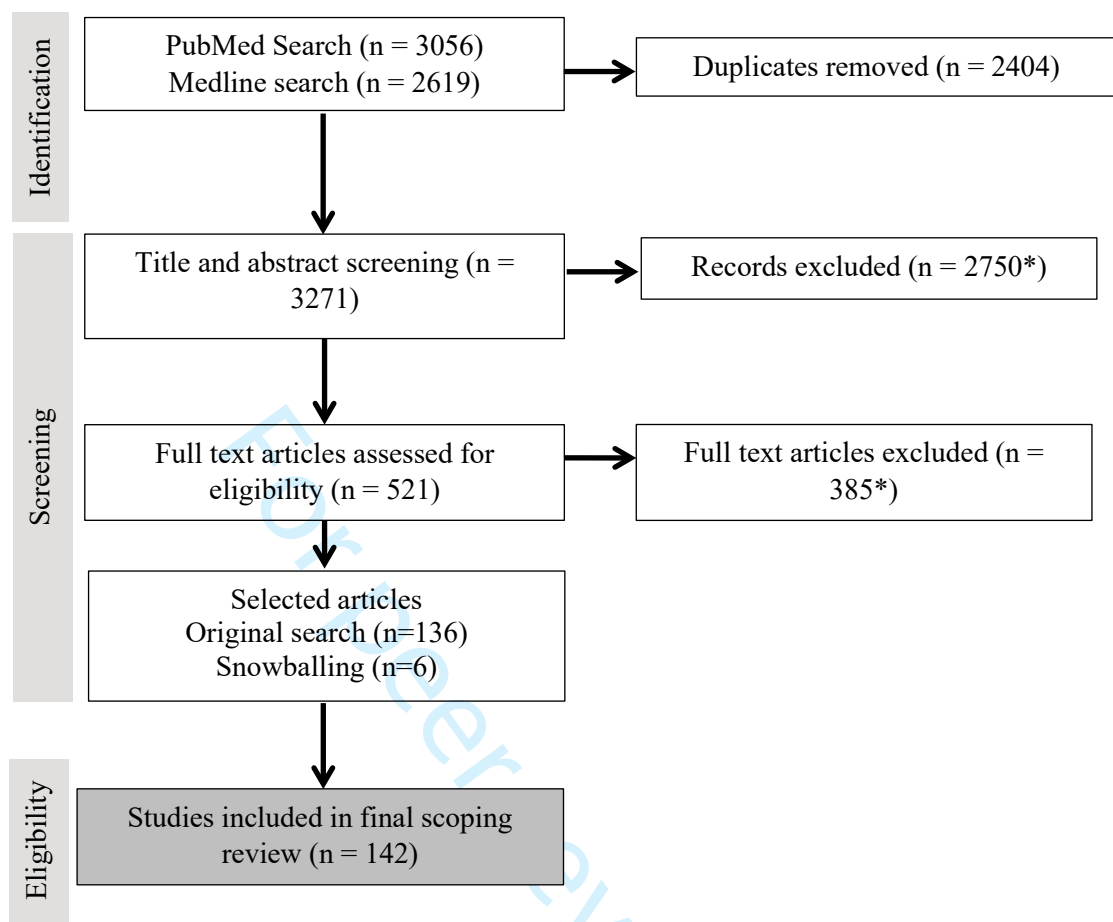
*Full text articles and snowballed articles excluded for the following reasons. Note that some articles were excluded for multiple reasons. Reasons for article exclusion are below:

Reason	Excluded at title/abstract screening (N)	Excluded at full text review (N)
Disaster or emergency	199	3
Foreign aid, equity, or community healthcare	598	20
Occupational health and safety	69	2
Environmental sustainability	89	5
Not relevant to Australia e.g. low-resource setting	730	82
Not about systems e.g., single disease or program	1291	109
Preventative e.g., regarding vaccination or nutrition	277	18
Not relating to healthcare delivery e.g., regarding animal care or food safety	46	0
Regarding physiology/pharmacology	44	0
Does not in another way define, measure, identify challenges, opportunities for improvement or scale up of sustainability in the healthcare system	398	166
Other e.g., article not written in English, full text not available	4	95

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60



1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

HOW CAN THE HEALTHCARE SYSTEM DELIVER SUSTAINABLE PERFORMANCE? A SCOPING REVIEW

ADDITIONAL FILE 1: SEARCH STRATEGY

	PubMed	Ovid Medline
	((sustainab*[Title/Abstract]) OR resilien*[Title/Abstract]) AND (((("health system*" [Title/Abstract]) OR "health system* performance" [Title/Abstract]) OR "health system* improvement" [Title/Abstract])	"health system* performance" "health system* improvement" (health adj3 system) 1 OR 2 OR 3 (sustainab* OR resilience*) 4 AND 5
Additional Limits	English Language	English Language
Yield	3056 articles	2619 articles

1136/bmjopen-2024-059207 on 24 May 2022
Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

**HOW CAN THE HEALTHCARE SYSTEM DELIVER SUSTAINABLE PERFORMANCE?
A SCOPING REVIEW**

ADDITIONAL FILE 2: SUMMARY OF INCLUDED PAPERS

Summary of included studies in scoping review and reasons for inclusion

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
Al Dhawi AA, West DJ, Jr., Spinelli RJ, Gompf TA. 2007	2007	Oman	ED			Increased consumer expectations, increased medication costs, and resource constraints	The environment financial sustainability, institutional sustainability, demand sustainability	The need to examine the entire system: social, economic, and environmental determinants of health to sustain changes in the health system	
Amalberti , R., W. Nicklin, and J. Braithwait e. 2016.	2016	Worldwide	ED			Ageing population, patients with comorbidities, and expensive health conditions to treat			
Ament SMC,	2014	Netherlands	EM					The importance of internal	

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
Gillissen F, Moser A, Maessen JMC, Dirksen CD, von Meyenfeldt MF, et al. 2014								auditing and feedback of outcomes, (e.g., reminders and meetings), changing organisational structure	
Armstrong BK, Gillespie JA, Leeder SR, Rubin GL, Russell LM. 2007	2007	Australia	ED			1. Demography of disease and ageing population; 2. Increasing medical cost; 3. Health workforce supply and distribution; 4. Problems with the quality and safety; 5. Balancing private and public health; 6. Recognition in the importance	Solutions must include elements of prevention, and primary and acute rehabilitation services		

1136/bmjopen-2024-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2022-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
						of investing in the health of the next generation; 7. Urban planning for sustainable communities; 8. Inequity in health			
Atmore C. 2015	2015	New Zealand	ED			Doctors are becoming more specialised, but needs to become more generalist to look after the whole person	Transalpine service model (developed in a rural NZ hospital) provides options for sustainable healthcare in the future		
Barasa EW, Cloete K, Gilson L. 2017	2017	Worldwide	ED	Resilience is an important quality for creative adaptation		The challenge of thinking of everyday resilience rather than just crises			
Bessler JS, Ellies M. 1995	1995	Australia	ED			Admissions rise, and doctors are using technology more regularly. Public	Need to decrease the number of beds in the public hospitals (as 15% of inpatients should not be,		

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
						expenditure on healthcare has remained 'flat' but private healthcare premiums continue to escalate	according to research), increase continuity of patient care (termed 'integrated networks'), and have less of a divide between state and federal health systems		
Birch S, Murphy GT, MacKenzie A, Cumming J. 2015	2015	Worldwide	ED		Healthcare sustainability framework (HCSF), showing the relationship between expenditure levels, the determinants of expenditure, revenues to support the healthcare system, and	The unintended consequences of redistributing cost of care and responding to the needs of the population e.g., redistributes what socio-economic groups use healthcare	Sustainability frameworks should consider the needs and trends of the population, the work force, financial and service information		

1136/bmjopen-2022-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2022-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
					their relationship to fiscal and political sustainability				
Braithwaite, J., D. Marks, and N. Taylor. 2014	2014	Australia	RA	Sustainability defined as the mid-to-long-term acceptance of a program		Looks at the need to improve implementation science, leading to sustainability	Sustainability was one of eight key factors in implementing changes in the health system	Sustainability needs to be considered from the inception of change programs and projects, and there needs to be commitment at a managerial level	
Bramesfeld, A., F. Amaddeo, J. Caldas-de-Almeida, G. Cardoso, A. Depaigne-Loth, R. Derenne,	2016	European Union Countries	EM		Measure and compare different countries using the QMP-MHC scale	Recognises the challenge of bridging policy and practice			

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
V. Donisi et al. 2016.									
Buchan J. 2004.	2004	Worldwide	ED	Argues that a HR policy is central to any sustainable health system performance changes	Must be sector specific measures e.g., staff per occupied bed, patient acuity measures	The lack of consistent human resource management (HRM), as well as lack of being able to fit HRM to organisational characteristics, context and priorities, and link this to sustainable improvements. No single intervention is likely to be effective in all contexts.		There is low take-up of HRM interventions	
Buchan JM, Naccarella L, Brooks PM. 2011	2011	Australia and New Zealand	ED	The ability for Australia and New Zealand to train enough	Measurement is limited, e.g., can see if healthcare staff have	Brings into question attitudes of the country towards skilled			

1136/bmjopen-2022-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 25, 2024 by guest. Protected by copyright.

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
				health staff to fill the positions for their front-line health staff to reduce the reliance on international recruitment	received a qualification from a country outside Australia, but not how long they have been working in Australia	personnel, immigration, funding of the education sector to train new health personnel (and the time commitment to train new health professionals must also be considered, as must the benefits of overseas personnel for national policy makers)			
Burgess LH, Cohen MR, Denham CR. 2010	2010	Worldwide	ED			Minimizing adverse drug events (ADEs) (and therefore readmissions) by having pharmacist leaders	Pharmacists need to become leaders to change hospital organisational and safety culture, working within an interdisciplinary team to ensure	Pharmacists should be involved in medication counselling during the discharge process, and follow-up after the transition to	

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2022-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
							medication and medication issues are managed appropriately. Should also establish a medication review board to investigate near misses, being engaged in teamwork and communication, helping implement computerized systems, and being involved in patient training for discharge	home after hospital discharge	
Buttigieg SC, Schuetz M, Bezzina F. 2016	2016	Malta	EM			The need for public and private hospital services to work together to solve complex healthcare problems and	Collaboration between private and public sectors may involve: 1. regulated semi-competitive health model, whereby the		

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2024-059207 on 24 May 2024. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
						benefit both entities	government sets costs (e.g., for specific tests) and citizens are encouraged to invest in private health insurance 2. Public-private mix model, which makes care more comprehensive and complete; or 3. Public-private partnerships (PPPs)		
Buykx P, Humphreys JS, Tham R, et al. 2012	2012	Australia	EM	Providing appropriate and cost-effective care in a way that persists in or can adapt to environment. Should also positively influence the broader		In rural health services, sustainability is threatened by small population size and lack of economy of scale, poorly management structures, low socioeconomic		Rural health services are enabled by supportive policy and state and federal support	

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
				sustainability of the wider community		groups, and geographic isolation			
Casale CR, Clancy CM. 2009	2009	United States of America	ED				Improving equity in health through community-based participatory research (CBPR). A component of this research is to plan for long-term process and commitment		
Cashin A. 2015	2015	Australia	ED	A health system must address all aspects of its sustainability , including financial, social and political elements		Being unsure if future conservative governments could threaten universal healthcare, and encouraging nurse innovation in Australia		Issue of encouraging government support that will be politically costly in the short-term, but beneficial in the long term	

1136/bmjopen-2022-059207 on 24 May 2022 Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2022-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
Chambers DA, Glasgow RE, Stange KC. 2013	2013	Worldwide	ED	The continued positive effects of the intervention after the external funding have ended. This is expected to be constantly evaluated, developed and improved	The dynamic sustainability framework (DSF) was created to investigate the fit between the intervention, the practice setting, and the ecological system	Two assumptions of sustaining interventions are challenged: 1. 'voltage drop' where interventions yield lower benefits as they are put into practice outside a laboratory setting; and 2. 'program drift' where programs become less effective due to changes in protocol as it is delivered	Ensure focus on sustainability from the beginning of implementation of the intervention, rather than post-implementation. The setting for the intervention is also important e.g., it should focus on organisational learning, stakeholders should be involved		
Cho CC, Ramanan RA, Feldman MD. 2011	2011	United States of America	EM		Used analysis of nomination letters for mentor awards to analyse what it is to be a good mentor		Through mentor being role models and legacies for the future		

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
Coiera E, Hovenga EJ. 2007	2007	Worldwide	ED	Health systems need to be adaptable to changing contexts and strive to be environmentally sustainable	Making it easier to measure sustainability through increasing transparency in work processes	Financial challenges of healthcare costing more than expected, treating higher volumes of patients with more comorbidities and higher expectations of care, and workforce shortages	Digitisation to cut costs e.g., telemedicine to reduce travel time		
Crisp N. 2017	2017	United Kingdom	ED	Internal factors (1. efficiency & effectiveness of healthcare provision, 2. availability of well-trained health staff, 3. cost); external (4. population		Long term chronic conditions, especially the growing population of elderly with needs for community care		The need of the health and care system to be strengthened by support from communities and multi-sectorial partners	

1136/bmjopen-2022-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

1136/bmjopen-2022-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
				health, 5. contribution of carers and informal networks of care, 6. integration of policies and practices), and overall (7. public and political acceptability and support)					
De Rosis S, Nuti S. 2018	2018	Italy	EM			Lack of a national or regional office responsible for project coordination. Longer-term financial investment is needed			
Delgado, P. 2016	2016	Canada	ED			Quality improvement collaborative systems did not			

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
						improve the sustainability of participating health systems in the treatment and management of chronic diseases			
Dhalla I. 2007	2007	Canada	ED		The article speculates that it may be better to assess healthcare as a proportion of GDP rather than a proportion of Government spending	Politicians are recognising that the 'status quo' may not be sustainable due to system demands. This often assumes tax is static or declining, but this is open to debate and interpretation		Increasing spending on healthcare can occur as long as it does not impinge upon spending on non-health goods and services	
Dunn, P. M., B. B. Arnetz, J. F. Christensen, and L.	2007	United States of America	EM				Through a program in which leadership and physicians themselves recognised physician		

1136/bmjopen-2022-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

1136/bmjopen-2024-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
Homer. 2007							wellbeing as important, and this well-being was measured		
Edwards, N., M. Rowan, P. Marck, and D. Grinspun. 2011	2011	Canada	RA			"Blockages" in the system e.g., power relationships, or unintentional blockages to innovation	Through the use of "leverage point" strategies such as structure by which to organise the system	Identified leverage points and blockages in macro- and micro-levels based on the literature review	
Ehrlich C, Kendall E. 2015	2015	Australia	EM			Participants identified that, should funding cease, the program would not be sustained. This was attributed to limitations in program planning			
Ellner, A. L., S. Stout, E. E. Sullivan, E. P.	2015	Worldwide	ED			Recognises a lack of traditional metrics to measure health system			

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
Griffiths, A. Mountjoy, and R. S. Phillips. 2015						improvement or sustainability			
Farmanova E, Kirvan C, Verma J, et al. 2016	2016	Canada	EM			Lack of leadership support, difficulty creating partnerships, communicating with and engaging with staff and physicians, struggling with funding models that perpetuate working in silos, insufficient time and resources, difficulty obtaining data, data management	Start small, but think big; work toward incremental development; select a portfolio of projects that are manageable and align with Triple aim dimensions; include partners at the outset; strategize and build multidisciplinary teams and leverage existing capabilities; do not make assumptions		

1136/bmjopen-2024-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2022-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
						and measurement, scoping improvement projects, ensuring sustainability	about patients/clients		
Fineberg HV. 2012	2012	United States of America	ED	Affordability (for individuals, organisations and the government), acceptability to key constituents, and adaptability			Increased use of IT, re-doubling the efforts to enhance quality and safety in medical care, improving healthcare of high-need patients in a way that prevents hospitalisations, honour patient preferences, rely on systems engineering and operations research to smooth the patient journey through the		

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
							health system, learn from peers and from evidence, and champion a system that values accountability		
Foo, C. Y., K. K. Lim, S. Sivasambu, K. B. Dahian, and P. P. Goh. 2015.	2015	Malaysia	EM		Measurement using data envelopment analysis (DEA) overtime to measure efficiency				
Fox, L. A., K. E. Walsh, and E. G. Schainker. 2016	2016	United States of America	EM		Measured group sustainability through staff turnover rate				
Garde S, Hullin CM, Chen R, et al. 2007	2007	Worldwide	RA	Argues that linking the health system sustainability	There is a lack of qualitative indicators for sustainability. Suggestions of	There are technological (e.g., making programs that can be flexible			

1136/bmjopen-2022-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
				and health information systems is important, but recognises that there is no suitable and all-encompassing definition of sustainability in relation to healthcare.	measuring sustainability by the eMergy (embodied energy) sustainability index	and adapt to context changes), socio-political and organizational (e.g., needing drivers behind interventions) issues/barriers			
Global, regional, and national disability-adjusted life-years (DALYs) 2017	2017	Worldwide	EM		Used information previously gathered to make decisions regarding healthy life expectancy and risk-adjusted life expectancy		Formulation of sustainable development goals (SDGs)		

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
Greenhalgh, T., F. Macfarlane, C. Barton-Sweeney, and F. Woodard. 2012	2012	United Kingdom	ED		Case study: three-year follow-up of a healthcare program in London that underwent changes in terms of policy and economics		Some services changed over the three years and were altered relating to changes that happened with time e.g., national policy changes	Some interventions were sustained but looked different to the original intervention, due to it being adapted through the three years	
Gruen RL, Elliott JH, Nolan ML, Lawton PD, Parkhill A, McLaren CJ, Lavis JN. 2008	2008	Worldwide	RA	Sustainability after an initial implementation period when funding ceases is difficult				Targets of interventions to improve sustainability included the individual (e.g., through education), organisation (e.g., changes to policy), community (e.g., social actions) and system levels (e.g. social advocacy)	

1136/bmjopen-2024-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 24, 2024 by guest. Protected by copyright.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
Guyon A, Hancock T, Kirk M, et al. 2017	2017	Canada	ED				Recognising the importance of governments and the health system providing fund and support for public health, as it delivers important information for the health system to thrive		
Heron, N. 2015	2015	North Ireland	EM				Measure the effect of an intervention for management of musculoskeletal complaints in GP		
Hibbert PD, Thomas MJW, Deakin A, et al. 2018	2018	Australia	EM			When there is an adverse event (AE) resulting in a root cause analysis (RCA), there are barely ever (5% of the time) provided strong	Observations and patient and carer interviews and review of notes may be useful in gaining a better understanding of adverse event situations		

1136/bmjopen-2024-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
						recommendations for altering and improving the health system. 86% of the recommendations were considered 'weak'			
Hovenga EJ. 2013	2013	Worldwide	ED	Where everyone can access safe and correct health services to achieve the best outcomes possible			Four main outcomes or goals: improved health, responsiveness, financial risk protection, and improved efficiency	Information technology (IT) has a role to play in creating sustainable health systems (as it can lead to decisions having better clinical outcomes and lower costs)	
Inotai A, Petrova G, Vitezic D, Kalo Z. 2014	2014	Central-Eastern European Countries	ED	Focus on financial sustainability	Measure the potential innovation by new drugs in terms of		Goal of innovative pharmaceutical companies is to provide health gain, equity in		

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2024-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
					monetary value		health, responsiveness of patients with complex comorbidities. To create this financial sustainability, affordable new innovative treatments and political sustainability are necessary		
Kepros JP, Opreanu RC. 2009	2009	United States of America	ED		Measuring the financial and social output of an organisation		Requires optimal relationships and synergy between the hospital, medical school and physicians, each with their own core competencies		
Kerr R, Hendrie DV. 2018	2018	Australia	EM	Two meanings: 1) financial sustainability for		To effectively fund patient access to hospital care in a system where			

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2022-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
				governments and health services; 2) environmental sustainability		capital allocation is not funded based on patient-centredness			
Knutson, D. J. 1997	1997	United States of America	ED		The issue of measurement after the funding period was terminated	Limitations in current models of chronic illness management, and the difference between thinking about and the reality of how clinical work occurs	Recognises important components of models for critical care: should be patient centred, have a critical illness management model, be conscious of minimising patient out-of-pocket expenses, consulting with the organisation, and recognising the link between clinical and research outcomes		

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2024-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
Lega, F., Prenestini, A., Spurgeon, P. 2013	2013	Worldwide	RA		Thirty-seven studies in a systematic review (both qualitative and quantitative were involved, and some had causal relationship analysis)	Rising costs, economic crises and ageing population	Recognise that the performance of healthcare organisations is correlated to management practices, leadership, engagement with professionals, management characteristics (e.g., training [doctors as managers are beneficial], background, career history), and organisational culture and management status. New technologies are also useful	Medical engagement is linked to better patient mortality rates, decreased serious incidents, maintains high levels of patient care	
Lehoux P, Williams-Jones B,	2008	Worldwide	ED	Recognising the importance					

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
Miller F, Urbach D, Tailliez S. 2008				of being sustainable overtime, rather than creating for short-term gain					
L, Goeree R, Levine M, et al. 2011	2011	Canada	RA		When post-drug interventions are being used clinically, there should be field evaluation studies conducted to ensure the efficacy and cost effectiveness of the intervention		Coverage with evidence development (CED) is necessary, not to replace RCTs, but to gain the next level of knowledge about that intervention in clinical practice. It will also increase inter-disciplinary collaboration		
Levine, S., S. O'Mahony, A. Baron, A.	2017	United States of America	EM				Interventions to improve palliative care (PC) in paediatric hospitals, and to		

1136/bmjopen-2022-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2022-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
Ansari, C. Deamant, J. Frader, I. Leyva, M. Marschke, and M. Preodor. 2017							improve physician self-care		
Lewis S. 2007	2007	Canada	ED			Financial, ageing population, concern over the proportion of government spending used on healthcare	The challenge of learning from other countries, and recognising the context specific elements of the systems they have enforced, and appropriately contextualising to the Canadian context e.g., Europe pays doctors less than Canada, utilises more home care	Believes sustainability should not be the focus, but rather quality improvement, aligning incentives with goals, making excellence mandatory and reducing health disparities should be the goal for at least the next five years	
Liaropoul os L,	2015	Worldwi de	ED			Ageing population, the			It was suggest

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
Goranitis I. 2015						financial stress placed on healthcare systems, and the question of who is to pay for this increased cost? (e.g., does retirement age remain the same or rise?)			ed that taxation should be a focus to contribute to healthcare
Lizarondo, L., C. Turnbull, T. Kroon, K. Grimmer, A. Bell, S. Kumar, M. McEvoy et al. 2016	2016	Australia	EM		Using survey of Scott's 10 strategies for sustaining change in the health system		Allied health respondents recognised that low- or no-impact interventions that cause little improvement or cause harm could be minimised, and by selecting care responses for comparative effectiveness		
Lozano I, Rondan J, Vegas JM,	2016	Spain	ED			Funding and support for ongoing professional			

1136/bmjopen-2023-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 29, 2024 by guest. Protected by copyright.

1136/bmjopen-2022-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
Segovia E. 2016						learning, recognising differences in health structures between countries to understand how recommendations are transferrable			
Mackenzie J. 2011	2011	United Kingdom	ED	Sustainable development meets the needs of the present whilst ensuring future needs can be met		The challenge of getting the balance between environmental, social and economic sustainability right, and considering how these factors interact	Need to take a systems view of managing system risk, ensuring a more sustainable business system, and being strategic in the long term rather than focusing on short term gains		
Magnan S, Fisher E, Kindig D, et al. 2012	2012	United States of America	ED			There are very few or no direct links between investing healthcare and establishing the social	The development of "health outcomes trust" organisations and accountable care organisations (ACOs) to work		

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
						determinants of health, and there is little communication between stakeholders in these different camps. Rising healthcare costs are also a concern	to fulfil the triple aim and have sustainable funding. Community goal setting could also help to pay for population health		
McGorry PD, Hamilton MP. 2016	2016	Australia	ED			The challenges of implementing effective mental health reforms, including allowing access to early intervention with government funding, and funding with the NDIS for more complex cases	E-health giving the opportunity for a complementary role at all stages of illness, and the importance of research and evaluation in creating the most cost-effective solutions		
McGrath, S. P., and	2015	United Kingdom	EM		Dartmouth-Hitchcock		The define-measure-analyse	The last phase, 'control'	

1136/bmjopen-2022-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2024-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
G. T. Blike. 2015					Value Institute Experience		improve-control framework was developed to allow a problem-solving approach to challenges	promotes the changes to be sustained through time	
McIntosh E, Nagelkerk J, Vonderheid SC, Poole M, Dontje K, Pohl JM. 2003	2003	United States of America	ED			Recognition that nurse-managed centres often do not receive the necessary financial support for their centres to be continued	A financial advisory committee (FAC) could help improve financial outcomes in these centres	The FAC had meetings over three years and developed financial skills of the individuals	
McVeigh J, MacLachlan M, Gilmore B, et al. 2016	2016	Worldwide	RA, EM					Participation of people with disabilities (service users) in policy development and the governance of that service to improve sustainability. Additionally,	

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
								aligning or integrating new models of care with existing models can strengthen program delivery and implementation of policies for rehabilitation. Support from professionals in the field and stakeholders is also beneficial for sustainability	
Molfenter, T., D. Gustafson, C. Kilo, A. Bhattacharya, and J. Olsson. 2005.	2005	United States of America	EM		Measure the self-reported and faculty-reported the success and sustenance of changes to their organisation	The model used was not able to predict sustainability of interventions or programs, but this may be due to the time period or the			

1136/bmjopen-2024-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2022-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
						sustainability of the measure			
Nagle LM, Pitts BM. 2012	2012	Canada	ED				Recommendations: raise public awareness of services available, improve access to primary healthcare, empower patients about their care, use incentives to encourage serving in underserved areas, create an integrated health record service, devise alternatives to the fee-for-service model, increase funding for community services, give health professionals		

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
							communication and language training, emphasise healthy lifestyles ensure pharmaceuticals are affordable, decrease wait time and increase access for services for mental illness		
Pacifico Silva H, Lehoux P, Miller FA, Denis JL. 2018	2018	Worldwide	ED		Development of the responsible innovations for health (RIH) framework which identifies interventions that respond to the context and support equitable and sustainable	Ensuring Responsible Innovations in Health (RIH), involving consideration of sustainability and equity challenges			

1136/bmjopen-2022-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2022-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
					health service. It includes 5 domains: 1. population health; 2. health system; 3. Economic; 4. organisational; and 5. environmental				
Pencheon D. 2013	2013	England	ED		Measuring preventable illness and unplanned hospital admissions as system failures until proven otherwise	Understanding the changing needs (demographic, social, cultural) of the changing population; understanding how the rapid growth of science and technology can change outcomes; the need for public	Utilising technology to promote sustainable and personalised healthcare, and improving the prevention of illness rather than treating the illness once it arises e.g., increasing physical activity		

For peer review only - <http://bmjopen.bmj.com/site/about/guidelines.xhtml>

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
						services to act within environmental boundaries and increased levels of scrutiny			
Peric, N., M. M. Hofmarcher-Holzhaecker, and J. Simon. 2017.	2017	European Union Countries	RA		Does not answer how we measure sustainability but the methods or 'actors and actions' by which sustainable health system performance is assessed				
Pronovost, P. J., C. G. Holzmueller, T. Callender, R. Demski, L.	2016	United States of America	ED		Measuring performance of the Johns Hopkins Hospital (JHH) over a number of years compared to		Phase 3 of the program involves a peer education program for health professionals		

1136/bmjopen-2022-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
Winner, R. Day, J. M. Austin, S. M. Berenholtz, and M. R. Miller. 2016					national guidelines				
Rees, G. H. 2014.	2014	United States of America, United Kingdom, Australia	EM	"Implementation to effect continuous improvement, by either setting a cycle or programming for the next unit on the patient journey to undertake Lean activities"					
Robertson J, Walkom	2011	Australia	EM		Surveyed both GPs, specialists, and consumers	Both doctors and consumers recognise the rising cost of			

For peer review only

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
EJ, Henry DA. 2011					(patients) in the health system, and asked them to identify the potential problems in the system	healthcare, but doctors are less concerned than consumers regarding the sustainability of the health system			
Robertson TM, Lofgren RP. 2015	2015	United States of America	ED			A large percentage (80%) of health spending is spent on a small proportion (20%) of the population due to complex episodes of care. The challenge is therefore to learn to address these in a more cost-effective manner, but this poses difficulties e.g., it is hard to		"The national health care agenda has been heavily influenced by the assumptions that disease prevention and the general promotion of "population health" will be sufficient to reduce health care spending to a sustainable level."	

1136/bmjopen-2022-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

1136/bmjopen-2022-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
						decrease costs through conducting outpatient clinics			
Rosenberg-Yunger ZR, Daar AS, Singer PA, Martin DK. 2008	2008	Canada	ED	Sustainability of the health system “means ensuring that sufficient resources are available over the long term to provide timely access to quality services that address Canadians’ evolving health needs.”		The rising cost of pharmaceuticals and biopharmaceuticals, the complicated process by which drugs get approved for funding and use in developed countries, and the time-consuming alternatives (e.g., the Special Access Program in Canada). This leads to moral questions about the legitimacy	A mechanism to involve more stakeholders in the discussion		

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
						and fairness of applying for drugs, especially new and expensive biopharmaceuticals			
Rosser, M. 2006	2006	Canada	ED				The Healthcare Materials Management Services (HMMS) created in 1997 and its success hinged on the collaboration between the hospitals involved	Sustaining change is thought to be attributed to executive funding, leadership, collaboration, openness of providers to the process, support of front-line clinical leaders, and development of a unique entity with its own culture	
Scheirer MA. 2005	2005	United States of America	RA	Sustaining a program or initiative that	Sustainability can fall into 3 measures: 1.	Challenge of funding only for short periods (3-		The authors suggest that the expectation that	

1136/bmjopen-2024-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2022-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
				had previously been developed and maintained after the initial funding period or other impetus had ended	health benefits continue post-funding (individual level outcomes); 2. continuation of program activities post-intervention (organisation level outcomes); 3. relates to changes in community capacity to promote health post-intervention/funding (community level outcomes)	5 years) and the subsequent need to source funding. Also challenging is the uniqueness of context, whereby each project is influenced by its context and what programs or activities have preceded it		a new project will be sustainable after a 3-year funding project may be overly optimistic (therefore that it is hard to find funding opportunities after that time)	
Schwann, N. M., K. A. Bretz, S. Eid, T.	2011	United States of America	EM				Decrease hospital-acquired infections through point-of-	Sustaining changes from an intervention	

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
Burger, D. Fry, F. Ackler, P. Evans et al. 2011.							care electronic prompts (POCEPs)	over a two-year period	
Scott IA. 2006	2006	Australia	ED			Baby boomers getting older with comorbidities and decreased quality of life, the 'worried well', new technologies, the demand for new and further treatments, the influence of the media (e.g., "miracle cures"), juggling a finite health budget, threats of global warming, and deciding which treatments	Training patients with counselling and behavioural strategies to take more control over their own care, encouraging non-traditional caregivers to do some forms of care if found to be equally effective	Abolishing state and federal boundaries in funding and creating a new federal system, having each patient with a GP responsible for their care, linking healthcare databases with a unique patient identifier	

1136/bmjopen-2024-059207 on 24 May 2022. Downloaded from <https://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

1136/bmjopen-2022-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
						should be subsidised			
Sepehri A, Chernomas R. 2004	2004	Canada	ED	Acknowledges that different fields have different definitions of sustainability, and that these definitions tend to focus on resources and the capacity of the public sector to finance current and future health expenditure	Fiscal sustainability has been measured through the percentage of provincial and territorial budget allocation for healthcare, but this acts on two assumptions. 1) providers are assumed to respond to needs, and 2) the needs are assumed to reflect the current state of medical knowledge	Threat to sustainability is the uncertainty of government funding			

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
Shaw J, Wong I, Griffin B, Robertson M, Bhatia RS. 2017	2017	Canada	EM			"Increasingly complex patient population"	Emphasis must be placed on sustainability in order to protect the universal public healthcare system. "Need for comprehensive health system planning"		
Shigayeva A, Coker RJ. 2015	2015	Worldwide	ED	Sustainability is the system's resilience. From a public health perspective, sustainability is defined in relation to whether the benefit to stakeholders is sustained overtime. Financial sustainability and being	Several frameworks have been suggested, which measure determinants or dimensions of sustainability. They mostly do not consider efficiency, which is an important component of sustainability. Underrepresent		Five programmatic components in disease control programs that are important for sustainability: leadership, capacity, interactions (notions of integration), flexibility/adaptability and performance		

1136/bmjopen-2023-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

1136/bmjopen-2022-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
				responsive to the consumer wishes are also important	ted field: of 108 studies in systematic review, only two looked at SPHS (Lafond 1995a; Pammolli et al.)				
Solon, O., K. Woo, S. A. Quimbo, R. Shimkhada, J. Florentino, and J. W. Peabody. 2009.	2009	Philippines	EM		Developed Q* to measure quality of hospital performance across a range of facilities				
Sonnenreich P, Geisler L. 2016	2016	United States of America	ED		Financial issues of rising healthcare costs and decreasing affordability	Financial unsustainability in the system, (e.g., that 30% of healthcare spending is wasteful) and	The initiation of value-based formulary in pharmacies		

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2022-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
						trying to balance this with allowing patients to access new expensive medicines. But a new way to look at it would be to analyse the <i>value</i> of the drug. There is also a problem with patient adherence to medications, especially when they have a higher expense			
Stockdale, S. E., J. Zuchowski, L. V. Rubenstein, N. Sapir, E. M. Yano, L.	2018	United States of America	EM		Through interview analysis	Barriers to sustained improvement included a lack of collaborative working between local practice leaders; another	Through the introduction of quality care councils and an evidence-based quality-improvement project aimed at improving	Assessed project completion and spread and found it was important to have mechanisms by which to hold	

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2024-059207 on 24 May 2024. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
Altman, J. J. Fickel, S. McDougall, T. Dresselhaus, and A. B. Hamilton. 2016						challenge is balancing time that could be spent on patients to be attributed to the 'extra work' of the project	disciplinary leadership, aligning frontline improvement innovation and assessing implementation designs	frontline innovations would be suitable for spread (but does not research the impact of this)	
Stoelwinder JU, Paolucci F. 2009	2009	Netherlands	ED			Growth rate of the Australian health system is financially unsustainable, with the Australian Medical Association, as well as state governments, lobbying for more funding. It is also likely that there will be significant resistance by stakeholders	Being inspired by the Netherlands new system of health reform, including policy objectives of durability (sustainability), solidarity (equity), choice, quality and efficiency. Additionally, there are tools to keep citizens engaged in their healthcare decisions,		

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
						when there is suggestion of Australian health system reform	including the choice of 15 health insurance providers. To avoid insurers seeking out low-risk clients, there has been a complex risk-equalisation scheme put in place		
Stoelwind er JU. 2009	2009	Australia	ED			The need to address both financial and political sustainability in the health system (e.g., with rising healthcare costs, and the political structures to deal with tax payment rather than consumer payment for the health system)	Governance needs to be established for the "healthy Australia accord", the federal government should progressively take over funding responsibilities for Medicare, and a funding model called "Medicare select" should be		

1136/bmjopen-2024-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2023-059207 on 24 May 2023. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
							established whereby public and private health models compete to allow consumer choice		
Stuart N, Adams J. 2007	2007	Canada	ED		Cost of healthcare that outpaces economic growth, and a way of conceptualising this is in a comparison to Maslow's hierarchy of needs, with different levels of health need (but this adds to questions of how health need and benefit are defined)	Spending on healthcare is being pushed to unsustainable levels meaning that, in order to be sustained, spending must be taken away from other areas e.g., education, infrastructure; or increase revenue; or decrease cost of healthcare			
Taylor M. 2007	2007	Australia	ED				The expansion and development		

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
							of the role of nurse practitioners (NPs) e.g. By improving access to healthcare in remote and rural Australia		
Thompson RE. 1998	1998	United States of America	ED	Sustainability defined as meeting the needs of the present whilst guarding resources for future generations		Financial and moral factors that influence physician decisions, which have ultimately been influenced by politics and laws		"Managed care" needs to mature and evolve through supporting teaching, research, patient care and care for their staff	
Tricco, A. C., H. M. Ashoor, R. Cardoso, H. MacDonal d, E. Cogo, M. Kastner,	2016	Canada	RA		Scoping review to see what knowledge could be gained from studies aiming to use knowledge translation to			Specifically examined articles that had follow-up one or more years after the initial test, or continued beyond the funding period	

1136/bmjopen-2024-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

1136/bmjopen-2022-059207 on 24 May 2022. Downloaded from <https://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
L. Perrier, A. McKibbin, J. M. Grimshaw, and S. E. Straus. 2016.					improve health of patients managing chronic diseases				
Tsasis P. 2009	2009	Canada	ED				The potential of improving access to home care for older patients with one or more chronic illnesses through improving funding for these programs. Additionally, interdisciplinary teamwork and having a patient-centred approach to care has the potential to improve health system sustainability by		

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
							minimising drug interactions and conflicting advice given to patients		
Van de Pas R, Hill PS, Hammonds R, et al. 2017	2017	Worldwide	ED			The current sustainable development goals (SDGs) are superficial, and more political debate on structure, policy and agency are needed to bridge the gap and overcome existing health injustices. Also noted that many of the SDGs, although not specifically health related, have impacts on health		Stewardship embodying the establishment of norms, values and rules to guide policy development and advocacy for global health across sectors. Also recognised as important is the production of global public goods, the mobilization of global solidarity and the management of externalities e.g., governments, states or	

1136/bmjopen-2024-059207 on 24 May 2024. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2024-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
								transnational bodies	
Veillard J, Denny K. 2014	2014	Canada	ED			The majority of healthcare spending is on a small proportion of patients	Need for more consistency in practice and delivery methods		
Wakerman J, Humphreys JS. 2011	2011	Australia	RA			Addressing rural and remote areas in Australia. These areas are known for their deficits e.g., high morbidity and mortality, workplace shortages, lack of services and high cost of care delivery. Systems need to realise there is no one-size-fits-all solution, and changes need to align the on the	A systematic approach is needed to improve primary healthcare		

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
						micro-scale health service level as well as the macro-scale external policy environment			
Wakerman J, Humphreys JS. 2013	2013	Australia	ED			Tension between national health workforce policy initiatives and demographic, socioeconomic and political forces. Overall, healthcare service access and the health status are worse in non-metropolitan areas	The aim is to provide accessible, affordable, appropriate healthcare regardless of geography. Potential improvement in the number of doctors in regional and rural areas if there is a change in the culture of thinking of rural areas as negative and through the increased number of medical students being		

1136/bmjopen-2022-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 24, 2024 by guest. Protected by copyright.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2022-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
							trained appropriately for regional and remote work, and addressing the other workforces that collaborate with the rural services (e.g., funding, infrastructure, governance), and increasing the accountability of the health service through agreed indicators and output measures		
Woodward, G. L., A. Iverson, R. Harvey, and P. G. Blake. 2015	2015	Canada	ED			Recognises the challenge of bridging policy and practice		Requires leadership, transparency, accountability and communication	

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2022-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
Wutzke, S., M. Benton, and R. Verma. 2016	2016	Australia and New Zealand	EM					Four general factors were found to be present in successful interventions: 1. having a sound business case for change; 2. being prepared for the change process and adapting to different contexts; 3. promoting change through stakeholders; 4. ensuring support through the implementation process	
Zhao Y, Russell DJ, Guthridge	2017	Australia	EM		Regression analyses of payroll data	Managing fluctuations in funding and the translation of this to staff			

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2024-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
S, et al. 2017									
Pisco L, Pinto LF. 2020	2020	Portugal	ED			Comorbidity and increasing age	Suggests that primary healthcare and preventive care (e.g., maternal health, disease prevention, vaccines etc.) is strong investment to increase productivity and strengthen social cohesion		
Ganann R, Peacock S, Garnett A, et al. 2019.	2019	Canada	ED			Discusses how an ageing population presses the need for sustainable healthcare system.	Capacity building through health services and policy research training in the following competencies: understanding health systems and the policy-making process, integrated knowledge		

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2024-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
							transition activities tailored to the specific needs of primary healthcare clinicians and policy making, networking, negotiation and dialogue, project management, interdisciplinary collaborations among patients researchers health practitioners and policy makers, change management implementation, leadership mentorships and collaboration, analysis and evaluation of health related policies and programs,		

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2024-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
							ensuring capacity for meaningful patient engagement, mobilising existing expertise, supporting careers, building capacity to apply research to real-world problems.		
Jessup RL, O'Connor DA, Putrik P, et al. 2019.	2018	Global	ED			Increasing pressures from ageing population, increasingly prevalent chronic disease, higher cost of tests, workforce shortages.			
Vainieri M, Noto G, Ferre F, Rosella LC. 2020.	2020	Global	ED	Defines sustainability as the ability of a health system to meet the	broadly discusses how performance monitoring or measurement isn't currently	Overall short-term bias and perspective of the health system impacts establishing	Challenges listed include the need for improvement in data collection management, the need to adopt a patient-based		

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
				needs of present and future.	sensitive enough to monitor health system sustainability	health system sustainability	perspective, and how performance measures are used in practice.		
Lo Sardo DR, Thurner S, Sorger J, Duftschmid G, Endel G, Klimek P. 2019.	2019	Austria	EM		Measures resilience, however, the paper argues that to be sustainable health systems must be resilient	Rising costs, chronic conditions, and ageing	To counter unsustainability health systems must be resilient		
Williams I, Allen K, Plahe G. 2019.	2019	England	EM		Rationing of finances and how this occurs in reality, with reference to the 'seven forms of rationing' (and how this can be applied to see if health	Recognition that there are perceived barriers to timely release of central funding, and the need to prioritise spending			

1136/bmjopen-2022-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2022-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
					systems are sustainable) - e.g., dilution via spreading thin of resources				
Ammentorp J, Bigi S, Silverman J, et al. 2021.	2021	Australia, Ireland, Austria, Denmark	EM			Challenges to implementing programs: convincing investors, involving stakeholders, locating change agents	Communication training program à improving competencies and knowledge related to patient centred care		
Braithwaite J, Mannion R, Matsuyama Y, et al. 2018.	2018	Global	ED			Common pressures or stressors are manifesting in every healthcare system; these include scarcity of financial and staff resources, expectations of the public, and maintaining healthy			

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
						relationships with multiple stakeholders			
Buttigieg SC. 2019.	2019	Global	ED	Sustainability in healthcare defined as “key task for health policy-makers to withstand social, financial, and ecological pressures and challenges”		Challenges discussed include service delivery, human resources, leadership and governance	“Among these include an open innovation strategy that redesigns sharing intellectual property, resources, and data – and therefore introducing flexibility, easier accessibility to libraries and collections of molecular entities, as well as opportunities for external researchers to work alongside company scientists.”		
Byskov J, Maluka S,	2019	Global	RA					“The debate on defining and	

1136/bmjopen-2024-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
Marchal B, et al. 2019.								operationalizing more sustainable systems approaches by more strongly including a priority setting and a decision-making process guidance raises the question whether (1) technical evidence-based information is most important and can be improved by more participatory value and specific context-based approaches (Baltussen et al., 2013) or (2) the participatory democratically	

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
								based approaches (Biehl and Petryna, 2013; Daniels et al., 2015) are most important, but need support from technical evidence.”	
O'Brien N, Li R, Isaranuwatchai W, et al. 2019	2019	Global	ED			Paper looking at HTA as a means of improving HSS. Cites confusion over definition of HTA as a barrier to its implementation	"Health technology assessment (HTA) is a multi-disciplinary exercise for assessing the clinical and cost-effectiveness of technologies in the form mainly of programs of health (and sometimes social care, together with their associated structural,		

1136/bmjopen-2023-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2024-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
							procedural and implementation arrangements". Governments consequently need to take responsibility for the development of strong and sustainable health systems		
Hanney S, Kanya L, Pokhrel S, Jones T, Boaz A. 2020.	2020	Global	RA			Research funding is a major barrier to HS research and therefore health systems cannot be improved. Discusses waste in research and fragmentation	"WHO Health Evidence Network Synthesis Reports. What is the evidence on policies, interventions and tools for establishing and/or strengthening national health research systems and their effectiveness? Copenhagen:		

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2024-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
							WHO Regional Office for Europe"		
Bentley C, Peacock S, Abelson J, et al. 2019.	2019	Canada	EM			Expensive cancer treatment.	The paper calls to use cost effective decisions and involve patients when making cancer funding decisions. Also, to disinvestment if that treatment becomes less effective later		
Braithwaite J, Vincent C, Nicklin W, Amalberti R. 2019.	2019	Global	ED				We will need to reflect a reasons health journey overall in evaluations and treatment		
Braithwaite J, Zurynski Y, Ludlow K, Holt J, Augustsso	2019	Global	EM protocol	Defines fiscal sustainability, equality					

1136/bmjopen-2022-059207 on 24 May 2022 Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
n H, Campbell M. 2019.									
Rudnicka E, Napierała P, Podfigurna A, Męczkowski B, Smolarczyk R, Grymowicz M. 2020.	2020	Global	ED				An ageing population	establishing a platform of innovation and change, support country planning and action, collect better global data on health ageing, promoting research that addresses the current and future needs of older people, aligning health systems to the needs of older people, laying the foundations for a long-term care system in every country, Ensuring the	

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2023-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
								human resources necessary for integrated care, undertaking a global campaign to combat ageism, defining an economic case for investment, Enhancing the global network for age-friendly cities and communities.	
Shen H, Sui Y, Fu Y. 2020.	2020	Global	EM		This paper looks at apply social choice theory and the Stochastic Multicriteria Acceptability Analysis for group decision making (SMAA-2) to				

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2022-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
					measure the value of health systems. The measurement consistent of three metrics; access, satisfaction, and efficiency, and considers individual preference to each. The article suggested that measuring value is the ultimate goal of modern healthcare and can assist in building sustainable health systems				

For peer review only

1136/bmjopen-2022-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
Fridell M, Edwin S, von Schreeb J, Saulnier DD. 2020.	2020	Global	RA				Implies that resilience is essential to a sustainable healthcare system. Common factors contributing to resilience included: financing, highly skilled workforce, continuous collection of information at the population level, leadership and governance,		

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2024-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
							medical products (such as vaccines and affordable medications), and service delivery.		
Walsh K. 2019.	2019	Global	ED			Limited budget: "Health systems strengthening is a challenge – how can we improve access, coverage, quality and efficiency, and still keep within a limited budget?"	Developing human resource potential through e-learning	Broadening e-learning through online simulations, build on access (e.g., expand to mobile devices and apps)	
De Santis M. 2019.	2019	Global	RA			Change is expensive and incremental, integrated care is hard to quantify	Suggests that integrated care is a solution to system fragmentation, efficiency, and high costs in chronic disease and rare diseases	To achieve and scale integrated care there must be political support and commitment, strong governance, stakeholder engagement, organisational	

1136/bmjopen-2024-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
								change, leadership, workforce education and training, patient focus/empowerment, financing incentives, ICT infrastructure and solutions, monitoring/evaluation system	
Ferrelli RM, Fantini B, Taruscio D. 2019.	2019	European Union	ED			Affordability and financing of equal access and healthcare delivery for people with rare diseases	Discusses networking or rare diseases providers to improve knowledge and healthcare delivery in the EU. The paper also suggests that resilience is important to sustainability	Discusses levers about to build a sustainable health system for rare diseases. Levers include organisation structure, partnerships, workforce, knowledge development, leadership and governance, and country specific context.	

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2024-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
Steenhuis S, Struijs J, Koolman X, Ket J, E VDH. 2020.	2020	Global	RA			Discusses challenges in implementing and changing payment methods to address health system sustainability	"Our study shows that bundled payment contracts affect a broad range of health system actors, so their design and implementation should not be approached as merely the introduction of a new contracting model, but as part of a broader transformation to a more sustainable, value-based health care system. This approach should not focus on the volume and price of separate health care products but on the full care		

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
							cycle of patients and the integral costs and outcomes associated with it"		
Nikolić B. 2020.	2020	European Union	ED			Discusses the fiscal sustainability of health systems, how spending has outpaced GDP and uses Baumols theory and the human factor in healthcare (that much of it cannot be automated) causing costs to rise.	This paper focuses on market competition and competition law between providers and how this could improve costs	This paper discusses how healthcare providers can be considered undertakings through international case law and through guidelines e.g., separation of each activity performed, separation of management activities and calculate the economic nature of each of service item.	

1136/bmjopen-2024-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2024-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 29, 2024 by guest. Protected by copyright.

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
Niraula S. 2019	2019	Canada	ED			Discusses how cancer medication funding is at odds, and needs to be balanced against, the fiscal sustainability of the healthcare system in Canada. A challenge in this sector is that cancer drugs are expensive	To address the high cost and maintain fiscal sustainability the authors suggest to: improve collaborations and decrease duplication of efforts in R&D, minimise the conflicts of interest among members, involve citizens into decision making process, reconsider the funding model to an outcomes based funding model, incentivise cheaper alternatives (generic drugs) and penalise branded ones.		

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2024-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
Pereno A, Eriksson D. 2020.	2020	Nordic Countries	EM and RA	“In spite of the different ways to define sustainable healthcare systems, and regardless of whether the three-pillar model or the integrated understanding of sustainability is applied, all approaches seem to have in common that a comprehensive approach with a long-		In the introduction the paper mentions rising costs, chronic disease, societal pressure such as informed and sometimes demanding patients			

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2022-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
				term focus and a need to balance economic, social, and ecological interests needs to be used in the discussion of sustainable healthcare systems.”					
Bogaert P, van Oers H, Van Oyen H. 2018.	2018	European Union	EM and RA		By developing a sustainable health information infrastructure for monitoring performance		A unified information system with clear governance, central coordination and distributed implementation across EU countries will support system performance - provide unified data	Vague - it talks mainly about the structure of the information systems	

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2024-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
Wurcel V, Cicchetti A, Garrison L, et al. 2019.	2019	Global	ED			financial implications of value of diagnostic information (VODI), including supporting cost containment, allowing timely interventions and preventing disease progression and long-term cost. This requires rapid technological pathology testing and turnaround times to allow rapid clinical decisions (e.g., point-of-care testing, e-health records)	the need to identify and leverage the benefits of the value of diagnostic information for health systems		

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2022-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
Cunningham FC, Ranmuthugala G, Westbrook JI, Braithwaite J. 2019	2019	Australia	ED		Via the framework/network.				
Embi PJ, Richesson R, Tenenbaum J, et al. 2019	2019	USA	ED	Learning health system			the research results should extend far beyond the awardees who conduct the research, and there should be collaboration between funding agencies	that federal funding agencies should see investment in an initiative as an ongoing strategic investment rather than a time-limited option	
Enticott J, Braaf S, Johnson A, Jones A, Teede HJ. 2020.	2020	Australia	EM	Links to a learning health system relying on continuous learning		challenge of engaging multiple stakeholders in governance, research and within the health system itself; having	creating a vibrant learning culture with top down and bottom-up support; clinician engagement and inclusion; transparency around patient	importance of consistent investment/funding overtime	

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
						leadership with focus, vision and engagement; skilled workforce and capacity building; data access and sharing/collaborating with consent	data use and research		
Park YL, Canaway R. 2019.	2019	WHO Western Pacific Region	ED	"Healthcare system sustainability and resilience relate to preparedness and capacity to cope in the face of disease outbreak or disaster."			Move towards universal healthcare which will enable "quality; efficiency; equity; accountability; and sustainability and resilience"	Well-established care Utilising traditional medicine	

1136/bmjopen-2024-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2024-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
Quaglio G, Figueras J, Mantoan D, et al. 2018.	2018	Italy/ Belgium	ED			Y "Over the last 2 decades, health systems in the European Union (EU) are being questioned over their effectiveness and sustainability. In pursuing both goals, they have to conciliate coexisting, not always aligned, realities. For example, (i) an epidemiological transition where chronic conditions and complex patients require	Y - "(i) community participation is a key principle of health promotion practices, stemming from an ideological position that shifts from a bio-medical paradigm towards a social model that creates conditions where people are active participants in their own healthcare;16 (ii) strengthening primary care is one of the major challenges facing EU		

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2024-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
						integrated services pivoting around primary care, that contrasts with the prevalence of specialized, rather fragmented care, mainly provided by hospitals;1,2 (ii) a pervasive idea that more care is always better than less care, when there is a widespread evidence of inappropriate use of treatments and technologies;3 (iii) the rising promise of	healthcare systems as they reduce fragmentation in care provision. Decision makers are searching for models that are able to increase the whole pathway of care: primary, secondary and tertiary, long-term care and eventually social care;17 (iii) threats to good governance—lack of appropriate competences, the existence of conflicts of interest, bureaucratic rigidity—translate into a		

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2024-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
						personalized medicine, that eclipses the efforts in promoting healthy lifestyles; ⁴ or (iv) the increasing demand of information and transparency with respect to services' quality and safety, that contrasts with serious flaws in the good governance of health services. ⁵ Underlying these challenges is a profound transition in	lack of transparency, poorly thought-out policies and the prevailing use of the 'low-hanging fruit' strategy; ¹⁸ and (iv) finally, the generation and reuse of health data (administrative, clinical, environmental, etc.) are essential in embracing the change in the knowledge paradigm towards learning health systems and subsequently toward more sustainable health systems"		

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
						the medical knowledge paradigm, from the traditional and prevailing heuristic approach to the development of data-driven learning systems."			
Kilbourne AM, Braganza MZ, Bowersox NW, et al. 2019.	2019	USA	EM			Funding, lack of incentives for researchers to apply their research into practice		Discusses how the learning health system may contribute to incremental change and enhancement of health system performance.	
Lehoux P, Roncarolo F, Silva HP, Boivin A, Denis JL,	2019	Global	RA			"Since the late 1980s, new health technologies not only	Successful health systems are characterized by healthy people, superior care and fairness. The		

1136/bmjopen-2022-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2024-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
Hebert R. 2019.						increased global inequalities, but they also undermined the sustainability of health systems in rich and poor countries alike. "	researchers write that "over the next decades it will be imperative to implement policies that can support the development, financing and use of innovations that do not compromise but rather contribute to the success and sustainability of health systems."		
Editorial. Healthcar e quarterly (Toronto, Ont.). 2020;22(4)	2020	Canada	ED	Health systems need the right distribution of educated health professional s who have the right	Yes	Yes	Yes	Yes	

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2024-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
				training and mindset; the skills and support to build effective teams and visionary leaders who co-create compassionate cultures and inclusive partnerships that foster integrated patient-centred care; and the right resources, processes, and tools to deliver solutions for current					

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2024-059207 on 24 May 2022 Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
				and future demands.					
Measuring universal health coverage based on an index of effective coverage of health services in 204 countries and territories, 1990-2019: a systematic analysis for the Global Burden of Disease Study	2020	Global	EM		Measures of UHC; UHC viewed as way of achieving health system sustainability and sustainable health outcomes.	Talks about challenges in achieving UHC- especially for low-income countries - identifies per-capita spending to be able to reach 90% UHC as \$2538...Also identifies USA as outlier - achieves only 82% overall coverage despite spending ~8500 per capita			

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
2019. Lancet (London,									
Abimbola S, Baatiema L, Bigdeli M. 2019.	2019	Global	RA	Talks about resilient structures and Financing models		Talks about the challenges of decentralisation - i.e., Decentralised governance and financing to jurisdictions and the impacts of this model. Australian specific			
Barbazza E, Kringos D, Kruse I, Klazinga NS, Tello JE. 2019.	2019	Global	EM & RA	Provides a definition of a sustainable primary care system that is linked with the broader health system	Provides a framework “The resulting framework applies a performance continuum in the classical approach of structures-processes-outcomes	Lack of standardised data collection; poor linkage of primary care with broader system			

1136/bmjopen-2023-059207 on 24 May 2022 Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2022-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
					spanning 6 domains – primary care structures, model of primary care, care contact, primary care outputs, health system outcomes, and health outcomes – that are further classified by 26 subdomains and 63 features of primary care."				
Craig N, Robinson M. 2019.	2019	Scotland	ED	Yes		Yes		Yes	
Costa-Font J,	2020	Global	ED	This perspective paper	Mainly in terms of	Focuses on ageing and increasing	Prevention	Yes	

1136/bmjopen-2024-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
Levaggi R. 2020.				argues that a sustainable health system design encompasses identifying opportunities and incentives for innovation, alongside an analysis of its effect on expenditure. Although aging alone is not a powerful cost driver, the combined effect of costly	economic outcomes	demands for new medical technologies including new treatments but talks about the potential impact of prevention			

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2024-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
				innovation, personalized care, and the rise of chronic conditions is. We identify an increasing role of prevention, the reduction of the prevalence of chronic conditions, re-organisation of incentives in healthcare markets, including a closer scrutiny of the					

For peer review only

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
				appropriate ness of new treatments					
Derakhshani N, Doshman gir L, Ahmadi A, Fakhri A, Sadeghi-Bazargani H, Gordeev VS. 2020.	2020	Global	RA	UHC is implied to be a sustainable health system	Focussed on UHC as a goal for sustainability ; uses a framework and several dimensions... Talks about determinants, barriers and enablers of sustainable UHC	Service delivery (dimension 5) is another dimension of the suggested tool with four axes: basic benefits package, geographical access, quality of care, and human resources for health. In regards to the benefits package axes, developing an affordable, sustainable, and equitable basic package of healthcare that	Yes - talks about culture, integration, seamless care. Diffusion of Excellence practices in making a difference every day for veterans, this article highlights 4 different practice areas	Yes - Social infrastructure and social sustainability (dimensions 1–2) seem to be influential factors in progress towards UHC: society literacy, community income, poverty, age group, and population. ⁵⁴ To reach social sustainability and providing social infrastructure, as well as providing sustainable development,	

1136/bmjopen-2023-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2022-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
						can serve various population needs is a challenge.		political will and determination, technical skills, expertise, and administrative cooperation are required. Political commitment can be a pivotal issue in progress to achieve UHC. Socio-political and economic sustainability essential to support a sustainable UHC	
Clancy C. 2019.	2019	USA	ED	Not as such... indirect	talks about data to support innovation and measure success		Yes - talks about culture, integration, seamless care. Diffusion of Excellence practices in making a	large national network providing care to 9 million veterans; Importance of systems and data. The next	

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2024-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
							difference every day for veterans, this article highlights 4 different practice areas: 1) direct access to healthcare in rural areas, 3) access to mental healthcare, and 4) interactive and patient-centred care.	challenge, however, is elevating such lessons learned to transition the initiative from a nascent start-up to a sustainable part of VHA's culture. There are 3 primary components of the current transition plan: 1) cultivate the culture, 2) build partnerships and encourage collaboration, and 3) embrace appropriate technology.	
Marcotte LM, Moriates C, Wolfson DB,	2020	USA	ED	indirectly describes sustainability through high value care,			Yes - supporting professionalism is seen a more durable intervention rather than	"Medical professionalism is a strong, durable, intrinsic motivator for	

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2024-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
Frankel RM. 2020.				professionalism and education and appropriate incentives and remuneration; It talks about re-conceptualising high value in terms of "infusing" this concept as a principle for practice among all doctors in training... Providing high-value care as a competency for doctors in training			dealing with incentives for single aspects of practice. Linking professionalism with payment reform	improving value in healthcare delivery and should be employed to support training efforts, systems change and payment reform".	

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2022-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
Witter S, Palmer N, Balabano va D, et al. 2019.	2019	Global	RA	The term “HSS” first came from a recognition of the need to address the distorting effects of increasing expenditure on vertical programmes targeted to address specific diseases and interventions (e.g., HIV/AIDS, polio) in the absence of support to broader systems, while recognising that without					

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2022-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 24, 2024 by guest. Protected by copyright.

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
				strengthening of basic health systems, vertical programmes would be unlikely to deliver as expected.					
Sturmberg JP. 2018	2018		ED				Could work to improve the resilience of patients with multi-morbidities. This has been shown to help prevent overutilization of the health system as well as improve the QOL of patients		
Thistlethwaite JE, Dunston R,	2019	Australia	ED		Recognise that interprofessional health education		The importance and shift of interprofessional education from an organisational		

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2023-059207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
Yassine T. 2019.					needs to be funded constantly (even if funding is relatively small) and that it needs to be able to be adapted to micro, meso and macro processes		to a national level, and the role of national funding		
Iskrov G, Stefanov R, Ferrelli RM. 2019.	2019	European Union	ED		Recognition that fiscal sustainability is important, and that achieving this means that more prevalent diseases get more funding	The challenge of making primary care accessible, affordable, and reducing unnecessary hospital admissions. Integrating the health workforce to the benefit of the patient. Anticipating for			

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
Reference	Year	Country	Type *	1. Definition of SPHS	2. Measuring SPHS	3. Challenges to SPHS	4. Improvements to SPHS	5. Sustaining or scaling change for SPHS	6. Other
						changes in need and changing the health workforce accordingly. And that constant data collection and analysis could improve policy and practice			

*Note.

ED – editorial, opinion piece; RA – review article, EM – empirical article.

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

HOW CAN THE HEALTHCARE SYSTEM DELIVER SUSTAINABLE PERFORMANCE? A SCOPING REVIEW

ADDITIONAL FILE 3: QUALITY ASSESSMENT

Hawker rating for included empirical articles

Reference	Abstract and title	Introduction and aims	Method and data	Sampling	Data analysis	Ethics and bias	Finding and results	Transferability and generalisability	Implications and usefulness	Total (out of 36)
Ament SMC, Gillissen F, Moser A, Maessen JMC, Dirksen CD, von Meyenfeldt MF, et al. 2014	4	4	4	3	4	4	4	3	3	33
Bramesfeld, A., F. Amaddeo, J. Caldas-de-Almeida, G. Cardoso, A. Depaigne-Loth, R. Derenne, V. Donisi et al. 2016	4	4	3	3	4	1	4	3	4	30

Reference	Abstract and title	Introduction and aims	Method and data	Sampling	Data analysis	Ethics and bias	Finding and results	Transferability and generalisability	Implications and usefulness	Total (out of 36)
Buttigieg SC, Schuetz M, Bezzina F. 2016	3	3	4	3	3	4	4	3	4	31
Buykx P, Humphreys JS, Tham R, et al. 2012	4	4	2	1	1	3	4	2	4	25
Cho CC, Ramanan RA, Feldman MD. 2011	4	3	4	4	4	1	4	3	4	31
De Rosis S, Nuti S. 2018	3	4	4	3	4	1	4	3	3	29
Dunn, P. M., B. B. Arnetz, J. F. Christensen, and L. Homer. 2007	3	4	4	4	4	1	4	3	3	30
Ehrlich C, Kendall E. 2015	4	3	4	3	3	3	4	3	3	30
Farmanova E, Kirvan C, Verma J, et al. 2016	4	3	3	2	3	1	4	2	4	26
Foo, C. Y., K. K. Lim, S. Sivasampu, K.	4	4	3	2	4	2	4	3	3	29

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2022-019207
May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

Reference	Abstract and title	Introduction and aims	Method and data	Sampling	Data analysis	Ethics and bias	Finding and results	Transferability and generalisability	Implications and usefulness	Total (out of 36)
B. Dahian, and P. P. Goh. 2015										
Fox, L. A., K. E. Walsh, and E. G. Schinker. 2016	4	4	4	1	4	1	4	2	3	27
Garde S, Hullin CM, Chen R, et al. 2007;129(Pt 2):1179-1183.	3	4	3	4	4	1	3	2	3	27
Global, regional, and national disability-adjusted life-years (DALYs) for 315 diseases and injuries and healthy life expectancy (HALE), 1990-2015: a systematic analysis for the Global Burden of Disease Study 2015. 2016	4	4	4	3	4	3	4	4	4	34

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2022-019207
May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

Reference	Abstract and title	Introduction and aims	Method and data	Sampling	Data analysis	Ethics and bias	Finding and results	Transferability and generalisability	Implications and usefulness	Total (out of 36)
Heron, N. 2015.	3	3	4	4	4	1	4	4	2	29
Hibbert PD, Thomas MJW, Deakin A, et al. 2018	4	4	3	3	4	3	4	3	4	32
Kerr R, Hendrie DV. 2018	4	4	4	3	4	3	4	3	4	33
Levine, S., S. O'Mahony, A. Baron, A. Ansari, C. Deamant, J. Frader, I. Leyva, M. Marschke, and M. Preodor. 2017	4	3	4	3	4	1	4	3	4	30
Lizarondo, L., C. Turnbull, T. Kroon, K. Grimmer, A. Bell, S. Kumar, M. McEvoy et al. 2016	4	4	4	3	4	3	3	3	4	32
McVeigh J, MacLachlan M, Gilmore B, et	4	3	3	3	4	4	4	3	3	31

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2022-02-2075
May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

Reference	Abstract and title	Introduction and aims	Method and data	Sampling	Data analysis	Ethics and bias	Finding and results	Transferability and generalisability	Implications and usefulness	Total (out of 36)
al. 2016;12(1):49.										
McGrath, S. P., and G. T. Blike. 2015	4	4	4	3	3	1	4	1	2	26
Molfenter, T., D. Gustafson, C. Kilo, A. Bhattacharya, and J. Olsson. 2005	2	2	4	2	4	3	3	3	4	27
Rees, G. H. 2014	3	4	3	3	4	1	4	3	4	29
Robertson J, Walkom EJ, Henry DA. 2011	4	4	4	3	4	4	4	3	3	33
Scheirer MA. Is sustainability possible? A review and commentary on empirical studies of program sustainability. Am J Eval.	3	2	3	3	4	4	2	2	4	27

Reference	Abstract and title	Introduction and aims	Method and data	Sampling	Data analysis	Ethics and bias	Finding and results	Transferability and generalisability	Implications and usefulness	Total (out of 36)
2005;26(3):320-47.										
Schwann, N. M., K. A. Bretz, S. Eid, T. Burger, D. Fry, F. Ackler, P. Evans et al. 2011	4	2	4	2	4	3	3	2	3	27
Shaw J, Wong I, Griffin B, Robertson M, Bhatia RS. 2017	3	4	4	2	4	1	4	3	3	28
Solon, O., K. Woo, S. A. Quimbo, R. Shimkhada, J. Florentino, and J. W. Peabody. 2009	4	4	4	3	4	3	4	3	4	33
Stockdale, S. E., J. Zuchowski, L. V. Rubenstein, N. Sapir, E. M. Yano, L. Altman, J. J. Fickel, S.	4	4	4	3	4	1	4	3	4	31

Reference	Abstract and title	Introduction and aims	Method and data	Sampling	Data analysis	Ethics and bias	Finding and results	Transferability and generalisability	Implications and usefulness	Total (out of 36)
McDougall, T. Dresselhaus, and A. B. Hamilton. 2016										
Wutzke, S., M. Benton, and R. Verma. 2016	4	4	4	3	4	4	4	3	3	33
Zhao Y, Russell DJ, Guthridge S, et al. 2017	4	4	4	3	4	3	4	3	4	33
Lo Sardo DR, Thurner S, Sorger J, Duftschmid G, Endel G, Klimek P. 2019.	3	3	2	1	4	1	4	3	3	24
Williams I, Allen K, Plahe G. 2019.	3	4	4	4	4	4	4	4	4	35
Ammentorp J, Bigi S, Silverman J, et al. 2021.	4	4	3	3	4	3	4	4	4	33
Bentley C, Peacock S, Abelson J, et al. 2019.	4	4	3	3	3	3	4	4	4	32

1136/bmjopen-2022-029207
May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2022-029207
May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

Reference	Abstract and title	Introduction and aims	Method and data	Sampling	Data analysis	Ethics and bias	Finding and results	Transferability and generalisability	Implications and usefulness	Total (out of 36)
Shen H, Sui Y, Fu Y. 2020.	4	4	2	2	4	4	4	4	4	32
Fridell M, Edwin S, von Schreeb J, Saulnier DD. 2020.	4	4	3	3	4	4	4	4	4	34
Pereno A, Eriksson D. 2020.	3	4	3	3	4	3	4	4	4	32
Bogaert P, van Oers H, Van Oyen H. 2018.	4	4	4	3	3	3	4	4	4	33
Enticott J, Braaf S, Johnson A, Jones A, Teede HJ. 2020.	4	4	4	3	4	4	4	3	4	34
Kilbourne AM, Braganza MZ, Bowersox NW, et al. 2019.	4	3	3	3	4	2	3	4	4	30
Measuring universal health coverage based on an index of effective coverage of health services	4	4	4	4	4	3	4	4	4	35

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

Reference	Abstract and title	Introduction and aims	Method and data	Sampling	Data analysis	Ethics and bias	Finding and results	Transferability and generalisability	Implications and usefulness	Total (out of 36)
in 204 countries and territories, 1990-2019: a systematic analysis for the Global Burden of Disease Study 2019. Lancet. 2020.										
Barbazza E, Kringos D, Kruse I, Klazinga NS, Tello JE. 2019.	4	4	4	4	4	3	4	3	3	33

Note.

Each category is rated on a 4-point scale (from 1=“very poor” to 4=“good”) to create a total score of up to 36.

1136/bmjopen-2022-029207 on April 20, 2024 by guest. Protected by copyright.

1136/bmjopen-2021-059207
24 May 2022, 10:28:10 AM
Not certified for publication
http://bmjopen.bmj.com/ on April 26, 2024 by guest
Protected by copyright.

AACODS rating for editorial and opinion articles

Reference	Authority		Accuracy		Coverage		Objectivity		Date		Significance	
	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment
Al Dhawi AA, West DJ, Jr., Spinelli RJ, Gompf TA. The challenge of sustaining health care in Oman. <i>Health Care Manager.</i> 2007;26(1):19-30.	Yes	Authors have authority, relevant references included. Published in peer-reviewed journal	Yes	Brief clear and met, peer reviewed	Yes	Focus on Oman	Yes	Author bias not explicitly stated, but standpoint is balanced	Yes	Context of article identifiable. Key contemporary references included	Yes	Important article in recognising threats to the health system in Oman, and a model for sustaining healthcare reform in Oman is discussed
Amalberti, R., W. Nicklin, and J. Braithwaite. 2016. Preparing national health systems to cope with	Yes	Authors have authority, relevant references included. Published in peer-reviewed journal	Yes	Aim not explicit, but article to report on an international workshop previously conducted. No	Yes	Wide coverage, worldwide discussion encapsulating main issues associated with an ageing population	Yes	Recognise this paper made in association with the International Society of Quality in Health Care (ISQua)	Yes	Clear date acknowledged as from 1960s currently (2016 when article was published). Key	Yes	Good summary of current worldwide problem, and nuance between cohorts of countries experienci

1136/bmjopen-2021-019207 on 25 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

Reference	Authority		Accuracy		Coverage		Objectivity		Date		Significance	
	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment
the impending tsunami of ageing and its associated complexities: Towards more sustainable health care. Int J Qual Health Care 28 (3):412-414. doi:10.1093/intqhc/mzw021.				method reported. Published in peer-reviewed journal				and participants from the countries involved. However, offers a balanced opinion of the issues discussed		references also included		ng an ageing population to different extents
Armstrong BK, Gillespie JA, Leeder SR, Rubin GL, Russell LM. Challenges in health	Yes	Authors have authority, relevant references included. Published in peer-reviewed journal	Yes	Brief clearly stated in presenting the challenges to make a sustainable	Yes	Focus on Australian health system	Yes	Author bias not explicitly stated, but standpoint is balanced	Yes	Context of article identifiable. Key contemporary references included	Yes	Unique and useful article outlining some main challenges of healthcare, tailored to the health

1136/bmjopen-2021-019207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. For peer review only. Copyright.

Reference	Authority		Accuracy		Coverage		Objectivity		Date		Significance	
	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment
and health care for Australia. <i>Medical Journal of Australia</i> . 2007;187(9):485-489.				healthcare system								system and context in question
Atmore C. The role of medical generalism in the New Zealand health system into the future. <i>New Zealand Medical Journal</i> . 2015;128(1419):50-55.	Yes	Authors have authority, relevant references included. Published in peer-reviewed journal	Yes	Brief clear and met, no method provided	Yes	New Zealand healthcare specific, but recognises that the solution could be applied to other health systems	Yes	Author bias not explicitly stated, but standpoint is balanced	Yes	Context of article identifiable. Key contemporary references included	Yes	Emphasises the importance of being a generalist and how this could trailblaze this new role and system design for other countries
Barasa EW, Cloete K, Gilson L. From bouncing back, to	Yes	Authors have authority and are from various	Yes	Brief described and met. No methodolo	Yes	Worldwide coverage that aligns with the authors diverse	Yes	Well balanced presentation incorporating	Yes	Framed around the Ebola outbreak (2014-2016)	Yes	Relevant worldwide to all health systems

1136/bmjopen-2021-019207 on May 20, 2022. Downloaded from http://bmjopen.bmj.com/ on April 21, 2022 by guest. Protected by copyright.

Reference	Authority		Accuracy		Coverage		Objectivity		Date		Significance	
	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment
nurturing emergence: reframing the concept of resilience in health systems strengthening. <i>Health policy and planning</i> . 2017;32(suppl_3):iii91-iii94.		continents around the globe, relevant references included. Published in peer-reviewed journal		gy provided		backgrounds		worldwide need to nurture everyday resilience in healthcare, rather than just in emergencies		Contemporary references also included		
Bessler JS, Ellies M. Values and value--a vision for the Australian health care system. <i>Australian Health Review</i> . 1995;18(3):6-17;	Partially	Authors have authority in IT but not healthcare, relevant references included. Published in peer-reviewed journal	Yes	Brief clear and met, no method provided, peer-reviewed	Yes	Focus on Australian health system	Yes	Author bias not explicitly stated, but standpoint is clear	Yes	Context of article identified as current (at time of publication). Key contemporary references included	Yes	Investigates the need for health reform to address rising costs with the health system and increase its sustainability

1136/bmjopen-2021-019207 on 24 May 2022. Protected from reuse by copyright. http://bmjopen.bmj.com/ on April 20, 2024 by guest. Protected by copyright.

Reference	Authority		Accuracy		Coverage		Objectivity		Date		Significance	
	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment
discussion 18-29.												
Birch S, Murphy GT, MacKenzie A, Cumming J. In place of fear: aligning health care planning with system objectives to achieve financial sustainability. Journal of Health Services & Research Policy. 2015;20(2):109-114.	Yes	Authors have authority in a combination of fields (health economics, policy analysis, health services and nursing), relevant references included. Published in peer-reviewed journal	Yes	Clear brief in outlining the current healthcare expenditure, and creating the healthcare sustainability framework to identify determinants of healthcare expenditure, so that it can evolve with population needs	Yes	Worldwide, with examples from Australia, the UK and Canada	Yes	Authors standpoint clear. Examples from numerous countries and from reviews in the field, seems well balanced.	Yes	Context of article identifiable. Key contemporary references included	Yes	Presents a healthcare sustainability framework
Buchan J. What difference	Yes	Authors have authority,	Yes	Argument is clear	Yes	Worldwide context, relates	Yes	Authors standpoint is clear on	Yes	Context of article identifiable	Yes	Contributes the importance

1136/bmjopen-2021-019207 on 24 May 2024. Downloaded from http://bmjopen.bmj.com/ on 28 August 2024 by guest. Protected by copyright.

Reference	Authority		Accuracy		Coverage		Objectivity		Date		Significance	
	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment
<p>does ("good") HRM make? <i>Human Resources for Health [Electronic Resource]</i>. 2004;2(1):6 .</p>		relevant references included. Published in peer-reviewed journal		and balanced		discussion to meeting the sustainable development goals, and discusses the role of human resource management in the health system		the importance of human resource management		e. Key contemporary references included		e of implementing, disseminating and sustaining good HRM in health systems
<p>Buchan JM, Naccarella L, Brooks PM. Is health workforce sustainability in Australia and New Zealand a realistic</p>	Yes	Authors have authority, relevant references included. Published in peer-reviewed journal	Yes	Brief clear and met, peer reviewed	Yes	Australia and New Zealand context	Yes	Author bias not explicitly stated, but standpoint is balanced	Yes	Context of article identifiable. Key contemporary references included	Yes	Important argument that the health systems in Australia and New Zealand need more focus on prevention, and increasing

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2021-019207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/>. Open Access request accepted by copyright.

Reference	Authority		Accuracy		Coverage		Objectivity		Date		Significance	
	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment
<p>policy goal? <i>Australian health review: a publication of the Australian Hospital Association</i>. 2011;35(2): 152-155.</p>												the productivity of the health system
<p>Burgess LH, Cohen MR, Denham CR. A new leadership role for pharmacists: a prescription for change. <i>Journal of patient safety</i>.</p>	Yes	Authors have authority, relevant references included. Published in peer-reviewed journal	Yes	Aim and method well defined and adhered to	Yes	Worldwide, focusing on pharmacists as leaders	Yes	Author bias not explicitly stated, but standpoint is balanced and based on peer-reviewed literature	Yes	Context of article identifiable but date range of literature search not disclosed. Key contemporary references included	Yes	Argues for the importance of pharmacist leaders

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

Reference	Authority		Accuracy		Coverage		Objectivity		Date		Significance	
	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment
2010;6(1):31-37.												
Casale CR, Clancy CM. Commentary: Not about us without us. <i>Academic Medicine</i> . 2009;84(10):1333-1335.	Yes	Authors have authority, relevant references included. Published in peer-reviewed journal	Yes	Clear brief to argue for the use of community-based participatory research for improving healthcare	Yes	Focus on United States of America health system	Yes	Author bias not stated, but recognises the bias in healthcare	Yes	Context of article identifiable. Key contemporary references included	Yes	Presents theoretical arguments for community-based participatory research in response to another article in the journal
Cashin A. The challenge of nurse innovation in the Australian context of universal health care. <i>Collegian</i> . 2015;22(3):319-324.	Yes	Authors have authority, relevant references included. Published in peer-reviewed journal	Yes	Brief clear and met, no method provided	Yes	Focus on Australian context, with emphasis on nurses	Yes	Author bias not explicitly stated, but standpoint is balanced	Yes	Context of article identifiable. Key contemporary references included	Yes	Important article in detailing the concept of universal healthcare applied to Australia to empower nurse led health innovation

1136/bmjopen-2021-019207 on 24 May 2022. Protected from copyright by copyright.

1136/bmjopen-2021-019207 on 24 May 2022. Downloaded from http://bmjopen.bmj.com/ on April 20, 2024 by guest. Protected by copyright.

Reference	Authority		Accuracy		Coverage		Objectivity		Date		Significance	
	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment
Chambers DA, Glasgow RE, Stange KC. The dynamic sustainability framework: addressing the paradox of sustainment amid ongoing change. Implement Sci. 2013;8:117 .	Yes	Authors have authority, relevant references included	Yes	Aim of research is clear in responding to two frequent assumptions about sustainability (voltage drop and program drift)	Yes	Specific to United States of America health system	Yes	Bias not explicitly stated but authors standpoint is balanced	Yes	Context of article identifiable. Key contemporary references included	Yes	Significant as it adds the Dynamic Sustainability Network to the literature
Coiera E, Hovenga EJ. Building a sustainable health system. Yearb Med	Yes	Authors have authority, relevant references included	Yes	Research aim identified and met	Yes	Worldwide, but focuses on the sustainability of current health systems	Yes	Bias not explicitly stated but is present	Yes	Context of article identifiable. Key contemporary references included	Yes	Important article with advice on the measurement and improvement of

1136/bmjopen-2021-019207 on 24 May 2022
Downloaded from <https://bmjopen.bmj.com/> on April 2, 2024 by guest. Protected by copyright.

Reference	Authority		Accuracy		Coverage		Objectivity		Date		Significance	
	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment
Inform 2007:11–8.												health system sustainability
Crisp N. What would a sustainable health and care system look like? <i>BMJ (Clinical research ed.)</i> . 2017;358:j3895.	Yes	Authors have authority as a member of the House of Lords (and is talking specifically about the NHS), relevant references included. Published in peer-reviewed journal	Yes	Clear brief to argue that sustainability depends on seven factors and that cross-sectional partnerships are needed to increase resilience. No methodology provided	Yes	NHS specific	Yes	Authors standpoint is clear in their argument	Yes	No date specifically, but included from 1978 at the Alma-Ata Declaration onwards to time of publication (2017). Contemporary references also included	Yes	Recognition of some factors that need more attention, and also needs further underpinning by the economy and through creative partnerships
Delgado, P. 2016. Meeting the Challenge	Yes	Authors have authority, relevant references	Yes	Aim to explore the aims of the Atlantic	Yes	Designed to answer or discuss the aim. No	Yes	Bias not explicitly stated but authors standpoint	Yes	Context of article identifiable but not specific to	Yes	Contributes questions and suggestion

1136/bmjopen-2021-019207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/>. Protected by copyright.

Reference	Authority		Accuracy		Coverage		Objectivity		Date		Significance	
	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment
of Chronic Conditions in a Sustainable Manner: Building on the AHC Learning. Healthc Pap 15 Spec No:90-95; discussion 97-123.		included. Published in peer-reviewed journal		Healthcare Collaboration for Innovation and Improvement in Chronic Disease (AHC) and its areas of success and possible improvement		specific method section, but qualitative and quantitative methods employed in a separate article		is clear and based on evidence from past research		a particular 'date', e.g., research in area was published in 2005, while opinion piece published in 2006. However, other key contemporary references included		s for future research
Dhalla I. Canada's health care system and the sustainability paradox. <i>Cmaj</i> . 2007;177(1):51-53.	Yes	Authors have authority, relevant references included. Published in peer-reviewed journal	Yes	Brief stated, view is balanced with arguments from opposing view	Yes	Specific to Canadian health system, with Ontario as an example	Yes	Bias not explicitly stated, but work seems well balanced and acknowledges	Yes	Context of article identifiable. Key contemporary references included	Yes	Argument is relevant and adds new ideas to existing literature

1136/bmjopen-2021-019207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

Reference	Authority		Accuracy		Coverage		Objectivity		Date		Significance	
	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment
								counter-arguments				
Edwards, N., M. Rowan, P. Marck, and D. Grinspun. 2011. Understanding whole systems change in health care: the case of nurse practitioners in Canada. <i>Policy Polit Nurs Pract</i> 12 (1):4-17.	Yes	Authors have authority, relevant references included. Published in peer-reviewed journal	Yes	Clear aim and methods provided	Yes	Specific to Canadian healthcare system	Yes	Bias not stated, article is balanced and limitations are acknowledged	Yes	Contemporary references included	Yes	Relevant to Canada's healthcare system
Ellner, A. L., S. Stout, E. E. Sullivan, E. P. Griffiths,	Yes	Authors have authority, relevant references included.	Yes	Aim to argue for increased support for health innovators	Yes	Define the scope of their article in introduction: defining	Yes	Argue that increased support is needed to advance healthcare	Yes	Context of article identifiable but not specific (identified)	Yes	Relevant to US academic medicine, educating medical

1136/bmjopen-2021-019207 on 24 May 2022. Downloaded from http://bmjopen.bmj.com/ on April 20, 2024 by guest. Protected by copyright.

Reference	Authority		Accuracy		Coverage		Objectivity		Date		Significance	
	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment
A. Mountjoy, and R. S. Phillips. 2015. Health Systems Innovation at Academic Health Centers: Leading in a New Era of Health Care Delivery. Acad Med 90 (7):872-880. doi:10.1097/acm.0000000000000679.		Published in peer-reviewed journal		in academic health centres in the US, and define health system innovation		health system innovation , distinguish ing it from quality improvem ent, and examining career opportunit ies for those who will lead health systems innovation		goals in academic health centers		as 21st century in article). Key contenpor ary references included		students, and trying to allow healthcare at a sustainabl e cost
Fineberg HV. Shattuck Lecture. A successful	Yes	Authors have authority, relevant references	Yes	Clear examinati on of USA health system	Yes	American healthcare context	Yes	Author bias not explicitly stated, but standpoint	Yes	Context of article identifiable as after the 2010	Yes	Recognise s that many steps are needed to

Reference	Authority		Accuracy		Coverage		Objectivity		Date		Significance	
	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment
and sustainable health system-- how to get there from here. New England Journal of Medicine. 2012;366(11):1020-1027.		included. Published in peer-reviewed journal		and how to increase its sustainability				is balanced		Patient Protection and Affordable Care Act. Key contemporary references included		ensure a sustainable health system, and identifies characteristics of a sustainable health system
Gruen RL, Elliott JH, Nolan ML, Lawton PD, Parkhill A, McLaren CJ, Lavis JN.	Yes	Authors have authority, relevant references included	Yes	Research aim and methods stated and met	Yes	Scope of article clearly defined	Yes	Author bias not stated but viewpoint is balanced	Yes	Context of article identifiable. Key contemporary references included	Yes	Contributes to conversation around health system sustainability
Greenhalgh, T., F. Macfarlane, C. Barton-Sweeney, and F. Woodard.	Yes	Authors have authority, relevant references included	Yes	Research aim and methods stated and met	Yes	Based in London health system, but significance extends	Yes	Bias minimized through administering of questionnaire by	Yes	Context of article identifiable. Key contemporary	Yes	Important article with significance for improving and

1136/bmjopen-2021-019207 on 27 May 2022. Downloaded from <http://bmjopen.bmj.com/> April 20, 2024 by guest. Protected by copyright.

1136/bmjopen-2021-019207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2022 by guest. Protected by copyright.

Reference	Authority		Accuracy		Coverage		Objectivity		Date		Significance	
	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment
2012. "If we build it, will it stay?" A case study of the sustainability of whole-system change in London. <i>Milbank Q</i> 90 (3):516-547. doi:10.1111/j.1468-0009.2012.00673.x.						beyond that		blinded researchers		references included		scaling system change that can be applied to other health systems
Guyon A, Hancock T, Kirk M, et al. The weakening of public health: A threat to population health and	Yes	Authors have authority, relevant references included. Published in peer-reviewed journal	Yes	Brief clear and met, no method provided	Yes	Focus on Canadian health system	Yes	Author bias not explicitly stated, but standpoint is balanced	Yes	Context of article identifiable and discusses current government policy (at time of publication)	Yes	Identifies issues with government approach to public health and responds to each

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2021-019207 on 24 May 2022. Downloaded from http://bmjopen.bmj.com/ on April 28, 2022 by guest. Protected by copyright.

Reference	Authority		Accuracy		Coverage		Objectivity		Date		Significance	
	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment
health care system sustainability. <i>Canadian Journal of Public Health. Revue Canadienne de Sante Publique.</i> 2017;108(1):e1-e6.										n) in Canada. Key contemporary references included		
Hovenga EJ. Impact of data governance on a nation's healthcare system building blocks. <i>Studies in Health Technology & Informatics</i>	Partially	Authors have authority, relevant references included. Unable to determine if journal is peer-reviewed	Yes	Brief clear and met, no method provided	Yes	Worldwide, focusing on 'a nation' to explain national healthcare	Yes	Author bias not explicitly stated, standpoint based on reputable sources e.g., world health organisation	Yes	Context of article identified as current. Key contemporary references included	Yes	Important article educating readers about IT and healthcare and sustainability of that health system

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2021-019207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

Reference	Authority		Accuracy		Coverage		Objectivity		Date		Significance	
	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment
. 2013;193:24-66.												
Inotai A, Petrova G, Vitezic D, Kalo Z. Benefits of investment into modern medicines in Central-Eastern European countries. Expert review of pharmacoconomics & outcomes research. 2014;14(1):71-79.	Yes	Authors have authority, relevant references included. Published in peer-reviewed journal	Yes	Aim clearly stated and adhered to. No method provided	Yes	Specific to Central Eastern European countries	Yes	Authors standpoint is balanced, citing research and the WHO	Yes	Context of article identifiable. Key references included	Yes	Relevant, useful arguments for Central Eastern European health systems to consider
Kepros JP, Opreanu RC. A new model for	Yes	Authors have authority, relevant	Yes	Brief stated and examines the	Yes	United States of America	Yes	Authors standpoint clear, bias not	Yes	Context of article identifiable. Key	Yes	Adds historical context to relationshi

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2021-019207 on 25 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

Reference	Authority		Accuracy		Coverage		Objectivity		Date		Significance	
	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment
health care delivery. <i>BMC health services research</i> . 2009;9:57.		references included. Published in peer-reviewed journal		evolving relationship between hospitals, medical schools and physicians		health system		explicitly mentioned		contemporary references included		p between medical schools, hospitals and physicians, and examines the shared vision for the future
Knutson, D. J. 1997. The role of strategic alliances in ensuring health care quality: a health care system perspective. <i>Clin Ther</i> 19 (6):1572-1578.	Partially	Authors have authority, but no references included	Yes	Brief clear and met, no method provided	Yes	Specific to HealthSystems Minnesota, but may be applicable more widely	Yes	Author bias not explicitly stated, but standpoint is balanced	Yes	Context of article identifiable. Key contemporary references included	Yes	Important article that focuses on the Chronic Illness Management Research and Development Project (CIMRDP) in Minnesota
Lehoux P, Williams-Jones B,	Yes	Authors are associated	Yes	Authors clear experts in	Yes	Coverage is worldwide	Yes	Authors have more knowledge	Yes	Context of article identifiable	Yes	Applicable worldwide for

1136/bmjopen-2021-0207 on 20 May 2023. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

Reference	Authority		Accuracy		Coverage		Objectivity		Date		Significance	
	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment
Miller F, Urbach D, Tailliez S. What leads to better health care innovation? Arguments for an integrated policy-oriented research agenda. <i>Journal of Health Services & Research Policy</i> . 2008;13(4): 251-254.		with reputable organisations in their fields. Published in peer reviewed journal.		the field within the Canadian Health system, and contemporary references are cited. Published in peer reviewed journal		with very broad factors of sustainability being discussed, drawing on a workshop at an international conference		regarding Canadian system than worldwide and this is stated. The participants from the workshop at the Invitationa l Workshop of Innovation s in Health, from which this paper arose, included participant s from Canada, England, Wales, and		e. Key contemporary references included		industrialized countries to adopt a new kind of policy-oriented research based on relevance, usability and sustainability

1136/bmjopen-2021-019207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

Reference	Authority		Accuracy		Coverage		Objectivity		Date		Significance	
	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment
								Finland. The event was funded by various Canadian grants. This standpoint is clear by the Authors, and yet their opinion piece seems balanced				
Levin L, Goeree R, Levine M, et al. Coverage with evidence development: the Ontario experience.	Yes	Authors have authority, relevant references included. Published in peer-reviewed journal	Yes		Yes	Focus on health system in Ontario, Canada	Yes					

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2021-019207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

Reference	Authority		Accuracy		Coverage		Objectivity		Date		Significance	
	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment
International journal of technology assessment in health care. 2011;27(2):159-168.												
Lewis S. Can a learning-disabled nation learn healthcare lessons from abroad? <i>Healthcare policy = Politiques de sante.</i> 2007;3(2):19-28.	Yes	Authors have authority, relevant references included. Published in peer-reviewed journal	Yes	Brief clear and met, no method provided	Yes	Focus on Canadian health system	Yes	Author bias not explicitly stated, but standpoint is balanced	Yes	Context of article identifiable. Key contemporary references included	Yes	Unique perspective, arguing for the focus on other aspects of the health system than its sustainability
Liaropoulos L, Goranitis I. Health care	Yes	Authors have authority, relevant	Yes	Brief clear and met, no method provided	Yes	Worldwide, but focusing on cost-	Yes	Author bias not explicitly stated, but	Yes	Context of article identifiable. Key	Yes	Investigates the sustainability of

1136/bmjopen-2021-019207 on 25 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

Reference	Authority		Accuracy		Coverage		Objectivity		Date		Significance	
	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment
financing and the sustainability of health systems. <i>International journal for equity in health.</i> 2015;14:80 .		references included. Published in peer-reviewed journal				effectiveness of health systems		standpoint is balanced		contemporary references included		healthcare financing around the world
Lozano I, Rondan J, Vegas JM, Segovia E. Sustainability of the Health System: Beyond Cost-effectiveness Analyses. <i>Revista espanola de cardiologia (English</i>	Partially	Authors have authority, relevant references included. Journal not peer-reviewed	Yes	Brief clear in replying to original article. No methods	Yes	Spanish health system context	Yes	Author bias not explicitly stated, but standpoint is balanced in addressing original article's viewpoint and rebutting as appropriate	Yes	Context of article identifiable. Key contemporary references included	Yes	Argues that the Spanish health system has many strengths, but one of its weaknesses is the lack of sustainability

1136/bmjopen-2021-019207 on 24 May 2022. Downloaded from <https://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

Reference	Authority		Accuracy		Coverage		Objectivity		Date		Significance	
	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment
<i>ed.</i> 2016;69(9): 880-881.												
Mackenzie J. The old care paradigm is dead, long live the new sustainable care paradigm: how can GP commissioning consortia meet the demand challenges of 21st century healthcare? <i>London journal of primary care.</i>	Yes	Authors have authority, relevant references included. Published in peer-reviewed journal	Yes	Brief clear and met, no method provided	Yes	Focus on United Kingdom	Yes	Author bias not explicitly stated, but standpoint is balanced	Yes	Context of article identifiable as beginning from 1948 until present. Key contemporary references included	Yes	Examines the significance of prevention rather than treatment to increase the sustainability of the health system

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2021-019207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on 24 May 2022 by guest. Protected by copyright.

Reference	Authority		Accuracy		Coverage		Objectivity		Date		Significance	
	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment
2011;4(1):64-68.												
Magnan S, Fisher E, Kindig D, et al. Achieving accountability for health and health care. <i>Minnesota medicine</i> . 2012;95(11):37-39.	Partially	Authors have authority, relevant references included. Journal not peer-reviewed	Yes	Clear aim that is fulfilled, no method supplied	Yes	Focus on United States of America health system	Yes	Author bias not explicitly stated, but standpoint is balanced	Yes	Context of article identifiable. Key contemporary references included	Yes	Recognises the importance of the triple aim in healthcare sustainability
McGorry PD, Hamilton MP. Stepwise expansion of evidence-based care is needed for mental health reform. <i>The Medical</i>	Yes	Authors have authority, relevant references included. Published in peer-reviewed journal	Yes	Brief well defined and adhered to. No methodology present	Yes	focus on Australia and the mental health sector	Yes	Author bias not explicitly stated, but standpoint is balanced	Yes	Context of article identifiable. Key contemporary references included	Yes	Recognises the challenges in the system of

1136/bmjopen-2021-019207 on 24 May 2022
Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

Reference	Authority		Accuracy		Coverage		Objectivity		Date		Significance	
	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment
<i>journal of Australia.</i> 2016;204(9):351-353.												
McIntosh E, Nagelkerk J, Vonderheid SC, Poole M, Dontje K, Pohl JM. Financially viable nurse-managed centers. <i>Nurse Pract.</i> 2003;28(3):40, 46-48, 51.	Yes	Authors have authority, relevant references included. Published in peer-reviewed journal	Yes	Aim not clear, but brief clear and examples used to explain argument. Peer reviewed	Yes	Focus on the role of finance committees in nurse managed centres in the United States of America	Yes	Author bias not explicitly stated, but standpoint is balanced	Yes	Context of article identifiable. Key contemporary references included	Yes	Important article on nurse managed centres and how they function
Nagle LM, Pitts BM. Citizen perspectives on the future of	Partially	Authors have authority, relevant references included.	Yes	Brief clearly stated and met. No methods provided	Yes	Focus on health system in Ontario, Canada	Yes	Author bias not explicitly stated, but standpoint	Yes	Dates explicitly (comments on the panel that met from	Yes	Summarises the recommendations for sustainability from

Reference	Authority		Accuracy		Coverage		Objectivity		Date		Significance	
	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment
healthcare. <i>Healthcare Quarterly</i> . 2012;15(2): 40-45.		Journal not peer-reviewed						is balanced		April 2011. Contemporary references also included		the unique panel of Ontarians
Pacifico Silva H, Lehoux P, Miller FA, Denis JL. Introducing responsible innovation in health: a policy-oriented framework. <i>Health Research Policy & Systems</i> . 2018;16(1): 90.	Yes	Authors have authority, relevant references included. Published in peer-reviewed journal	Yes	Research aim identified and met. No method provided	Yes	Worldwide, with examples from the United States and European Union	Yes	Author bias not explicitly stated, but bias of technologies being discussed is explicitly stated	Yes	Context related to responsible research and innovation in health, and thus is centred on when the research on the topic increased	Yes	Contributes responsible innovations in health framework, with nine dimensions organised into five domains
Pencheon D. Developing a	Yes	Authors have authority, relevant	Yes	Brief clear and met, no method provided	Yes	England NHS context	Yes	Author bias not explicitly stated, but	Yes	Context identified as the five years	Yes	Important article highlighting ways in

1136/bmjopen-2021-019207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

1136/bmjopen-2021-019207 on 25 May 2024. Downloaded from <http://bmjopen.bmj.com/> by guest. Protected by copyright.

Reference	Authority		Accuracy		Coverage		Objectivity		Date		Significance	
	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment
sustainable health and care system: lessons for research and policy. <i>Journal of Health Services & Research Policy</i> . 2013;18(4): 193-194.		references included. Published in peer-reviewed journal						standpoint is balanced		previous publication in 2013 (when future proofing the healthcare was attempted)		which the health system can be sustained
Pronovost, P. J., C. G. Holzmueller, T. Callender, R. Demski, L. Winner, R. Day, J. M. Austin, S. M. Berenholtz, and M. R. Miller. 2016. Sustaining	Yes	Authors have authority, relevant references included. Published in peer-reviewed journal	Yes	Aim not explicit, but article brief is provided. Methodology provided and adhered to	Yes	Specific and well defined: Johns Hopkins Hospital in 2012-2014	Yes	Authors clear that they conducted previous research in measuring results of sustainability improvement measures (2012) and the	Yes	Clear date acknowledged from 2012 (initial results) to 2013	Yes	Suggests quality could improve through applying the framework used at Johns Hopkins Hospital (JHH)

1136/bmjopen-2021-019207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> by guest. Protected by copyright.

Reference	Authority		Accuracy		Coverage		Objectivity		Date		Significance	
	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment
Reliability on Accountability Measures at The Johns Hopkins Hospital. Jt Comm J Qual Patient Saf 42 (2):51-60.								author's efforts to sustain them				
Robertson TM, Lofgren RP. Where population health misses the mark: breaking the 80/20 rule. <i>Academic Medicine</i> . 2015;90(3):277-278.	Yes	Authors have authority, relevant references included. Published in peer-reviewed journal	Yes	No aim, but brief clearly stated. Relevant references included. Published in peer reviewed journal.	Yes	United States health context	Yes	Bias not explicitly stated but states the aim to reduce healthcare spending through analysis of medical insurance claim records	Yes	Context of article identifiable. Key contemporary references included	Yes	Adds to the argument of the importance of identifying health spending and working on reducing it where possible

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2021-019207 on May 22, 2024. Downloaded from http://bmjopen.bmj.com/ on April 20, 2024 by guest. Protected by copyright.

Reference	Authority		Accuracy		Coverage		Objectivity		Date		Significance	
	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment
Rosenberg-Yunger ZR, Daar AS, Singer PA, Martin DK. Healthcare sustainability and the challenges of innovation to biopharmaceuticals in Canada. <i>Health policy (Amsterdam, Netherlands)</i> . 2008;87(3):359-368.	Yes	Authors have authority, relevant references included. Published in peer-reviewed journal	Yes	Clear brief comprising three parts to review government response to biopharmaceuticals and health system sustainability	Yes	Focus on Canada health system	Yes	Author bias not explicitly stated, but standpoint is balanced	Yes	Context of article identifiable. Key contemporary references included	Yes	Contributes recommendations for the field regarding access to biopharmaceuticals
Rosser, M. 2006. Advancing health system	Partially	Authors have authority, but no	Yes	Research aim identified and met	Yes	Focus on Canadian health system	Yes	Clear from the article even though bias is not	Yes	Context of article covered from 1997 (inception)	Yes	Significance evident in the "lessons

1136/bmjopen-2021-019207 on 24 May 2023. Downloaded from <http://bmjopen.bmj.com/> April 20, 2024 by guest. Protected by copyright.

Reference	Authority		Accuracy		Coverage		Objectivity		Date		Significance	
	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment
integration through supply chain improvement. <i>Healthc Q 9</i> (1):62-66, 64.		references included						specifically mentioned that the stance of the article is that HMMS are beneficial		of HMMS) and 2006 (article publication). No references included		learned" section
Scott IA. Is modern medicine at risk of losing the plot? <i>The Medical journal of Australia</i> . 2006;185(4):213-216.	Yes	Authors have authority, journal is peer-reviewed	Yes	Examines if pledges by Australian Government for improvements to healthcare are sustainable financially, and in terms of behaviour change on the front line	Yes	Specific to Australian population healthcare spending, and the private health insurance system of Australia	Yes	Clear opinion but well balanced argument	Yes	Context of article identifiable. Key contemporary references included	Yes	Relevant, adds context to Australian health. Encourages different aspects of the health system to work together

Reference	Authority		Accuracy		Coverage		Objectivity		Date		Significance	
	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment
Sepehri A, Chernomas R. Is the Canadian health care system fiscally sustainable? <i>International Journal of Health Services</i> . 2004;34(2): 229-243.	Yes	Authors have authority, relevant references included. Published in peer-reviewed journal	Yes	Brief clearly described and met. No methodology	Yes	Specific to Canadian context	Yes	Contains well balanced review of literature, and compares the health systems of Canada and the United States	Yes	Context of article identifiable. Key contemporary references included	Yes	Argued for the best way to increase the sustainability and economic viability of the national Canadian health system
Shigayeva A, Coker RJ. Communicable disease control programmes and health systems: an analytical approach to sustainability	Yes	Authors have authority, relevant references included. Published in peer-reviewed journal	Yes	Aim clearly stated and met. No methodology	Yes	Worldwide context, but focus on disease control programs	Yes	Author bias not explicitly stated, but standpoint is balanced	Yes	Context of article identifiable. Key contemporary references included	Yes	Important article that proposes characteristics and a framework that may have the potential for sustainability

1136/bmjopen-2021-019207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

Reference	Authority		Accuracy		Coverage		Objectivity		Date		Significance	
	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment
ty. <i>Health policy and planning</i> . 2015;30(3): 368-385.												
Sonnenreich P, Geisler L. Covering the Cost of the Cure: From Hepatitis C to Cancer, New Therapies Are Straining a System Plagued by Inefficiency. <i>P T</i> . 2016;41(9): 565-589.	Yes	Authors have authority, relevant references included. Published in peer-reviewed journal	Yes	Aim not clear, but brief clear and examples used to explain argument. Peer reviewed	Yes	Focus on United States of America health system	Yes	Author bias not explicitly stated, but standpoint is balanced with research from other researchers and articles	Yes	Context of article identifiable. Key contemporary references included	Yes	Examines the evolving notions of value in healthcare, cost vs cure,
Stoelwinder JU, Paolucci F. Sustaining Medicare	Yes	Authors have authority, relevant references	Yes	Brief clear and met, peer reviewed	Yes	Focus on how Australia can learn from the	Yes	Author bias not explicitly stated, but standpoint	Yes	Context of article identifiable as contemporary	Yes	Extracts the application to Australia

1136/bmjopen-2021-019207 on 21 May 2024. Downloaded from http://bmjopen.bmj.com/ on 20 April 2024 by guest. Protected by copyright.

Reference	Authority		Accuracy		Coverage		Objectivity		Date		Significance	
	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment
through consumer choice of health funds: lessons from the Netherlands. <i>Medical Journal of Australia</i> . 2009;191(1):30-32.		included. Published in peer-reviewed journal				Netherlands health system		is balanced. Authors are affiliated with Australian institutions		Key contemporary references included		of the Netherlands policies.
Stoelwinder JU. Final report of the National Health and Hospitals Reform Commission: will we get the health care governance reform we need? <i>The Medical</i>	Yes	Authors have authority, relevant references included. Published in peer-reviewed journal	Yes	Brief clear and met, no method provided	Yes	Specific to Australian health system	Yes	Author bias not explicitly stated, but standpoint is balanced. Also of note, author declares conflict of interest as they are a board member of	Yes	Context of article identifiable and there is explicit reference to the actions of the National Health and Hospitals Reform Commission and federal	Yes	Timely article suggesting changes to Australian health system

1136/bmjopen-2021-019207 on 25 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

Reference	Authority		Accuracy		Coverage		Objectivity		Date		Significance	
	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment
<i>journal of Australia.</i> 2009;191(7):387-388.								Medibank Private		government response. Key contemporary references included		
Stuart N, Adams J. 2007. The sustainability of Canada's healthcare system: a framework for advancing the debate. <i>Healthcare Quarterly</i> 10: 96–103.	Partially	Authors have authority, relevant references included. Journal not peer-reviewed	Yes	Brief clear and met, no method provided, peer-reviewed	Yes	Focus on Canadian healthcare	Yes	Author bias not explicitly stated, but standpoint is balanced and bias within the healthcare system is identified and discussed	Yes	Context of article identifiable. Key contemporary references included	Yes	Examines the importance of improving the sustainability of the Canadian health system
Taylor M. Australian health care reform: a place for	Partially	Author information not available, journal not	Yes	Clear brief to discuss role of NPs in Australia	Yes	Focus on the role of nurse practitioner	Yes	Author bias not explicitly stated, but standpoint	Yes	Context of article identifiable as of the 2010	Yes	Recognises and emphasises the emerging

1136/bmjopen-2021-019207 on 27 May 2022. Downloaded from <http://bmjopen.bmj.com/> by guest on April 20, 2024 by guest. Protected by copyright.

Reference	Authority		Accuracy		Coverage		Objectivity		Date		Significance	
	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment
nurse practitioners? Aust Nurs J. 2007;15(6):20-23.		peer-reviewed. However, relevant and peer-reviewed references are included		and how the role can be sustainable		rs in Australia		is justified by numerous government reports		Patient Protection and Affordable Care Act. Key contemporary references included		role of the nurse practitioner, and how it can be sustained
Thompson RE. Sustainability as the lynch pin of public policy and industry initiatives. <i>Physician executive</i> . 1998;24(4):52-55.	Partially	Authors are associated with reputable organisations in their field. However, journal is not peer-reviewed	Partially	No clearly stated brief, starts with USA health political history and then to discuss managed care	Yes	American population health	Partially	Authors standpoint is clear in their argument. However, it is not particularly balanced in presentation.	Partially	Context of article identifiable. Majority of references are not contemporary	Yes	Promotes discussion regarding healthcare in the USA, and if and how managed care can be sustainable
Tsasis P. Chronic disease management and the home-care	Yes	Authors have authority, relevant references included.	Yes	Brief clear and met, no method provided	Yes	Focus on health system in Ontario, Canada	Yes	Author bias not explicitly stated, but standpoint	Yes	Context of article identifiable. Key contemporary	Yes	Important article, justified in terms of health of Canadians

1136/bmjopen-2021-019207 on 21 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 28, 2022 by guest. Protected by copyright.

Reference	Authority		Accuracy		Coverage		Objectivity		Date		Significance	
	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment
alternative in Ontario, Canada. Health Serv Manage Res. 2009;22(3):136-139.		Published in peer-reviewed journal						is balanced		references included		, and financial improvement
Van de Pas R, Hill PS, Hammonds R, et al. Global health governance in the sustainable development goals: Is it grounded in the right to health? <i>Global challenges (Hoboken, NJ)</i> . 2017;1(1):47-60.	Yes	Authors have authority, relevant references included. Published in peer-reviewed journal	Yes	Clear brief regarding analysis of the roots of the sustainable development goals in the right to health	Yes	Worldwide, focusing on the sustainable development goals	Yes	Author bias not explicitly stated, but standpoint is balanced and urban bias is discussed	Yes	Context of article identifiable as post-2015 sustainable development goals. Key contemporary references included	Yes	Unique argument, questions if the sustainable development goals satisfy the right to health, and concludes that they do not

1136/bmjopen-2021-019207 on May 22, 2022. Downloaded from http://bmjopen.bmj.com/ on April 20, 2024 by guest. Protected by copyright.

Reference	Authority		Accuracy		Coverage		Objectivity		Date		Significance	
	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment
Veillard J, Denny K. Transformation through Clinical and Social Integration: Meeting the Needs of High Users of Healthcare. <i>Healthcare Papers</i> . 2014;14(2):4-7.	Yes	Authors have authority, relevant references included. Published in peer-reviewed journal	Yes	Clear brief in observations regarding the use of the health system by a minority of the population	Yes	Focus on Canadian health system, especially Ontario, but message is applicable worldwide	Yes	Author bias not explicitly stated, but standpoint is well balanced with arguments on many perspectives discussed	Yes	Context of article identifiable. Key contemporary references included	Yes	Argues five points regarding Ontario's health system and the potential for improvement
Wakerman J, Humphreys JS. Sustainable workforce and sustainable health systems for rural and remote	Yes	Authors have authority, relevant references included. Published in peer-reviewed journal	Yes	Brief clear and met, no method provided	Yes	Specific to rural and remote Australia	Yes	Author bias not explicitly stated, but standpoint is balanced	Yes	Context of article identifiable. Key contemporary references included	Yes	Recognises interdependence of the health system of urban and rural areas

1136/bmjopen-2021-019207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

Reference	Authority		Accuracy		Coverage		Objectivity		Date		Significance	
	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment
Australia. <i>The Medical journal of Australia</i> . 2013;199(5 Suppl):S14-17.												
Woodward, G. L., A. Iverson, R. Harvey, and P. G. Blake. 2015. Implement ation of an agency to improve chronic kidney disease care in Ontario: lessons learned by the Ontario Renal Network.	Yes	Authors have authority, relevant references included. Published in peer-reviewed journal	Yes	The aim is adhered to, but there is no relevant methodology.	Yes	Limits of article known (to identify lessons learnt from the CKD agency to improve care)	Yes	Argument that the CKD system has been effective and sustainable	Yes	Context of article identifiable. Key contemporary references included	Yes	Identifies methods used for improving CKD care and their success

1136/bmjopen-2021-019207 on 24 May 2024. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

Reference	Authority		Accuracy		Coverage		Objectivity		Date		Significance	
	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment
Healthc Q 17 Spec No:44-47.												
Pisco L, Pinto LF. From Alma-Ata to Astana: the path of Primary Health Care in Portugal, 1978-2018 and the genesis of Family Medicine. Ciencia & saude coletiva. 2020	Yes	All authors from reputable institutions		Peer reviewed, but no aim or methodology	Yes	Portugal only	Yes		Yes	Recent references included	Yes	
Ganann R, Peacock S, Garnett A, et al.	Yes	All authors from reputable	Yes	Clear aim and adhered to	Yes	Context clearly stated and clear limits	Yes	Bias not explicitly stated	Yes	Recent references included	Yes	

1136/bmjopen-2021-019207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

Reference	Authority		Accuracy		Coverage		Objectivity		Date		Significance	
	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment
Capacity development among academic trainees in community-based primary health care research: The Aging, Community and Health Research Unit Experience. Prim Health Care Res Dev. 2019;20:e139.		institutions										
Jessup RL, O'Connor DA,	Yes		Yes		Yes		Yes		Yes		Yes	

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

Reference	Authority		Accuracy		Coverage		Objectivity		Date		Significance	
	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment
Putrik P, et al. Alternative service models for delivery of healthcare services in high-income countries: a scoping review of systematic reviews. BMJ open. 2019;9(1): e024385.												
Vainieri M, Noto G, Ferre F, Rosella LC. A Performance Managem	Yes	All authors from reputable institutions	Yes		Yes	Explicitly mentions bias	Yes		Yes	Recent references included	Yes	

For peer review only

1136/bmjopen-2021-019207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 24, 2022 by guest. Protected by copyright.

Reference	Authority		Accuracy		Coverage		Objectivity		Date		Significance	
	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment
ent System in Healthcare for All Seasons? International Journal of Environmental Research & Public Health [Electronic Resource] . 2020;17(15):03												
Braithwaite J, Mannion R, Matsuyama Y, et al. The future of health systems to 2030: a	Yes	All authors from reputable institutions and published extensively in field	Yes	Relevant references	Yes	Includes information on 152 countries	Yes		Yes	Recent references included	Yes	Adds meaningfully and enriches current literature

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2021-019207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

Reference	Authority		Accuracy		Coverage		Objectivity		Date		Significance	
	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment
roadmap for global progress and sustainability. International journal for quality in health care: journal of the International Society for Quality in Health Care. 2018;30(10):823-831.												
Buttigieg SC. Innovation Strategies	Yes	All authors from reputable	Yes		Yes		Yes	Notes need to address contextual	Yes	Recent references included	Yes	

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2021-019207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

Reference	Authority		Accuracy		Coverage		Objectivity		Date		Significance	
	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment
and Health System Guiding Principles to Address Equity and Sustainability in Responsible Innovation in Health Comment on "What Health System Challenges Should Responsible Innovation in Health Address? Insights		institutions						differences				

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2021-019207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

Reference	Authority		Accuracy		Coverage		Objectivity		Date		Significance	
	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment
From an International Scoping Review". Int. 2019;8(9): 570-572												
Byskov J, Maluka S, Marchal B, et al. A systems perspective on the importance of global health strategy developments for accomplishing today's Sustainable Development Goals.	Yes	All authors from reputable institutions worldwide	Yes	Aim clearly stated and met	Yes	Coverage based on aim being met	Yes	Balanced standpoint	Yes	Relevant contemporary references included	Yes	Brings suggested ways forward to achieve the SDGs

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2021-019207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

Reference	Authority		Accuracy		Coverage		Objectivity		Date		Significance	
	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment
Health policy and planning. 2019;34(9):635-645.												
O'Brien N, Li R, Isaranuwatchai W, et al. How can we make better health decisions a Best Buy for all?: Commentary based on discussions at iDSI roundtable on 2 (nd) May 2019 London, UK. Gates	Yes	All authors from reputable colleges, peer reviewed article	Yes	Peer reviewed, authoritative references	Yes	Covers health technology assessment (HTA)	Yes	Bias not explicitly stated but balanced standpoint with WHO and country and local evidence	Yes	Contemporary references included	Yes	Adds to the literature

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2021-019207 on 24 May 2022
Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

Reference	Authority		Accuracy		Coverage		Objectivity		Date		Significance	
	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment
open research. 2019;3:15 43.												
Hanney S, Kanya L, Pokhrel S, Jones T, Boaz A. WHO Health Evidence Network Synthesis Reports. What is the evidence on policies, interventions and tools for establishing and/or strengthening national health	Yes	WHO authority, as well as individual authors	Yes	Authoritative, clear aim met	Yes	Scoping review parameters well defined	Yes	Bias not explicitly stated but balanced standpoint with WHO and country and local evidence	Yes	Contemporary references included	Yes	Has considerations for policy analysis in many countries

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2021-019207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on 20 April 2024 by guest. Protected by copyright.

Reference	Authority		Accuracy		Coverage		Objectivity		Date		Significance	
	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment
research systems and their effectiveness? Copenhagen: WHO Regional Office for Europe © World Health Organization 2020.; 2020												
Braithwaite J, Vincent C, Nicklin W, Amalberti R. Coping with more people with more illness. Part 2: new generation	Yes	Well published authors in the field	Yes	Authoritative references in the field, aim strategy met	Yes	Global, but strategy for ISQua well defined	Yes	Balanced standpoint, evidence from sources from around the world	Yes	Context well defined, contemporary references used	Yes	Important paper adding to literature

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2021-019207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 29, 2022 by guest. Protected by copyright.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

Reference	Authority		Accuracy		Coverage		Objectivity		Date		Significance	
	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment
of standards for enabling healthcare system transformation and sustainability. International Journal for Quality in Health Care. 2019;31(2):159-163												
Braithwaite J, Zurynski Y, Ludlow K, Holt J, Augustsson H, Campbell M.	Yes	Well published authors in the field	Yes	Authoritative references	Yes	Global but well defined protocol	Yes	Balanced standpoint, bias explicitly addressed	Yes	Date used well defined, contemporary references used	Yes	Significant and important for the field

For peer review only

1136/bmjopen-2021-019207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

Reference	Authority		Accuracy		Coverage		Objectivity		Date		Significance	
	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment
Towards sustainable healthcare system performance in the 21st century in high-income countries: a protocol for a systematic review of the grey literature. BMJ open. 2019;9(1):e025892												
Martiniuk AL, Colbran R, Ramsden R, et al. Capability	Yes	Authoritative authors	Yes	Authoritative references	Yes	Coverage well defined	Yes	Balanced standpoint	Yes	Contemporary references included	Yes	Important and adds to the field

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2021-019207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

Reference	Authority		Accuracy		Coverage		Objectivity		Date		Significance	
	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment
... what's in a word? Rural Doctors Network of New South Wales Australia is shifting to focus on the capability of rural health professionals. Rural and remote health. 2020;20(3):5633												
Rudnicka E, Napierała P, Podfigurna A, Męczekal	Yes	Peer reviewed journal article	Yes	Peer-reviewed	Yes	Aimed to coverage global perspective and achieved it	Yes	Authors standpoint is clear, relatively balance presentation	Yes		Yes	

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2021-019207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 21, 2022 by guest. Protected by copyright.

Reference	Authority		Accuracy		Coverage		Objectivity		Date		Significance	
	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment
ski B, Smolarczyk R, Grymowicz M. The World Health Organization (WHO) approach to healthy ageing. <i>Maturitas</i> . 2020;139:6-11.												
Walsh K. Strengthening primary care: the role of e-learning. <i>Educ</i> . 2019;30(5):267-269.	Yes	Author has a strong publication record in peer reviewed journals	Yes	Peer reviewed	Yes		Yes	No bias stated but is a balanced commentary	Yes	Contemporary references included, date discernible by subject matter	Yes	
De Santis M. Integrated	Yes	Authors both appear to	Yes	Peer reviewed	Yes	Looking at studies published	Yes	No bias stated,	Yes	Recent references included,	Yes	

1136/bmjopen-2021-019207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on 20 April 2024 by guest. Protected by copyright.

Reference	Authority		Accuracy		Coverage		Objectivity		Date		Significance	
	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment
care for healthcare sustainability for patients living with rare diseases. Annali dell'Istituto superiore di sanita. 2019;55(3):276-282.		have roles in prominent rare disease organisations in Europe				between 2000 and 2018. Search terms provided, both grey lit and PR included		standpoint is clear		date discernible		
Ferrelli RM, Fantini B, Taruscio D. Health systems sustainability for rare diseases. Preface. Annali dell'Istituto	Yes	Authors either work for rare diseases network in Europe or in the ministry of health in Italy	Yes	Book chapter-editors are all from reputable organisations	Yes	Europe specific with focus on rare diseases	Yes	No bias stated, standpoint is clear	Yes	Contemporary references, the context is very clear	Yes	

1136/bmjopen-2021-019207 on 24 May 2022
Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

Reference	Authority		Accuracy		Coverage		Objectivity		Date		Significance	
	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment
superiore di sanita. 2019;55(3):249-250.												
Steenhuis S, Struijs J, Koolman X, Ket J, E VDH. Unraveling the Complexity in the Design and Implementation of Bundled Payments: A Scoping Review of Key Elements From a Payer's Perspective. Milbank	Yes	Authors have peer reviewed publication history	Yes	Aim stated, clear methodology	Yes	Limits stated in the methodology- review related to payment methods, relevant to OECD countries	Yes	Authors address risk of bias, there is a balanced standpoint presented	Yes	Contemporary references included, date discernible throughout the text	Yes	

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2021-019207 on 24 May 2024. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

Reference	Authority		Accuracy		Coverage		Objectivity		Date		Significance	
	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment
Quarterly. 2020;98(1):197-222.												
Nikolić B. Applicability of European Union Competition Law to Health Care Providers: The Dividing Line between Economic and Noneconomic Activities. Journal of health politics, policy and law. 2020.	Yes	Contemporary references, author from reputable source	Yes	Aim clearly stated and met	Yes	Clear coverage within EU	Yes	Authors opinion is balanced by contemporary references and different standpoints	Yes	Context clear contemporary references present	Yes	Important article that helps make the legal uncertainty clear
Niraula S. Strategizi	Yes	Authoritative author,	Yes	Clearly stated	Yes	Coverage specific to	Yes	balanced standpoint	Yes	Universal healthcare	Yes	Adds context,

1136/bmjopen-2021-019207 on 24 May 2024. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

Reference	Authority		Accuracy		Coverage		Objectivity		Date		Significance	
	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment
ng health technology assessment for containment of cancer drug costs in a universal health care system: Case of the pan-Canadian Oncology Drug Review. Cancer. 2019;125(18):3100-3103.		detailed reference list		brief, peer reviewed article		Canadian oncology drug review				system in Canada since 1968, and has been deduced with contemporary references		important yet specific article
Wurcel V, Cicchetti A, Garrison L, et al.	Yes	Authors experts in the field	Yes	Peer-reviewed article, clear aim and	Yes	Coverage specific to the VODI published articles	Yes	Balanced standpoint with examples	Yes	Contemporary references included,	Yes	Important addition regarding value of diagnostic

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2021-019207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

Reference	Authority		Accuracy		Coverage		Objectivity		Date		Significance	
	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment
The Value of Diagnostic Information in Personalised Healthcare: A Comprehensive Concept to Facilitate Bringing This Technology into Healthcare Systems. Public Health Genomics . 2019;22(1-2):8-15.				methodology				and references				information (VODI)

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2021-019207 on 24 May 2023. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

Reference	Authority		Accuracy		Coverage		Objectivity		Date		Significance	
	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment
Cunningham FC, Ranmuthugala G, Westbrook JI, Braithwaite J. Tackling the wicked problem of health networks: the design of an evaluation framework. <i>BMJ open</i> . 2019;9(5):e024231.	Yes	Authors authoritative in field, detailed reference list	Yes	Clearly stated aim and methods adhered to. Work is representative of the field	Yes	Evaluations of systematic reviews to date	Yes	Balanced standpoint	Yes	Date discernible, contemporary references present	Yes	Meaningful contribution to literature
Embi PJ, Richesson R, Tenenbaum J, et al. Reimagining the	Yes	Authoritative authors from well-respected institutions	Yes	Clear aim highlighted and met	Yes	Specific to covering what was discussed and the findings from the	Yes	Balanced standpoint with contributions from over 70 participant	Yes	Discernible from references as well as timing of meeting	Yes	Synthesised findings from meeting and adds to literature

1136/bmjopen-2021-019207 on April 29, 2022. Downloaded from http://bmjopen.bmj.com/ on April 29, 2022. For guest protection by copyright.

Reference	Authority		Accuracy		Coverage		Objectivity		Date		Significance	
	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment
research-practice relationship: policy recommendations for informatics-enabled evidence-generation across the US health system. JAMIA open. 2019;2(1): 2-9.						2016 AMIA meeting		s at meeting		reported on May 2022.		
Park YL, Canaway R. Integrating Traditional and Complementary Medicine with	Yes	Authoritative authors	Yes	Peer reviewed journal	Yes	limits clearly stated with Western Pacific region	Yes	Bias not explicitly stated, but expert balanced standpoint drawing on experiences from	Yes	Date discernible, contemporary references present	Yes	Interesting and unique article, adds to the literature

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2021-019207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

Reference	Authority		Accuracy		Coverage		Objectivity		Date		Significance	
	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment
National Healthcare Systems for Universal Health Coverage in Asia and the Western Pacific. Health syst. 2019;5(1): 24-31.								many countries				
Quaglio G, Figueras J, Mantoan D, et al. An overview of future EU health systems. An insight into governanc	Yes	Authors have all previously published extensively in this field	Yes	Published in peer reviewed journal. Aim isn't explicitly presented, but article is referencing/ reporting on workshop	Yes	EU specific context	Yes	Author bias isn't stated, but discussion presents clear standpoint and is balanced	Yes	Reference workshop in 2017 that inspired the publication, references recent literature	Yes	Contributes meaningfully to discussion of HSS in the EU

1136/bmjopen-2021-019207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

Reference	Authority		Accuracy		Coverage		Objectivity		Date		Significance	
	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment
e, primary care, data collection and citizens' participation. Journal of public health (Oxford, England)				held in parliament								
Lehoux P, Roncarolo F, Silva HP, Boivin A, Denis JL, Hebert R. What Health System Challenges Should Responsible Innovation in Health	Yes	Authors have strong publication record in PR journals	Yes	Aim stated, methods clearly stated, published in PR journal aim stated, methods clearly stated, published in PR journal	Yes	International scoping review with well defined parameters and search strategy	Yes	Bias isn't stated but limitations of review are, and standpoint is balanced	Yes	Articles included for review span 2000-2016	Yes	Very detailed scoping review, identifies a number of challenges facing global health systems

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2021-019207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 25, 2022 by guest. Protected by copyright.

Reference	Authority		Accuracy		Coverage		Objectivity		Date		Significance	
	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment
Address? Insights From an International Scoping Review. Int. 2019;8(2): 63-75.												
Editorial. Healthcare quarterly (Toronto, Ont.). 2020;22(4)		Authors not stated- editors of Healthcare Quarterly-a		Commentary- no aim or methods	Yes	Canada specific	Yes	Standpoint clear	Yes	Context is identifiable because of contemporary references		
Abimbola S, Baatiema L, Bigdeli M. The impacts of decentralization on health system	Yes	Authors from reputable institutions with good publication records in peer	Yes	Clear methodology/ search strategy. In peer reviewed journal. No aim explicitly stated	Yes	Wide coverage-looking at low/middle and high income countries	Yes	Author bias not stated, but balanced standpoint	Yes	Context of article identified	Yes	Identified three mechanisms by which decentralization may influence equity,

1136/bmjopen-2021-019207 on 24 May 2022. Downloaded from http://bmjopen.bmj.com/ on April 28, 2022. Guest. Protected by copyright.

Reference	Authority		Accuracy		Coverage		Objectivity		Date		Significance	
	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment
equity, efficiency and resilience: a realist synthesis of the evidence. Health Policy & Planning. 2019;34(8):605-617		reviewed journals										efficiency, and resilience in 25 countries (low middle and high income)
Craig N, Robinson M. Towards a preventative approach to improving health and reducing health inequalities: a view from Scotland.	Yes	Both authors affiliated with the NHS	Yes	no aims or method stated but is peer reviewed and well referenced	Yes	Scotland specific	Yes	Author bias not stated but viewpoint is clear	Yes	Context easy to discern based on references and analysis of trends in previous 10-15 years	Yes	Useful in Scottish context

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2021-019207 on 24 May 2022
Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

Reference	Authority		Accuracy		Coverage		Objectivity		Date		Significance	
	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment
Public health. 2019;169: 195-200.												
Costa-Font J, Levaggi R. Innovation, aging, and health care: Unraveling "silver" from "red" herrings? Health Econ. 2020;29 Suppl 1:3-7.	Yes	Both authors have strong publication history and are associated with reputable institutions. Published in peer reviewed journal	Yes	Peer reviewed, no aim or method stated	Yes	special issue presents papers presented at a workshop	Yes	There isn't a bias stated	Yes	discernible from references	Yes	
Derakhshani N, Doshman gir L, Ahmadi A, Fakhri A,	Yes	Authors have strong publication history	Yes	Detailed methods and search strategy	Yes	Parameters defined in search strategy	Yes	Bias not stated, viewpoint clear	Yes	Context is discernible	Yes	

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

Reference	Authority		Accuracy		Coverage		Objectivity		Date		Significance	
	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment
Sadeghi-Bazargani H, Gordeev VS. Monitoring Process Barriers and Enablers Towards Universal Health Coverage Within the Sustainable Development Goals: A Systematic Review and Content Analysis. ClinicoEconomics and outcomes												

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2021-019207 on 24 May 2022
Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

Reference	Authority		Accuracy		Coverage		Objectivity		Date		Significance	
	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment
research : CEOR. 2020;12:4 59-472												
Clancy C. Creating World-Class Care and Service for Our Nation's Finest: How Veterans Health Administration Diffusion of Excellence Initiative Is Innovating and Transforming Veterans		Author affiliated with VA, no publication record	Yes	In peer reviewed journal	Yes	Restricted to VA			Yes	Date and content discernible from text		

1136/bmjopen-2021-019207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

Reference	Authority		Accuracy		Coverage		Objectivity		Date		Significance	
	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment
Affairs Health Care. Perm. 2019;23												
Marcotte LM, Moriates C, Wolfson DB, Frankel RM. Professionalism as the Bedrock of High-Value Care. Academic Medicine. 2020;95(6):864-867.	Yes	Authors have strong publication record	Yes	Peer reviewed	Yes	No limits stated, but is restricted to looking at healthcare professionals (in US context)	Yes	Bias not explicitly stated, but standpoint is balanced	Yes	Date/content disclosed from text	Yes	
Witter S, Palmer N, Balabano va D, et al. Health	Yes	Authors have strong publication record	Yes	Peer reviewed, but there is no aims or methods	Yes	Looked at studies published between 2000 and 2018	Yes	Acknowledgement of biases and limitations; well	Yes	Content disclosed from references	Yes	Contributes to the literature

1136/bmjopen-2021-019207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

Reference	Authority		Accuracy		Coverage		Objectivity		Date		Significance	
	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment
system strengthen ing- Reflection s on its meaning, assessmen t, and our state of knowledg e. Internatio nal Journal of Health Planning & Managem ent. 2019;34(4):e1980-e1989						focussed on interventio ns in LMIC		balanced standpoint				
Sturmsberg JP. Resilience for health- an emergent property	Yes	Author has publication record in this field	Yes	Peer reviewed, but there is no aims or methods		Limits not stated		No bias stated		No discernible date	Yes	Contributes to conversatio n around health system resilience

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2021-019207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

Reference	Authority		Accuracy		Coverage		Objectivity		Date		Significance	
	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment
of the "health systems as a whole". Journal of evaluation in clinical practice. 2018;24(6):1323-1329.												
Thistlethwaite JE, Dunston R, Yassine T. The times are changing: workforce planning, new health-care models and the need for interprofessional	Yes	Authors from reputable institutions	Yes	Peer reviewed	Yes	Specific to Australia/ the Australian health system	Yes	Bias not explicitly stated, but standpoint is balanced	Yes	References contemporary reports about Australian health system. Content is discernible	Yes	

For peer review only

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

1136/bmjopen-2021-019207 on 24 May 2022. Downloaded from <http://bmjopen.bmj.com/> on April 20, 2024 by guest. Protected by copyright.

Reference	Authority		Accuracy		Coverage		Objectivity		Date		Significance	
	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment	Yes or no?	Comment
education in Australia. Journal of interprofessional care. 2019;33(4):361-368.												
Iskrov G, Stefanov R, Ferrelli RM. Health systems for rare diseases: financial sustainability. Annali dell'Istituto superiore di sanita. 2019;55(3):270-275	Yes	Authors have strong publication record	Yes	No clear aim stated, but there is clear methodology and paper has been peer reviewed	Yes	Covers health systems in EU member states	Yes	Balanced standpoint	Yes	References contemporary reports about health systems in the EU - context is very clear	Yes	Contributes to the literature

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

PRISMA CHECKLIST

Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) Checklist

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
TITLE			
Title	1	Identify the report as a scoping review.	4
ABSTRACT			
Structured summary	2	Provide a structured summary that includes (as applicable): background, objectives, eligibility criteria, sources of evidence, charting methods, results, and conclusions that relate to the review questions and objectives.	4-5
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known. Explain why the review questions/objectives lend themselves to a scoping review approach.	7-8
Objectives	4	Provide an explicit statement of the questions and objectives being addressed with reference to their key elements (e.g., population or participants, concepts, and context) or other relevant key elements used to conceptualize the review questions and/or objectives.	8
METHODS			
Protocol and registration	5	Indicate whether a review protocol exists; state if and where it can be accessed (e.g., a Web address); and if available, provide registration information, including the registration number.	N/A
Eligibility criteria	6	Specify characteristics of the sources of evidence used as eligibility criteria (e.g., years considered, language, and publication status), and provide a rationale.	9-10
Information sources*	7	Describe all information sources in the search (e.g., databases with dates of coverage and contact with authors to identify additional sources), as well as the date the most recent search was executed.	9-10, Additional file 1
Search	8	Present the full electronic search strategy for at least 1 database, including any limits used, such that it could be repeated.	Additional file 1
Selection of sources of evidence†	9	State the process for selecting sources of evidence (i.e., screening and eligibility) included in the scoping review.	9-11
Data charting process‡	10	Describe the methods of charting data from the included sources of evidence (e.g., calibrated forms or forms that have been tested by the team before their use, and whether data charting was done independently or in duplicate) and any processes for obtaining and confirming data from investigators.	N/A
Data items	11	List and define all variables for which data were sought and any assumptions and simplifications made.	Table 1, page 10
Critical appraisal of individual sources of evidence§	12	If done, provide a rationale for conducting a critical appraisal of included sources of evidence; describe	11



SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
		the methods used and how this information was used in any data synthesis (if appropriate).	
Synthesis of results	13	Describe the methods of handling and summarizing the data that were charted.	9-11
RESULTS			
Selection of sources of evidence	14	Give numbers of sources of evidence screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally using a flow diagram.	11-13
Characteristics of sources of evidence	15	For each source of evidence, present characteristics for which data were charted and provide the citations.	11-13
Critical appraisal within sources of evidence	16	If done, present data on critical appraisal of included sources of evidence (see item 12).	13
Results of individual sources of evidence	17	For each included source of evidence, present the relevant data that were charted that relate to the review questions and objectives.	11-21
Synthesis of results	18	Summarize and/or present the charting results as they relate to the review questions and objectives.	13-21
DISCUSSION			
Summary of evidence	19	Summarize the main results (including an overview of concepts, themes, and types of evidence available), link to the review questions and objectives, and consider the relevance to key groups.	22-25
Limitations	20	Discuss the limitations of the scoping review process.	25
Conclusions	21	Provide a general interpretation of the results with respect to the review questions and objectives, as well as potential implications and/or next steps.	26
FUNDING			
Funding	22	Describe sources of funding for the included sources of evidence, as well as sources of funding for the scoping review. Describe the role of the funders of the scoping review.	28

JBI = Joanna Briggs Institute; PRISMA-ScR = Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews.

* Where *sources of evidence* (see second footnote) are compiled from, such as bibliographic databases, social media platforms, and Web sites.

† A more inclusive/heterogeneous term used to account for the different types of evidence or data sources (e.g., quantitative and/or qualitative research, expert opinion, and policy documents) that may be eligible in a scoping review as opposed to only studies. This is not to be confused with *information sources* (see first footnote).

‡ The frameworks by Arksey and O'Malley (6) and Levac and colleagues (7) and the JBI guidance (4, 5) refer to the process of data extraction in a scoping review as data charting.

§ The process of systematically examining research evidence to assess its validity, results, and relevance before using it to inform a decision. This term is used for items 12 and 19 instead of "risk of bias" (which is more applicable to systematic reviews of interventions) to include and acknowledge the various sources of evidence that may be used in a scoping review (e.g., quantitative and/or qualitative research, expert opinion, and policy document).

From: Tricco AC, Lillie E, Zarin W, O'Brien KK, Colquhoun H, Levac D, et al. PRISMA Extension for Scoping Reviews (PRISMA-ScR): Checklist and Explanation. *Ann Intern Med.* 2018;169:467–473. doi: 10.7326/M18-0850.



St. Michael's

Inspired Care.
Inspiring Science.

For peer review only - <http://bmjopen.bmj.com/site/about/guidelines.xhtml>