

**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. Braithwaite. 2016.	2016	Worldwide	ED			Ageing population, patients with comorbidities, and expensive health conditions to treat			
Ament SMC,	2014	Netherlands	EM					The importance of internal	

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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		

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						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,		

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						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		

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					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. Amadeo, 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			

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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			

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				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 inter-disciplinary team to ensure	Pharmacists should be involved in medication counselling during the discharge process, and follow-up after the transition to	

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							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. a regulated semi-competitive health model, whereby the		



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						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	

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				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	

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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 mentors being role models and legacies for the future		

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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	

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				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 Rosi 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			

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						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		

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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 structures 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			

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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		



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						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		

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							health system, learn from peers and from evidence, and champion a system that values accountability		
Foo, C. Y., K. K. Lim, S. Sivasamp u, 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			

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				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)		

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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)	

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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		

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						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		

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					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			

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				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		



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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					

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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		

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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	
Liaropoulos L,	2015	Worldwide	ED			Ageing population, the			It was suggest

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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			

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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		

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						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'	

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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,	

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								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			



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						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 under-served areas, create an integrated health record service, devise alternatives to the fee-for-service model, increase funding for community services, give health professionals		

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							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			

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					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		

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						services to act within environmental boundaries and increased levels of scrutiny			
Peric, N., M. M. Hofmarcher-Holzacker, 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 involved a peer education program for health professionals		

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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			

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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."	

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						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		

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						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	



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				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	

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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	

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						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			

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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		

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				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 a value-based formulary in pharmacies		

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						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	

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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,		

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						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		



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							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		

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							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. MacDonald, 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	

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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		

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							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	

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								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		

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						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		

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							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	

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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			



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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 a 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		

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							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 programs,		

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							ensuring capacity for meaningful patient engagement, mobilising existing expertise, support 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		

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				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			

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					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 programs 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			

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						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	

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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	

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								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,		



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							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:		

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							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					

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n H, Campbell M. 2019.									
Rudnicka E, Napierała P, Podfigurna A, Męczekalski 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	

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								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				

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					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				

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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,		

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							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	

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								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.	



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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		

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							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.	

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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.		

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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			

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				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	

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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		

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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	

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						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	



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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		

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						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		

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						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"		

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						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		

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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 policy mechanisms 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. Healthcare quarterly (Toronto, Ont.). 2020;22(4)	2020	Canada	ED	Health systems need the right distribution of educated health professionals who have the right	Yes	Yes	Yes	Yes	

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				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					

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				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			

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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			



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					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	

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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			

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				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					

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				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. <sup>54</sup> To reach social sustainability and providing social infrastructure, as well as providing sustainable development,	

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						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	

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							difference every day for veterans, this article highlights 4 different practice areas: 1) direct scheduling, 2) 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	

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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".	

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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					



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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 on 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		

<i>Article demographics</i>				<i>Reason for article inclusion and summary of results</i>					
<b>Reference</b>	<b>Year</b>	<b>Country</b>	<b>Type *</b>	<b>1. Definition of SPHS</b>	<b>2. Measuring SPHS</b>	<b>3. Challenges to SPHS</b>	<b>4. Improvements to SPHS</b>	<b>5. Sustaining or scaling change for SPHS</b>	<b>6. Other</b>
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>					
<b>Reference</b>	<b>Year</b>	<b>Country</b>	<b>Type *</b>	<b>1. Definition of SPHS</b>	<b>2. Measuring SPHS</b>	<b>3. Challenges to SPHS</b>	<b>4. Improvements to SPHS</b>	<b>5. Sustaining or scaling change for SPHS</b>	<b>6. Other</b>
						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.