

PEER REVIEW HISTORY

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ARTICLE DETAILS

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| TITLE (PROVISIONAL) | Identifying Priorities for Primary Care Investment in Ireland through a Population Based Analysis of Avoidable Hospital Admissions for Ambulatory Care Sensitive Conditions (ACSC) |
| AUTHORS | McDarby, Geraldine; Smyth, Breda |

VERSION 1 - REVIEW

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| REVIEWER | Michael E, Thompson Department of Public Health Sciences UNC Charlotte Cahrlotte, NC USA |
| REVIEW RETURNED | 01-Feb-2019 |

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| GENERAL COMMENTS | <p>To the Editor(s):</p> <p>Below is my review of the Avoidable Hospital Admissions; Using hospital data for Ambulatory Care Sensitive Conditions (ACSC) to identify priorities for primary care investment in Ireland manuscript</p> <p>This thoughtful and generally well-written manuscript addresses the increasingly critical issue of hospital resources consumed by conditions that would have been prevented or ameliorated by effective primary care. The manuscript extends the use of a data driven systems perspective to primary care priority setting and is of moderate interest and importance.</p> <p>The manuscript loses focus from its stated purpose and includes several redundant tables/figures. A substantive reorganization and focusing of the content will increase the value of this paper to the journal's readership.</p> <p>Recommendation: Consistent with my structured review below, my recommendation is MAJOR REVISION.</p> <p>General: [comment, no action needed] My preference is to avoid passive voice and 'there is' construction though active, first person voice.</p> <p>Title: The title is adequate. I think the authors intended to use a colon rather than a semi-colon.</p> <p>A tighter formulation to consider might be: Identifying Priorities for Primary Care Investment in Ireland Though Analysis of Avoidable Hospital Admissions for Ambulatory Care Sensitive Conditions (ACSC)</p> |
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| | <p>Abstract: [Minor concern] The abstract effectively summarizes the manuscript, but like the manuscript, strays from the stated objective. Two recommendations for strengthening it</p> <ol style="list-style-type: none"> 1) The second sentence (p1, line 30) seems contradictory (a robust primary system would minimize avoidable hospitalizations). I think a slight rephrasing is needed consistent with whether the authors intend to imply the Irish primary care system is robust or not. 2) The conclusion stops short of emphasizing a specific course of action, undermining the perceived value of an otherwise strong analysis. Consider revising consistent with comments about the results and conclusions in the body below. <p>Summary: [Minor concern] The summary suffers from the same lack of emphasis on the conclusion/implications of the analysis. As written, it makes it seem as if establishing bed-days analyses as an appropriate methodology was the study purpose.</p> <p>Introduction: The introduction provides a concise, well-referenced summary regarding ACSC and the rippling effects of poor primary care on hospitalizations and system costs, an increasing concern in light of an aging population and other demographic shifts.</p> <p>Methods: [Minor concern] The methods, while rudimentary, are appropriate and robust for the stated objective. Additional detail about how the prioritization exercise established contributors to bed days is needed.</p> <p>Results: [Major concern] Reflecting the lack of specificity noted about methodology above, the presentation of findings associated with Table 1 do not effectively convey which contributors are important (the paper's stated purpose). More emphasis is placed on Table 2/Figure 1, the secondary finding that the situation is gradually worsening over time. In addition, Table 1 becomes superfluous once the more comprehensive Table 3 is introduced.</p> <ul style="list-style-type: none"> • Table 3 should replace Table 1, perhaps with total (all age) columns moved to the left, ahead of the age specific break-downs. • Revise the text to emphasize the emerging key contributors and co-locate the age-strata results (and what is now Figure 2) with the overall results • What is now Figure 1 largely duplicates Table 2. Consider omitting one of them. <p>Discussion: [Major concern] The discussion is not effectively organized to convey the study's important findings and messages. Consequently, the paper does not support its underlying assertion [that an effective primary care system is central to addressing preventable hospitalizations. Reorganizing the discussion of the paper's findings can demonstrate that the contributors to hospitalizations for ACSC all can be reduced, thereby reducing demand on the expensive limited resource that is hospital beds, by up to 20%</p> <p>The opening passage (p. 9, lines 6-18) is a restatement of the introductory argument for why avoiding unnecessary hospitalizations rather than a summary of the paper's main findings about the contributors to that problem. That passage</p> |
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| | <p>might be better place toward the end in justifying the potential impact of the study's findings.</p> <p>As organized the paper's important findings and messages are lost.</p> <p>First summarize the key findings/determinants</p> <ul style="list-style-type: none"> • 20% of hospital day are for ACSC • Adults over 65 account for 69.1% of ACSC bed days • Respiratory conditions such asaccount for 50% of ACSC bed days • Pyeloneophritis accounts for nearly 14% of ACSC bed days <p>Then systematically discuss strategies that address those determinants...</p> <p>References: Cited references are adequate/appropriate.</p> |
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| REVIEWER | Richard Urbano Vanderbilt University Medical Center |
| REVIEW RETURNED | 12-Feb-2019 |

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| GENERAL COMMENTS | <p>The manuscript examines Irish National HIPE data to evaluate Ambulatory Care Sensitive Conditions.</p> <p>The primary finding is that "influenza and pneumonia, COPD and pyelonephritis account for two thirds of these bed days".</p> <p>The authors argue that enhanced primary care should be able to reduce the rates of these conditions.</p> <p>Influenza and pneumonia vaccines could reduce the number of hospital bed days. The differences in immunization rates in Ireland and the UK are described on page 9 in the discussion. It would be easier to see the differences in rates if the data were presented in a table (Country X [Influenza, Pneumonia, Pneumonia Bed days]). Also, a stronger case for increased immunizations could be made if it is possible to say "An x% increasingly in influenza and pneumonia vaccination would result in a y% reduction in hospital bed days."</p> <p>Other than improved immunizations, what specific enhancements to primary care would have the biggest impact on hospitalization?</p> <p>The monochrome figure on page 22 "Bed day rate by 5 year age group..." is difficult to follow. It would be better, if lines and symbols instead of filled areas was used represent the 5 conditions. Also, vertical grid lines at 10 year intervals would be helpful.</p> |
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VERSION 1 – AUTHOR RESPONSE

Reviewer 1:

1. It would be easier to see the differences in rates if the data were presented in a table (Country X [Influenza, Pneumonia, Pneumonia Bed days]).

A table including the comparative vaccination rates is included for 2012/13, for which comparative pneumonia admission data is also available, and 2017.

2. Also, a stronger case for increased immunizations could be made if it is possible to say "An x% increasingly in influenza and pneumonia vaccination would result in a y% reduction in hospital bed days."

Greater detail on the effectiveness of vaccinations is included. It is not currently possible to include a statement as suggested above. There is a lack of consensus and methodological limitations associated with studies in the area of quantitative impact of these vaccinations given the many confounding elements. This analysis has not been carried out in the Irish context and is beyond the scope of this paper.

3. Other than improved immunizations, what specific enhancements to primary care would have the biggest impact on hospitalization?

Addition of : "Evidence based models of care for influenza and pneumonia include integrated care programmes which include prevention"

This paper recommends investment in developing integrated care programmes for respiratory conditions at scale in Ireland as current provision is on an ad hoc basis.

4. The monochrome figure on page 22 "Bed day rate by 5 year age group..." is difficult to follow. It would be better, if lines and symbols instead of filled areas was used represent the 5 conditions. Also, vertical grid lines at 10 year intervals would be helpful.

An alternative figure including the above specifications has been included

Reviewer 2:

1. A tighter formulation of the title was suggested

Title revised as suggested: Identifying Priorities for Primary Care Investment in Ireland through Analysis of Avoidable Hospital Admissions for Ambulatory Care Sensitive Conditions (ACSC)

2. Abstract: [Minor concern] The abstract effectively summarizes the manuscript, but like the manuscript, strays from the stated objective. Two recommendations for strengthening it: The second sentence (p1, line 30) seems contradictory (a robust primary system would minimize avoidable hospitalizations). I think a slight rephrasing is needed consistent with whether the authors intend to imply the Irish primary care system is robust or not.

Rephrased: Investment in primary care can prevent hospital admissions of Ambulatory Care Sensitive Conditions (ACSCs)

3. The conclusion stops short of emphasizing a specific course of action, undermining the perceived value of an otherwise strong analysis. Consider revising consistent with comments about the results and conclusions in the body below.

Specific recommendations now included in conclusion: Within the over 65 age cohort, the current analysis supports the increased uptake of vaccinations in particular the pneumococcal vaccine, in order to reduce the burden of infection and hospitalisations among this cohort. In relation to COPD, the analysis supports the delivery of an integrated care programme from prevention to rehabilitation at scale with a focus on vaccination and pulmonary rehabilitation. Further exploration of pyelonephritis is necessary in order to ascertain patient profile and appropriateness of admissions.

4. Summary: [Minor concern] The summary suffers from the same lack of emphasis on the conclusion/implications of the analysis. As written, it makes it seem as if establishing bed-days analyses as an appropriate methodology was the study purpose.

Summary removed as per editorial comments

5. Methods: [Minor concern] The methods, while rudimentary, are appropriate and robust for the stated objective. Additional detail about how the prioritization exercise established contributors to bed days is needed.

Sentence rephrased to include greater detail: "A prioritisation exercise in which all 19 conditions were ranked in terms of their contribution to total, age specific bed days and bed day rates in 2017 was undertaken to identify the most significant contributors within Irish hospitals. The top 5 ranking conditions were then examined further." There are represented in Pie Charts new figure 1.

6. Results: [Major concern] Reflecting the lack of specificity noted about methodology above, the presentation of findings associated with Table 1 do not effectively convey which contributors are important (the paper's stated purpose). More emphasis is placed on Table 2/Figure 1, the secondary finding that the situation is gradually worsening over time. In addition, Table 1 becomes superfluous once the more comprehensive Table 3 is introduced.

Table 3 should replace Table 1, perhaps with total (all age) columns moved to the left, ahead of the age specific break-downs. • Revise the text to emphasize the emerging key contributors and co-locate the age-strata results (and what is now Figure 2) with the overall results • What is now Figure 1 largely duplicates Table 2. Consider omitting one of them.

Table 1 omitted and replaced with revised table 3 with totals shifted left

New Figure 1. Introduced to emphasise the key contributors in total and by age-strata

Text revised (Results) and amended to emphasize the three primary contributors with trend analysis co-located within the discussion

7. Discussion: [Major concern] The discussion is not effectively organized to convey the study's important findings and messages. Consequently, the paper does not support its underlying assertion [that an effective primary care system is central to addressing preventable hospitalizations. Reorganizing the discussion of the paper's findings can demonstrate that the contributors to hospitalizations for ACSC all can be reduced, thereby reducing demand on the expensive limited resource that is hospital beds, by up to 20%

The opening passage (p. 9, lines 6-18) is a restatement of the introductory argument for why avoiding unnecessary hospitalizations rather than a summary of the paper's main findings about the contributors to that problem. That passage might be better placed toward the end in justifying the potential impact of the study's findings.

Discussion reorganized as suggested to emphasize important findings and messages. The opening passage of the discussion now gives a summary of the paper's main findings about the contributors to the problem.

The argument for why avoiding unnecessary hospitalizations has been moved to after the presentation of main findings and recommendations in order to support justification as suggested

VERSION 2 – REVIEW

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| REVIEWER | Michael Thompson UNC Charlotte, USA |
| REVIEW RETURNED | 10-Jun-2019 |

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| GENERAL COMMENTS | The authors have effectively addressed my prior comments. Please review all 3 tables tables for inconsistencies in the number of decimal places reported within a given column and decimal alignment of reported data within a column |
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VERSION 2 – AUTHOR RESPONSE

Reviewer(s)' Comments to Author:

Please state any competing interests or state 'None declared': None Declared

Competing interests statement revised to 'None Declared'

Please review all 3 tables tables for inconsistencies in the number of decimal places reported within a given column and decimal alignment of reported data within a column

All tables have been revised and are now consistent in the number of decimal places reported within columns and decimal alignment within columns