



Comparative Effectiveness Review Disposition of Comments Report

Title: *Management of High-Need, High-Cost Patients: A “Best Fit” Framework Synthesis, Realist Review, and Systematic Review*

Draft report available for public comment from February 26, 2021, to March 26, 2021.

Citation: Berkman ND, Chang E, Seibert J, Ali R, Porterfield D, Jiang L, Wines R, Rains C, Viswanathan M. Management of High-Need, High-Cost Patients: A “Best Fit” Framework Synthesis, Realist Review, and Systematic Review. Comparative Effectiveness Review No. 246. (Prepared by the RTI International–University of North Carolina at Chapel Hill Evidence-based Practice Center under Contract No. 290-2015-00011-I.) AHRQ Publication No. 21(22)-EHC028. Rockville, MD: Agency for Healthcare Research and Quality; October 2021. DOI: 10.23970/AHRQEPCCER246. Posted final reports are located on the Effective Health Care Program [search page](#).

Comments to Draft Report

The Effective Health Care (EHC) Program encourages the public to participate in the development of its research projects. Each draft report is posted to the EHC Program website or AHRQ website for public comment for a 3- to 4-week period. Comments can be submitted via the website, mail, or email. At the conclusion of the public comment period, authors use the commentators’ comments to revise the draft report.

Comments on draft reports and the authors’ responses to the comments are posted for public viewing on the website approximately 3 months after the final report is published. Comments are not edited for spelling, grammar, or other content errors. Each comment is listed with the name and affiliation of the commentator, if this information is provided. Commentators are not required to provide their names or affiliations in order to submit suggestions or comments.

This document includes the responses by the authors of the report to comments that were submitted for this draft report. The responses to comments in this disposition report are those of the authors, who are responsible for its contents, and do not necessarily represent the views of the Agency for Healthcare Research and Quality.



Summary of Peer Reviewer Comments and Author Response

This research review underwent peer review before the draft report was posted for public comment on the EHC website.

Reviewers offered suggestions that resulted in clarifications, additions, deletions, and corrections; changes made to the report in response are described below. Overall, reviewers requested clarification and further details concerning the three methodological approaches we used in the review. They recommended more discussion of the relationship between the three analyses and specific recommendations resulting from the review.

- **Clarifications**

- **Title:** We retitled the review from “Management of High-Need, High-Cost Patients: A Realist and Systematic Review” to “Management of High-Need, High-Cost Patients: A ‘Best Fit’ Framework Synthesis, Realist Review, and Systematic Review.”
- **Introduction:** In response to reviewer comments, we clarified that utilization is not solely due to poor disease management; clarified that we used a broad inclusion criteria for the review that encompassed studies of all high-need, high-cost (HNHC) patients because of limitations in the available literature on identifying care that is inappropriate and potentially preventable or modifiable; changed a description of interventions in the background section from “Complex Care Management” to “Complex Interventions for HNHC Patients” to better reflect the variety of strategies used to assist these patients; and improved our distinction between health-system and provider-level strategies.
- **Methods:** We clarified that, in KQ1 predictive studies, both predictors and outcomes might measure use and cost.
- **Results:** We clarified the distinction between the number of articles and studies.
 - KQ1: we clarified the subset of studies used to describe patient characteristics, improved the distinction between clinical and behavioral health characteristics, as well as healthcare use as a predictor of future use and an outcome. We improved our presentation of the effect of age, particularly the difference often seen in results between when the sample population includes Medicare disabled patients and when it includes a more general population. We further clarified the definition of “serious mental illness” used in specific studies.
 - KQ2: we reviewed and confirmed our choice of mechanisms in our Context-Mechanism-Outcome (CMO) configurations.
 - KQ3: reviewers had questions about the categorization of interventions. In response, we clarified why we categorized the Independence at Home intervention as a “system transformation model,” and we changed the categorization of one intervention from “health plan models” to “telephonic/mail models.”

- **Discussion:** We clarified our conclusion that identifying candidates for interventions is served by using both electronic data and individualized selection. We better highlighted actionable findings for policymakers and made our recommendations more explicit.
- **Clarity in presentation:** We edited the text in response to comments concerning the clarity of the presentation. Changes included improving the description of the inclusion/exclusion criteria in methods; more clearly distinguishing the different approaches used in each of the three Key Questions (KQs); decreasing the overall density of findings and adding additional synthesis to the extent practicable; editing, labeling, and adding footnotes to specific tables that reviewers found difficult to read and interpret; removing decisional dilemma as a heading in the discussion chapter; changing how we referred to strength of evidence grades for outcomes that showed no difference; adding subheadings to the results chapter; and replacing the term “health outcomes” with “clinical outcomes” in some specific instances.
- **Additions**
 - **Executive Summary:** In direct response to specific comments, we revised the text to improve clarity and improve linkage between the KQs.
 - **Introduction:** We added the stated audience for the review.
 - **Methods:** We added text to clarify why we excluded studies conducted solely in an inpatient setting as outside our scope. We expanded our presentation of the framework synthesis approach, including adding a figure of the initial framework. We modified the analytic framework to clarify that community includes family, friends, and social supports. We added information describing the KQ1 qualitative studies, including a summary table and that we evaluated the rigor of these studies. We added text describing why we did not conduct a risk of bias assessment for the KQ1 review and our strategy for addressing KQ1 study rigor (e.g., requiring that quantitative studies control for potential confounding). We expanded our description of the realist review literature rigor assessment to better explain how we evaluated the quality of the included studies. Due to the complexity of using three review methodologies, reviewers found our language describing our systematic review synthesis approach confusing, so we clarified that we used a narrative synthesis approach to report most of our findings.
 - **Results:** In support of our realist review findings, we added additional source data to the appendix presenting our CMO relationships.
 - **Discussion:** We added a discussion of the additional complexity of temporality in relation to patients being HNHC. In relation to KQ1 studies, we added a discussion of a reviewer’s point that study regression results could be limited in identifying some rarer HNHC conditions. In relation to intervention studies, we added the concern that these studies were generally not designed to assess harms and that patient-centered outcomes were largely missing from included studies. We added an acknowledgement of the time/resource limitations that constrained the further development of our realist review CMO relationships. We expanded our discussion of the connection between our three review approaches to form a more cohesive story across the review, including what was learned from the realist review that is relevant for identifying HNHC patients and interventions to help them. We added to the recommendations section, further highlighting key takeaway findings, including adding more specific future research

recommendations and implications for health policy, including the value of innovative payment models and other payment reforms that could support interventions for HNHC patients.

- We expanded the limitations section to include the acknowledgement that, because we identified HNHC patients based on their healthcare use, we had limited information on other services that could be beneficial (e.g., housing, navigating social services, caregiver support). We highlighted the heterogeneity of patients as a limitation in drawing conclusions on the effectiveness of interventions. We explain that we only included intervention studies with a comparison group due to the limited interpretability of the effectiveness of single-armed studies but that, in doing so, we were not able to include some potentially promising interventions.
- **Corrections**
 - **Results:** We corrected a typo in one of our key points. We corrected our CMOs so that each includes a mechanism (in some cases, one was missing) and, generally, only one context and one outcome.
 - We corrected several minor spacing and copyediting errors, including pluralization errors, a spelling error, an errant question mark, and internal editing comment. We corrected passive voice, used clearer and more appropriate terminology for specific ideas, and spelled out acronyms when first mentioned.
 - We corrected a numerical error in Table 1 and summation error in Table 13.
- **Deletions**
 - **Introduction:** We removed the term “realist review” from the introduction and defined it more fully in the methods section.
 - **Discussion:** We deleted mention of two organizations that did not meet our inclusion criteria.
- **Missed citations**
 - Two programs were recommended to be added to the review. One, the CareMore randomized controlled trial, was included in the update. The second, the Health Quality Partners Medicare Chronic Care Management Program Demo, was not added, because it did not meet our eligibility requirement of greater than one admission.
 - We updated the literature search through March 2021 during the public review period but did not identify any studies concerning the impact of COVID-19 on these patients, as a reviewer had hoped.
 - We added a recommended study as context for describing possible racial bias in algorithms identifying HNHC patients.
 - We identified and added a study regarding the Washington State Predictive Risk Intelligence System intervention.

Public Comments and Author Response *for reports with sequential peer review and public comment*

Commentator & Affiliation	Section	Comment	Response
Public Reviewer #1, Richard Grant	Question 6	Please consider including this recent article that provides a significant advance on the other cited clustering articles (https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2774074 - Use of Latent Class Analysis and k-Means Clustering to Identify Complex Patient Profiles). This article focuses on the top 3% most complex patients (n = 104869 out of 3.2 million adults), resolving to 7 distinct phenotypes based on clinical stakeholder interpretation of LCA and k-means outputs, and demonstrates significant differences in 1-year outcomes (death, hospitalization, etc) by complex patient cluster (despite all patients being in a narrow band of the top 3% most complex within the care system). Results shed new insights into what types of complex patients exist within the adult population and how these different profiles would be amenable to different types of coordinated care interventions.	Thank you for bringing this study to our attention. It has been added to our review.
Public Reviewer #1, Richard Grant	Uploaded Document	JAMA Network Open - Complex Profiles.pdf (987 KB)	
Public Reviewer #2, Najeh Ahmad, MD MPH, Kaiser Permanente	Question 1	Excellent review and my sincere gratitude to all involved, I only recently was made aware of this so I have not had a chance to review further than page 50 but wanted to contribute few comments and suggestions for enhancement: It is exciting to see this acknowledgment: "Substance use and mental health disorders are emerging in our understanding as being critical " to High unmet needs, high cost populations. Do you envision looking into Adverse Childhood Events as prevalent in this population as well? On page 5: Would it be helpful also to evaluate and classify models by their level of Integration of the services that address the un-met needs of these patients (social-mental health and substance use and medical services) in addition to the primary setting of the intervention (system, ed, aICU, primary care plus, home based, telephonic?) *On page 50, I was pleased to see this statement around engagement "community health workers can help the care team understand the challenges and needs of these patients." That made me wonder why the evidence based "Role of mental health peers " didnt make it to this review. At our Center for Integrated Care pilot, contracted mental health peers were integrated into the interdisciplinary care team and they excelled in empowering engagement of these patients through positive sharing of their lived in experience, role modeling and informal counseling and leading of skill building groups.	Thank you for your kind comments. Our review was limited by the evidence that met our inclusion criteria. We have also heard that adverse childhood events can be a risk factor but we did not find it as predictor in characteristics of the population or a description of participants included in interventions. My response is similar in relation to mental health peers. We didn't find studies with a reference to that role.

Source: <https://effectivehealthcare.ahrq.gov/products/high-utilizers-health-care/research>

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