

Strategies for Implementing Best Practices in Independent Physician Associations

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Despite decades of upward-spiraling health care costs in the United States, health care spending continues to outpace gross domestic product and will comprise an estimated 19.9% of gross domestic product by 2025.¹ To mitigate the increase in spending, scholars have highlighted the importance of preventing hospital admissions, readmissions, and emergency department (ED) visits for individuals with chronic conditions, a population that accounts for a large percentage of the nation's health care spending. Approximately 171 million Americans are expected to have at least 1 chronic condition by 2030, a 37% increase from 2000.² Individuals with 5 or more chronic conditions spend 14 times more health care dollars than those without any chronic disease.³ As such, we need cost-effective strategies to manage this rapidly growing population.

Providing effective care management strategies and implementing best practices may help reduce ED visits, inpatient admissions, and readmissions, thereby reducing rising health care costs and increasing quality. We conducted an international systematic literature review of peer-reviewed research, which identified 6 best practices shown to significantly reduce hospital admissions, readmissions, or ED visits: (1) face-to-face interactions with patients and health care workers (primarily in the home),⁴⁻¹³ (2) multidisciplinary care teams that include social workers and pharmacists,^{4-9,11,13-15} (3) active engagement of physicians in care management practices,^{4,5,9,10,13,15} (4) disease-specific care programs (eg, congestive heart failure, chronic obstructive pulmonary disease),^{4,5,7,8,11-13,15} (5) transitional care models from inpatient to community settings,^{7,8,12-15} and (6) risk stratification of populations into subgroups with defined clinical and social needs⁴⁻¹³ (eAppendix A and eAppendix B [eAppendices available at ajmc.com]).

Because independent physician associations (IPAs) contract with multiple provider organizations and health insurance plans, IPAs implementing these 6 best practices in care management may experience unique structural and operational challenges. The challenges reported by IPAs include selecting, implementing, and sustaining the operations of evidence-based management strategies while maintaining contractual obligations to health plans; engaging physicians in large and diverse networks; and building high-touch

ABSTRACT

OBJECTIVES: Scholars have highlighted the importance of preventing hospital admissions and readmissions for individuals with costly chronic conditions. Providing effective care management strategies can help reduce inpatient admissions, thereby reducing rising health care costs. However, implementing effective care management strategies may be more difficult for independent physician associations (IPAs) that contract with multiple organizations that have competing interests and agendas. This study aims to identify and investigate strategies that facilitate the implementation of evidence-based best practices among IPAs.

STUDY DESIGN: The research synthesized peer-reviewed literature to identify best practices in chronic disease management for Medicare beneficiaries. Subsequently, 20 key informant interviews were conducted to explore barriers and facilitators in adapting these best practices in IPA settings. Informant interviews were conducted with 3 key groups: executives, medical directors, and care managers.

METHODS: Key informant interviews were conducted to explore barriers and facilitators in implementing best care management practices.

RESULTS: Key informants provided unique insights regarding the challenges of implementing best care management practices among IPAs. These challenges included implementing and sustaining the operations of evidence-based care management programs while maintaining contractual obligations to health plans, engaging physicians in large and diverse networks, and building high-touch programs in large geographic areas using risk-stratifying algorithms.

CONCLUSIONS: IPA managed care organizations require unique considerations in regard to selected strategies used to manage chronic disease in Medicare populations. These considerations are critical for optimal management of the population, particularly in a risk-based or pay-for-performance environment.

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care management programs in large geographic areas. Although IPAs comprise a significant portion of provider networks across the United States—it is estimated that 54% of managed care plans and 90% of point-of-service plans deliver care through IPAs—little research (only a few IPA-specific studies in the past 2 decades) has been conducted on how they implement evidence-based strategies, and very few of these studies focused on care management practices after the 1990s. Using key informant interviews, we explored the strategies that IPAs use to implement value-based best practices.

METHODS

Between May and August 2018, we conducted 20 semistructured interviews exploring barriers and facilitators to implementing the care management practices identified within the literature review (eAppendix C). Interviews discussed the ways in which stakeholders, internal pressures, and external (imposed) requirements contributed to the success or failure of implementation procedures for best practices among IPAs (for research questions, see eAppendix D). This study was approved by the University of North Carolina's institutional review board, and informed consent of all study subjects was obtained.

The interviews were conducted with informants holding key roles within IPAs. Informants included (1) executives in leadership and decision-making roles (n = 5), (2) medical directors who implement and provide clinical oversight of the best practices (n = 6), and (3) case managers/nursing leaders who provide direct patient care (n = 9). Respondents represented 8 IPAs (7 located in California and 1 on the East Coast). IPAs were identified through their participation in a large national association. The average length of each interview was 60 minutes.

The interviews were audiotaped and transcribed. Using Nvivo12 Plus (QSR International), 4 interviews (at least 1 from each key stakeholder group) were coded independently by 2 coders, achieving a final κ statistic of 0.66.¹⁶

RESULTS

Care Management Strategy

Many of the respondents explained that the organization's revenue model and value-based contract arrangements heavily influenced which care management programs were ultimately adopted—this often occurred independent of evidence review (Table). All stakeholder groups reported choosing programs, in part, based on the type of performance measurement required or rewarded by the payer. This implies that some IPAs base their investment in care management strategies on what is measured and incentivized by payers. For example, health plans that receive financial rewards for

TAKEAWAY POINTS

- ▶ Risk-stratification measures are a key component in efficiently allocating limited resources toward strategies that reduce inpatient utilization; using social determinants to enhance accuracy shows promise and warrants further exploration.
- ▶ This research points to the importance of the revenue model of the independent physician association (IPA) and its contractual obligations with health plans in assessing the likelihood of success in implementing best practice-based care management programs.
- ▶ Engaging physicians in best-practice programs may be linked with improved results; engagement of physicians in large networks may be more effective with high-volume or exclusive IPA physicians.

increasing preventive screenings (eg, colonoscopies) may incentivize or contractually require the medical group to concentrate its limited resources on improving this metric, often to the exclusion of other needs. As a result, this may leave fewer resources for investing in chronic care strategies, such as home visits, which would focus on reducing acute inpatient utilization and streamlining care transitions.

One respondent explained that his IPA selects interventions and programs to implement based predominantly on what the health plan contracts dictate—which may not be based on evidence-based best practices or the needs of their specific populations. An executive respondent explained, “In all honesty, we do certain things because the contract directs us to do it that way.” Another executive commented on the importance of the IPA's revenue and risk arrangements in selecting care management strategies: “[T]he financial model is determining whether or not certain interventions are cost-effective. So even though they're shown to work statistically if implemented with fidelity, they are not necessarily cost-effective for everyone because of the risk environment.” Executive respondents and medical directors suggested that IPAs that are not capitated on a full-risk basis for a population often struggle in sustaining care management programs, which take a longer time to show results and returns. Thus, it appears that IPAs may focus on achieving the metrics for which they are being paid and that IPAs with revenue models that provide up-front funds to care for their members are more likely to succeed in the implementation and sustainability of best practice-based programs.

Physician Engagement

Physician engagement refers to the provider's willingness to implement and sustain best practices among their patient population. Stakeholders reported that physician engagement was linked with improved results across the care management practices (Table). According to a majority of respondents, the contractual relationship with the IPA and the volume of patients that the physician has within a particular IPA influenced both their capacity and their willingness to engage in best practices being deployed by the IPA.

Physician contract type (exclusive, employed, open contract) and volume of patients per physician attributed to a single IPA were the 2 features most often cited as affecting physician engagement as it relates to the implementation of best practices within

TABLE. Stakeholder Insights on Challenges to Implementing Best Care Management Practices in IPAs

Quotes	Key point
Care management strategy	
“We’re actually delegated by the health plan certain responsibilities. Depending on that, we will tailor what programs we need to implement in order to satisfy the delegation requirements.” – Nursing director	Respondents reported that care management practices within IPAs are heavily influenced by health plan contracts.
“Even though [some care management programs] are shown to work statistically if implemented with fidelity, they are not necessarily cost-effective for everyone because of the risk [and reimbursement] environment.” – Executive	Respondents reported that the timing and source of funding for health care services affect best-practice implementation in IPAs.
“We’re in a capitated environment. [Therefore,] we are still able to make money. [Supporting the care management programs] is cost-effective.” – Medical director	Respondents reported that up-front capitation payments are associated with more sustainable and effective implementation of best practice-based programs.
“We need the infrastructure money. The way we get that is to enter into the risk-contracting world so we’ll be able to afford to support that [best-practice] program.” – Nursing director	Respondents agreed that accounting for specifics of the IPA’s revenue model is a key step in best-practice implementation.
Physician engagement	
“Without IPA physician engagement, sure we can do some good work, but their simple reinforcement is very impactful. That physician really gives credence and validity to the medical group’s relationship with a patient. They’re totally critical.” – Executive	Respondents reported that physician engagement in best-practice implementation improved results compared with no physician engagement.
“These doctors have multiple contracts, and so they’re not fully aware of which patient belongs to which IPA.” – Medical director	Large and diverse IPA physician networks introduce engagement challenges.
“If they get 50[%] or 60[%] or 70% of their patients through us, it makes it cooperation and engagement easier.” – Medical director	Respondents agree that high-volume or exclusive providers tend to be more engaged.
“We look at our doctors who have a high volume of patients, [then] we go and have a face-to-face meeting with these doctors and go to great lengths to make sure that [the IPA physicians] do understand and do learn who we [IPA] are.” – Executive	Respondents agree that focusing engagement efforts on high-volume providers is an effective strategy when resources are limited.
Risk stratification for high-touch programs	
“It’s not that they’re not convinced of the value [of high-touch programs, but] it just really comes down to dollars.” – Executive	Respondents agree that there is often difficulty in funding high-touch (eg, home visitation) programs.
“Out of all of the best practices, risk stratification is one of the most important, as you greatly enhance your impactability if you do good stratification of your population.” – Medical director	Nursing respondents and medical directors reported that risk stratification is a critical measure in optimizing outreach efforts.
“Social determinants play a huge role. We have populations with a history of substance abuse who do not have safe homes. [This information] helps us determine which programs [to use] and what the patient needs.” – Medical director	Respondents agree that stratification strategies vary widely, but successful strategies are more likely to include social factors.

IPA, independent physician association.

individual practices. Respondents noted an increased engagement and willingness to participate in IPA-dictated best practices when the physician was either exclusive with the group or had a high volume of that IPA’s patients. Respondents stated that high-volume IPA providers tended to be more engaged in care management programs than low-volume providers. One medical director said, “If they get 50[%] or 60[%] or 70% of their patients through 1 IPA, it makes cooperation and engagement easier.” Other respondents expressed that employed physicians were also more likely to refer to available best practice-based programs.

Risk Stratification for High-Touch Programs

Respondents noted that for high-touch programs (eg, face-to-face home visits) to be cost-effective, visits needed to focus on patients most likely to benefit. However, IPA strategies for selecting individuals for high-touch programs varied widely (Table). Some care manager respondents discussed targeting the elderly and frail for home

visits, whereas others homed in on those with recent ED visits and/or hospitalization history. A few care managers said that the selection process was based on the individual patients’ needs, whereas others used a variety of automated risk-stratification algorithms that included a combination of the previously mentioned factors.

The most common risk stratification tool identified by participants was the LACE index scoring tool, which is a measure of future readmission risk after an inpatient stay. The LACE score was used to determine eligibility and placement into care management programs. Other methods of risk stratification commonly used by the IPAs in this study included proprietary algorithms that are based on factors such as utilization history, age, and information from disease registries.

All participants utilized some form of risk stratification, although only 2 respondents claimed to incorporate social determinants into their methodology. The 2 respondents using social factors believed that it was helpful in identifying patients most likely to benefit. One medical director explained, “Social determinants play a huge

role; we have populations with a history of substance abuse who do not have safe homes, [and this information] helps us determine which programs [to use] and what the patient needs.” For the few that used social determinants as part of their stratification method, the IPA most commonly used the status of homelessness (yes or no) as the social determinant considered.

DISCUSSION

Revenue Model May Dictate Best-Practice Use

Contractual obligations and financial incentives between health plans and IPAs greatly influence which care management programs IPAs adopt, regardless of whether that particular strategy is considered a best practice or is most appropriate given the needs of a specific population. It is therefore paramount that financial rewards are appropriately aligned with evidence-based findings and attuned to the needs of local populations. Further, our findings support the concept that IPAs that do not assume full risk and/or that participate in revenue models with limited up-front revenue are less likely to adopt and sustain best practices that require substantial up-front investment costs. This in turn limits the type and scope of effective programs that can be implemented. Revenue models that support and sustain care management strategies should be proactively evaluated by stakeholders.

IPAs that do not assume full risk generally have less flexibility in spending their limited resources. This decreases the opportunity to invest in programs that either are more effective or require extended periods to demonstrate benefit. For the latter, IPAs could explore the duration of funding to ensure adequate time to accurately assess program effectiveness.

Understanding the structure of an IPA's revenue model helps determine which types of care management strategies can successfully be implemented within its environment. Models associated with effective best practice use include full-risk capitation, global capitation, and other value-based models that reward based on health care outcomes while providing the revenue to care for the patient prior to spending on services. Alternatively, models without up-front investment were more likely to result in failed programs either during or shortly after implementation. This may be the case because it is more difficult to finance and sustain these care management best practices for longer periods of time. It is therefore recommended that prior to developing a care management strategy, IPAs evaluate their revenue model, contractual obligations, and the sustainability of funding necessary to support the program and see results.

Physician Engagement Used to Improve Care Management Program Outcomes

Because physician engagement and active involvement in care management programs have been linked with improved results, developing a physician engagement strategy is critical for IPAs. However, knowing which physicians to target in a diverse network spread over a large geographic area can be a formidable challenge.

Reducing Inpatient Utilization Using Best Practices

Because it has been found that a robust network of exclusive, employed, or high-volume providers are better positioned to both administer best care management strategies and sustain them over time, it is recommended that IPAs target high-volume providers and exclusive providers first as a tiered approach when attempting to implement best-practice strategies across broad and diverse physician networks and patient populations.

Risk Stratification as a Tool to Increase Efficacy of Best Practices

Respondents discussed the high cost of implementing face-to-face care management programs, especially if patients are geographically dispersed, often leading to the failure of otherwise effective initiatives. To address this, the IPAs that were able to implement this best practice successfully targeted individuals who were most likely to benefit from the intervention using a risk-stratification system. Focusing in-person care management on those most likely to benefit helped IPAs demonstrate a positive return on investment. Therefore, it is recommended that IPAs take advantage of evidence-based risk stratification systems to identify patients who will benefit from resource-intensive interventions such as home visits. Those groups using social factors as a key piece within their risk stratification systems may have an advantage, as chronic disease is often associated with certain social determinants.¹⁷ It is recommended that future research might compare various risk-stratification methods, particularly those that integrate social determinants.

Limitations

There were several limitations to this study. First, all but 1 IPA was on the West Coast, which may limit generalizability of the results. Further research is needed to determine if the barriers and facilitators that we identified are similar to those in other parts of the country. Additionally, there was lack of standardization across IPAs when evaluating the efficacy of their internal best practices. This made comparing similar best practices across various IPAs challenging. Efforts that allow for more direct comparisons will help to further elucidate the barriers and facilitators of best practices nationally.

CONCLUSIONS

Recommendations from this study include assessing the organization's revenue model and contractual obligations to health plans when developing care management strategies, concentrating best-practice dissemination among high-volume or exclusive providers, and using risk stratification including social factors to target members most likely to benefit from the interventions. Ultimately, it is critical to align appropriate funding models to achieve optimal outcomes by supporting the adoption of robust best practices by multiple stakeholders, including IPAs, health plans, and government payers. More research is needed to further explore facilitators and barriers to best-practice implementation among IPAs nationally. ■

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eAppendix A: Literature Review Methods

Literature Review Methods

The search strategy for this literature review used the search terms shown in the Table, within four prominent databases (PubMed, CINHALL and Scopus and ProQuest Health) to acquire the broadest, yet relevant, collection of literature possible. The search identified a total of 508 articles. Articles were subsequently screened for duplicates, title relevance, and then by abstract with five meta-studies remaining for full text inclusion from this literature search.

eAppendix Table 1

Search Terms

Concept	Key words, search terms
Population	“Dual eligible” OR Medicaid OR Medicare OR Medi-Cal OR “managed care” OR “high-need patient” OR “complex patient” AND
Care management	“Case management” OR “medical home” OR “integrated care” OR “care management” AND
Outcomes	Utilization OR admission OR re-admission OR “cost-savings” OR “reduced costs” OR “return on investment” AND
Primary care setting	“Primary care provider” OR “primary care”

Note. English only.

Meta-studies are comprised of both systematic evidence reviews and meta-analyses. Evidence reviews, also referred to as evidence syntheses, differ from meta-analyses in a few primary ways. First, meta-analyses take the data produced by other studies and pool it with like studies to increase the statistical power of the conclusions. Second, in many meta-analyses researchers conduct subgroup analysis which allows the researchers to ask and answer new research questions from the pooled datasets. In contrast, evidence reviews

compile and compare data from studies on a particular topic, but do not use quantitative methods to perform further analysis from the underlying data. Collectively, I will refer to the studies included in this review as meta-studies even though they may be either meta-analyses or evidence syntheses.

Another reason meta-studies were targeted in this review is that many of the individual studies that were produced in the literature search were also captured and reviewed within the meta-studies. The remaining seven meta-studies (in addition to the five already identified through the literature review) were found through the snowball approach (where the citations in other studies recommended additional studies that met the inclusion/exclusion criteria).

Inclusion and exclusion criteria. Studies were examined based on the inclusion and exclusion criteria listed below. Studies that examined pediatric populations were removed, due to the inability to generalize the results to adult populations. Studies with isolated (rural) or institutionalized populations were removed from the review due to the inability to assure generalizability to the majority of Medicare beneficiaries. Studies with an *N* less than 100 were also removed due to statistical reliability concerns. Selection of best practices was based on high-quality (as defined by the authors of the meta-studies), consistent statistical evidence reported in at least two independent meta-studies. Studies included in the literature review are written in English only, with populations similar to the population for which the best practices are intended to be implemented. Both qualitative and quantitative studies were accepted. All studies included were required to report at least 1 relevant cost outcome measure in the form of admissions, readmissions, total cost, or ED utilization.

A date range of 2000 to 2017 was used to limit the research to more recent evidence that includes modern (last 15–20 years) technological advances, like that of electronic medical records, which can alter the ways in which health care is delivered.

It is important to note that the date range for included studies (2000–2017) in this literature review spanned the implementation of the Patient Protection and Affordable Care Act (ACA) (2010). This law significantly altered the way that care was delivered nationally. Even though there were significant modifications to how care was delivered, there is no evidence that this law would impact the effectiveness of the best practices extracted from this literature review. In fact, there are reasons to suspect that the information gleaned from this

literature review about best practices to reduce costs and improve outcomes have been adopted more widely as a result of some of the ACA provisions moving towards value based purchasing (such as Accountable Care Organizations and bundled payments). Therefore, I do not believe that the implementation of the ACA warrants any material changes to the recommendations provided in this dissertation. Inclusion criteria are as follows:

- Published in English
- Meta-analysis or evidence synthesis of more than 5 underlying studies
- The criteria for evaluating the quality of study was reported in the publication
- Medicare/dual eligible populations, or populations with characteristics reasonably homogenous to the elderly with occurring chronic diseases
- Qualitative, quantitative or mixed method studies
- Outpatient: majority of the intervention occurred outside of the acute care facility
- At least one cost outcome or relevant proxy for cost was provided. Examples include net cost, or inpatient utilization such as admissions, readmissions and/or ER visits.
- Elderly populations (average age > 65)

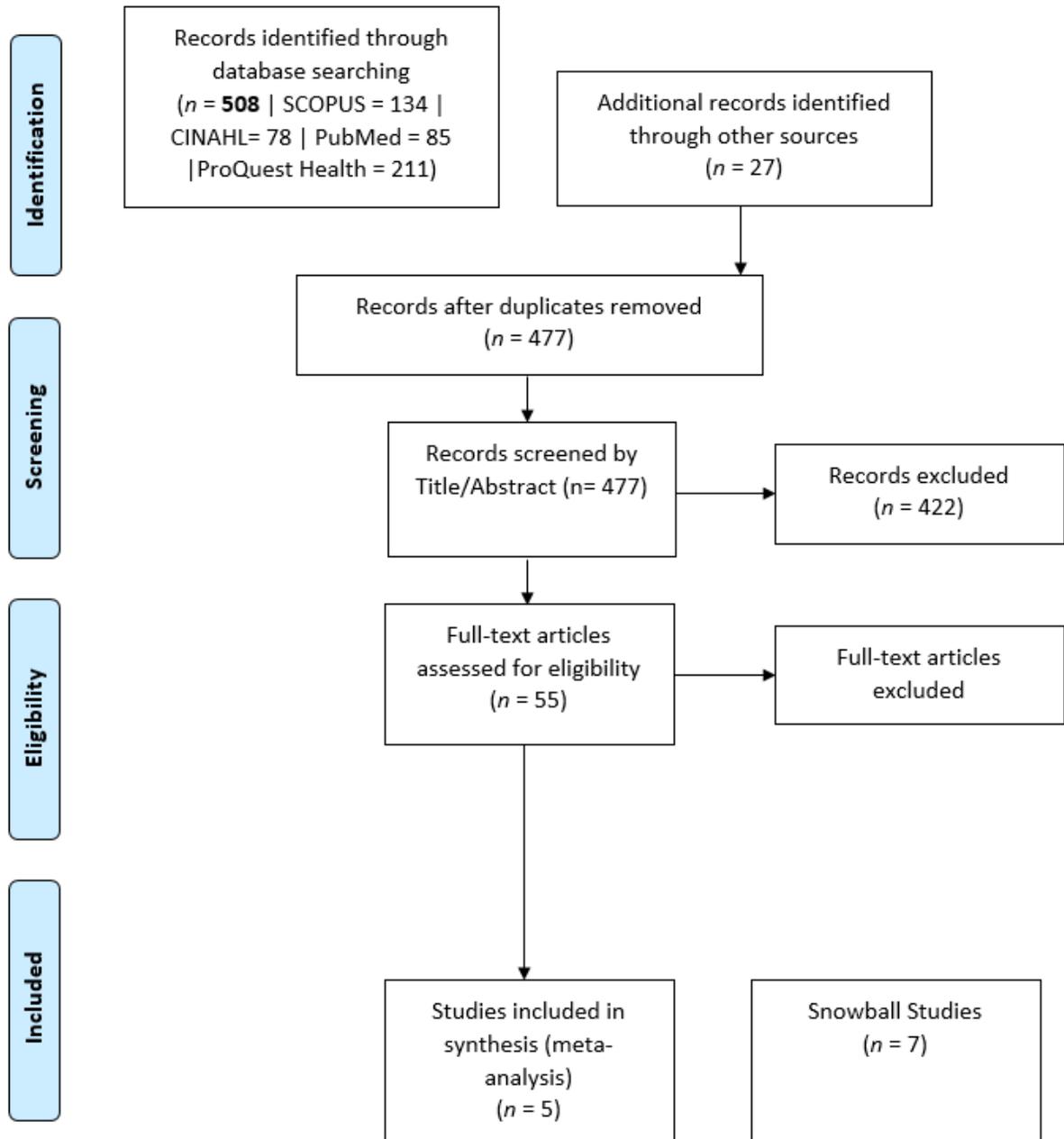
Exclusion criteria are as follows:

- Pediatric populations
- Populations with known terminal diseases, or hospice eligibility
- Studies that only target mental disease or behavioral health conditions
- Institutionalized populations (psychiatric institutions, or custodial care)
- Studies that target individuals on hospice
- Isolated populations living in environments not generalizable to the US population
- Studies with an $N < 100$ in each study group
- Studies with less than 30 day follow-up periods

Additional meta-studies were found through the snowball approach for a total of 12.

Additional meta-study inclusion and exclusion criteria. Several meta-studies had a mix of populations that met inclusion criteria and populations that did not. Therefore, within the meta-studies an additional set of criteria were applied to select the subpopulations most

similar to the population of interest-elderly with multiple chronic diseases. In addition to the inclusion criteria noted above, meta-studies of mixed populations that met and did not meet inclusion criteria had to include more than one eligible study upon which the author based his or her conclusion.



eAppendix Figure. PRISMA diagram.

I examined the following factors in assessing the impact of best practices on outcomes, to the extent they were available in the meta-studies:

1. Timing
 - a. When did the intervention start?
 - b. How long was the intervention?
 - c. How long was the study period (including poststudy follow-up)?
 - d. What was the time period for measuring specific metrics (e.g., 30 vs. 60 vs. 90 day admissions)
2. Population selection
 - a. Did the model use an evidenced-based form of targeting/risk stratification?
 - b. How was the intervention population selected? (e.g., diagnosis, utilization triggered, geography, cost, insurance source (line of business), through affiliation with a health system, or combination.)
 - c. How was the control or comparator group selected?
 - d. Was the selection for population due to a recent utilization pattern, or a chronic diagnosis?
 - i. chronic diagnoses are more likely to be permanent not temporary increases in intensity of medical care, and this can affect the sustainability of results: (Ex., chronic disease diagnosis versus 3 ER visits in the past 30 days)
3. Measurement and Baseline/Comparator
 - a. How were baseline metrics calculated?
 - b. How were comparator metrics calculated?
 - c. Data sources
4. Analytical considerations
 - a. Size of comparator/control and intervention
 - b. Propensity and control for bias
 - c. Reporting of all outcomes measured versus cherry picking
 - d. Post hoc statistical control techniques
 - e. Post hoc analysis/subgroup comparison quality
5. Setting

- a. In what setting was the intervention delivered? (e.g., home, office, clinic, combination)
6. Funding
 - a. How was the intervention funded?
 - b. Were certain parties at-risk for positive or negative results?
 - c. What were the payment mechanisms in relation to standard compensation measures?
7. Availability of information reported on intervention activities
 - a. Frequency of activity
 - b. Engagement of population in activity (e.g., contact rate for telephonic CM)
 - c. Differences reported in delivery of activity (e.g., education tools used when engaging in health information education sessions)
 - d. Reported details of the intervention for ease of comparison among like-interventions
8. Staff
 - a. Identification of healthcare provider participants
 - b. Training of staff (academic and intervention specific)
 - c. Continuity of staff contact with patients
 - d. Staff level of engagement with intervention
 - e. Staff turnover

Based on these criteria, I identified 12 meta-studies: 8 meta-analyses and 4 evidence reviews (eAppendix Table 1). These 12 meta-studies include a total of 517 individual studies. For each meta-study reviewed, I have included the number of studies, type of study, populations of interest, intervention, quality of study, and outcomes. Detailed results can be found in eAppendix A. All studies included in this review were required to be robustly evaluated for quality by a peer reviewed quality methodology. Pooled meta-analyses were controlled for heterogeneity to help ensure the studies measured against one another had as similar characteristics as possible for accurate comparative evaluation.

eAppendix Table 2*Description of Meta-Studies*

Study name	Year	Author(s)	# of studies	Type of study
Effectiveness of Outpatient Case Management for Adults With Medical Illness and Complex Care Needs Research	2013	Hickam et al.	109	Meta-analysis
Working Paper Series Congressional Budget Office Lessons from Medicare's Demonstration Projects on Disease Management and Care Coordination Lessons From Medicare's Demonstration Projects on Disease Management and Care Coordination	2012	Nelson et al.	34	Meta-analysis
Effectiveness of Case Management for “At Risk” Patients in Primary Care: A Systematic Review and Meta-Analysis	2015	Stokes et al.	36	Meta-Analysis
Models of Care for High-Need, High-Cost Patients: An Evidence Synthesis.	2015	McCarthy et al.	123	Evidence Review
Caring for High-Need, High-Cost Patients: What Makes for a Successful Care Management Program?	2014	Hong et al.	18	Evidence Review
Case Management Effectiveness in Reducing Hospital use: A Systematic Review	2016	Joo et al.	10	Evidence Review
A Systematic Meta-Analysis of the Efficacy and Heterogeneity of Disease Management Programs in Congestive Heart Failure	2006	Göhler, et al.	36	Meta-analysis
Evidence-based Synthesis Program Evidence Brief: Effectiveness of Intensive Primary Care Programs	2011	Peterson et al.	20	Meta-analysis
Innovative Home Visit Models Associated With Reductions In Costs, Hospitalizations, And Emergency Department Use	2017	Ruiz et al.	6	Evidence review
Clinical Service Organisation for Heart Failure: A	2012	Takeda et al.	25	Meta-

Study name	Year	Author(s)	# of studies	Type of study
Cochrane Review				analysis
Transitional Care Interventions to Prevent Re-Admissions for Persons With Heart Failure: A Systematic Review and Meta-Analysis	2014	C. Feltner et al.	47	Meta-analysis
Comparative Effectiveness of Transitional Care Services in Patients Discharged From the Hospital With Heart Failure: A Systematic Review and Network Meta-Analysis	2017	Van Spall et al.	53	Meta-analysis

eAppendix B: Summary of Literature Review Findings

In this literature review, I reviewed 12 meta-studies, which include a total of 517 individual studies. Eight of these meta-studies were meta-analyses (66%) and four (33%) were evidence reviews.

The studies included in this review vary, in some cases significantly, amongst each other. For example, some studies reported 30-day disease-specific readmission rates (e.g., CHF), whereas other studies reported overall readmission rates over a period of 3–6 months. This is largely a result of no existing standard or widely utilized approach in evaluating care models among populations with varied characteristics and settings. As such, I made attempts to extract conclusions from as similar circumstances as possible from both individual and pooled results. The most frequently reported activity that achieved a statistically significant reduction in inpatient utilization was risk stratification of patients by disease acuity, which was reported as an integral feature in 71% of meta-studies. This was followed by face-to-face contact with patients and MDT interventions with two or more professionals, both reported in 59% of meta-studies reviewed. The next most commonly reported intervention reported in association with reduced acute care utilization was disease-specific care focused on CHF (COPD) in 53% of meta-studies, followed by physician engagement (e.g., primary care provider who was aware of the patient's care plan in conjunction with other providers or interventions) in 41% of meta-studies, and transitional care (care post hospitalization) in 35% of meta-studies. (See eAppendix Table 2) These best practices were all reported to help reduce different types of utilization, such as ED visits, hospitalizations, or readmissions. It is important to note that readmissions were defined in each study for different time periods (usually 30, 60, or 90 days).

eAppendix C: Semi-structured Interview Question Sample

I. BACKGROUND

What is your current title/role at your organization?

How long have you been working in a managed care IPA environment?

What proportion of your network is IPA-based versus staff model (employees)?

Researcher says: Please only answer the rest of these questions as it pertains to the IPA portion of your organization.

Approximately how many Medicare and Dual beneficiaries does your organization deliver care for?

Are you involved in selecting which care management programs are implemented in your organization?

How geographically spread is your IPA network? Do you have a centralized office within a reasonable distance from your provider offices/membership residence zip codes?

Questions for Seniors Executives are indicated by an asterisk (*)

EVALUATION OF BEST-PRACTICES

*[If best-practice is not being implemented in the IPA skip to below questions]

1. Has your organization ever thought about or tried pursuing this strategy in this past? If yes, please explain
2. Why has your organization chosen not to pursue this strategy at this time? (e.g., does not believe it is effective, too costly, too difficult to implement etc..)
3. Are there are challenges to implementation you wish to discuss? Ideally what would have to be in place, in your opinion, for this strategy to be successful implemented?

1) In my first set of questions we will discuss the structure of face-to-face visits in your organization.

- i. How do you decide who receives a face-to-face visit?
- ii. What services are typically provided during face-to-face visits?
- iii. How often does a patient receive face-to-face visits, and how is that decision made?

- 2) Do you have any results from interventions that included face-to-face visits?
 - i. If results were positive: What do you think are the primary reasons this best-practice was successful in reducing inpatient utilization?
 - ii. If not: Why do you think this was not successful?
- 3) Based on your experience, do you think the use of face-to-face interaction will improve health outcomes and/or reduce unnecessary utilization in an IPA-model MCO? Why or why not?
- 4) * Do you think face-to-face visits are a cost-effective strategy to reduce inpatient utilization in an IPA-model MCO? Why or why not?
- 5) * Are there any unique challenges to implementing face-to-face visits in an IPA-model network? If so, what are they?
- 6) What resources are needed in the practices or practice networks to successfully implement this best-practice in IPA model networks (e.g., data, IT systems, staffing at the provider level, etc...) [*Probe: If they discuss data—ask what type of data they would need... if they talk about staffing, ask what type of staffing would they need*]
- 7) * What internal leadership structures and supports are needed to make this best-practice work?

Probe: [How do you make the decision regarding whether or not to support this best-practice in terms of resource allotment?]

Probe: [How do you determine which strategies to pursue, do you use evidence, or emulate other models, etc...?]

Probe: [What type of leadership teams are the most important in implementing these best-practices in your organization?]

Probe: [What is unique in your organization that you believe is responsible for making this strategy a success]

- 8) *What milestones would you use to evaluate progress and success in your care management programs?
- 9) *Do you believe this model can be scaled cost-effectively?

[Probe: what are a few of your primary considerations in regards to scaling effectively within an IPA network?]

- 1) In the first set of questions we will discuss the structure of the multi-disciplinary teams.
 - a. Do you use multi-disciplinary teams in your IPA model managed care organization for elderly Medicare beneficiaries with chronic illnesses? If so, please describe these teams. *[Probe: What type of clinical or nonclinical professional is on the team?]*
 - b. How did you determine which disciplines to include in your multidisciplinary team?
 - c. Do all members of the multidisciplinary team directly interact with the patient?
 - d. How often does the patient see members of the multi-disciplinary team?
 - e. Does this vary by patient? Please Explain?
- 2) Do you have any results from interventions that have used these multi-disciplinary teams?
 - i. If results were positive: What do you think are the primary reasons this best-practice was successful in reducing inpatient utilization?
 - ii. If not: Why do you think this strategy was not successful?
- 3) Based on your experience, do you think the use of multi-disciplinary team models as a best-practice strategy will improve health outcomes and/or reduce unnecessary utilization in an IPA-model MCO? Why or why not?

- 4) Are there any unique challenges to implementing multi-disciplinary team models in an IPA-model network? If so, what are they?
- 5) Do you think multi-disciplinary team models are a cost-effective strategy to reduce inpatient utilization in an IPA-model MCO? Why or why not?
- 6) What resources are needed in the practices or practice networks to successfully implement this best-practice in IPA model networks (eg, data, IT systems, staffing at the provider level, etc.) [*Probe: If they talk about data—ask what type of data they would need... if they talk about staffing, ask what type of staffing would they need*]
- 7) What internal leadership structures and supports are needed to make this work?

Probe: [How do you make the decision regarding whether or not to support this best-practice]

Probe: [What is unique in your organization that you believe is responsible for making this strategy a success]

- 8) What milestones would you use to evaluate progress and success?
- 9) Do you believe this model can be scaled cost-effectively?

Additional Best-Practices:

Does your IPA use interventions that include:

- Risk stratification (if so, please explain)
 - Does this risk stratification method include social determinants? If so, what kind?
- Disease specific care (if so, please describe briefly)
- Physician engagement (physician involvement above that which would be provided as the standard of care in the absence of the intervention)
- Transitional care

Do you think that successful initiatives have to include a combination of these efforts? If so, which efforts must be done together in order to be successful?

- Are there any additional comments you would like make regarding the implementation of best-practices in IPA-based managed care organizations?

- Have we covered everything that you think is important?
- Do you have any questions for me at this time?

eAppendix Table 3

Best-Practice Outcomes

Strategy	% of meta-studies with activity	Most common utilization outcomes
Risk-stratification	71	Reduced ED visits/Readmissions
Face-to-face contact	59	Reduced ED visits/Readmissions
Multidisciplinary team	59	Readmissions
Disease-specific care	53	Readmissions
Physician engagement	41	Readmissions/hospitalizations
Transitional care	35	Readmissions

eAppendix D: Research Questions

Research question: How can IPA model MCOs most effectively reduce inpatient utilization in Medicare beneficiaries with chronic disease, through evidence-based intervention?

Aims:

1. What are the barriers and facilitators to implementing the best practices identified through the literature review in IPA model MCOs for Medicare beneficiaries?
2. Are there specific adaptations needed to modify implementation of the best practices in IPA model MCOs?