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A Systematic Review and Meta-Analysis of Co-Located Specialty Care Within Primary Care Practice Settings

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Abstract

Specialist co-location in primary care has been proposed as a strategy to reduce care fragmentation, inefficiency, and cost. A systematic review and meta-analysis were conducted to assess the impact of co-located specialty care models in primary care settings. Methods: Through February 2015, Ovid Medline In-Process & Other Non-Indexed Citations, Ovid MEDLINE, Ovid EMBASE, Ovid Cochrane Central Register of Controlled Trials, Ovid Cochrane Database of Systematic Reviews, and Scopus were searched. A manual search of the bibliographies of the included studies was carried out. Randomized controlled trials (RCTs) and observational studies reporting on the following outcomes in physically co-located specialties in primary care were included: patient satisfaction; provider satisfaction; health care access and utilization; clinical outcomes; and costs.

Keywords: Health care • Medical practices

Introduction

National healthcare spending continues to rise, owing primarily to increased healthcare spending on older Americans, particularly those with multiple chronic conditions, as well as spending attributed to inefficient care delivery. Each year, the average Medicare beneficiary visits multiple primary care providers (PCPs), specialists, and care settings, making it difficult to provide coordinated quality care. Despite increased demand for care, access to and physician supply for both primary and specialty care vary geographically. Furthermore, poor communication between primary and specialty care undermines collaboration, contributing to inefficiencies. As insurers begin to shift away from traditional fee-for-service payment models and toward value-based payment, there is an urgent need to identify healthcare models that can address these challenges.

A strategy to address healthcare delivery fragmentation has been proposed: co-locating specialty care within primary care settings. Co-location is a method of putting multiple services in the same physical space while adhering to a defined model that outlines organisational characteristics, patient care responsibilities, coordination mechanisms, and data systems and policies. Co-location takes advantage of provider proximity to improve communication, collaboration, and coordination [1].

Co-located strategies, on the other hand, can differ in terms of provider type, duration of on-site presence, and the extent to which the strategy leverages opportunities for coordination and collaboration via curbside interactions and communication via a shared electronic health record (EHR). The most widely used co-location model is integrated behavioural health, in which co-location may be a feature of the collaborative chronic care model paradigm. This model has had a positive impact. The impact of co-locating other specialties in primary care settings, on the other hand, is unknown. Understanding the potential benefits of co-located specialty care models in primary care would provide key stakeholders with information about practise redesign approaches that could help achieve the goals of high value care delivery.

Primary and specialty care remain poorly integrated, contributing to fragmented care delivery in the United States. Discontinuity, inefficient testing, delays in diagnosis and treatment, and higher costs result from poor communication and coordination between primary and specialty care. Although the patient-centered, primary care medical home (PCMH) model has been around for a while, it is now widely recognised as an important component of providing high-value, population-based care. The'medical neighbourhood' paradigm extends the PCMH model's principles to include integration of specialty care and ancillary healthcare services, and specialty care co-location in primary care settings is viewed as an advanced functional integration feature. Improved clinical decision support is one effective strategy for bridging the gap between primary and specialty care [2].

Literature Review

This review was carried out in accordance with an a priori protocol and PRISMA guidelines. There were RCTs and observational studies that looked at physically co-located specialists in primary care and assessed the following outcomes: patient satisfaction, provider satisfaction, health care access and utilisation, clinical outcomes, and costs. There were no restrictions on the type of specialty that could be included. Inclusion did not require full-time presence of specialists in primary care practise settings. Non-original studies were not considered. Through February 2015, the databases searched included Ovid Medline In-Process & Other Non-Indexed Citations, Ovid MEDLINE, Ovid EMBASE, Ovid Cochrane Central Register of Controlled Trials, Ovid Cochrane Database of Systematic Reviews, and Scopus. In addition, a manual bibliographic search was carried out.

Two independent reviewers led the screening of abstracts and full-text studies for inclusion eligibility. Any differences were resolved through consensus and arbitration by the principal investigator. To assess agreement among reviewers, a Kappa level statistic was computed [3,4]. Each study was evaluated for bias by two independent reviewers. For randomised controlled trials (RCTs) and observational studies, the Cochrane risk of bias and modified Newcastle tools were used, respectively. Using an online reference system (Distiller SR; Evidence Partners, Inc.), the following variables were extracted: study population, setting, interventions, and outcomes.

The binomial distribution was used to calculate odds ratios (OR) and 95% confidence intervals (CI). The DerSimonian and Laird random-effect models were used to pool log transformed risk ratios, with heterogeneity estimated using the Mantel-Haenszel model. We used the fixed effects model when

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the number of studies was less than three and the variance between studies was unstable [5]. STATA, version (StataCorp LP, College Station, Texas) was used for all statistical analyses. Subgroup analysis was planned to reduce heterogeneity based on the type of study design (randomised controlled trial vs. observational studies) and study location (United States [US] vs. international).

The study's findings on the impact of colocation on clinical outcomes are mixed. Because behavioural health models predominate, many clinical outcomes are related to the treatment of related conditions and functioning. Although pooled analyses of RCTs in this study found no benefit, there was significant heterogeneity, and the findings contradict a large meta-analysis on collaborative chronic care models for mental health conditions. Similarly, while one study found that a co-located model improved haemoglobin A1C, limitations in the second study24 regarding baseline A1C levels among patients likely confounded the findings.

The initial search yielded 1620 references, of which 22 studies met inclusion criteria, including nine randomised controlled trials and thirteen observational studies. Patient randomization was used in five RCTs, practise site randomization in three, and practise firm randomization in one. In terms of patient randomization, practise characteristics were not controlled.The risk of bias was rated as moderate to high in the included RCTs. Two studies failed to report the randomization method, eight studies failed to report allocation concealment, and five studies failed to report participant blinding. There was no mention of outcome blinding in any of the RCTs. Most observational studies did not report on cohort selection, comparability, outcome assessment, or follow-up adequacy.

A subgroup analysis was performed based on the type of outpatient visits. Two observational studies examined the effect of colocated specialty care on the frequency of outpatient visits by primary care physicians [6]. One study of geriatric specialty care found a link between co-location and an increase in the frequency of primary care physician outpatient visits. A study involving a co-located infectious diseases HIV practise, on the other hand, found no link. A pooled analysis of both studies using a fixed effect model revealed a significant relationship between co-located specialty care and an increase in the frequency of primary care physician outpatient visits.

The potential benefits of co-location may be limited to specific settings, such as large primary care practises affiliated with integrated healthcare organisations. Furthermore, co-location may be best suited for specific specialties. Co-locating practitioners from specialties like cardiology or neurology, which have extensive, well-developed care management guidelines or rely on highly refined diagnostic clinical exam techniques, may improve point-of-care delivery in collaboration with PCPs in the PCMH. Specialties that can provide expertise through image interpretation, such as dermatology, on the other hand, may provide some enhanced integration benefits without necessarily requiring co-location through the use of telemedicine modalities. Despite these limitations, this study provides a preliminary assessment of the potential value of co-location as an integration strategy. Furthermore, the identified knowledge gaps and study limitations reflect opportunities for directing future research and a more thorough investigation of co-located specialty care models [7].

Conclusion

Rising healthcare costs, increased demand for primary and specialty care, and insurers' shift toward value-based payment highlight the importance of evaluating and disseminating high-value care delivery models. Co-located specialty care in primary care settings has been proposed as a possible solution to the current gaps in coordinated care. The findings of this study show that co-location may not solve all of the problems associated with the primary-specialty care interface. According to our systematic review, co-located specialty care in primary care settings may help achieve the goals of high value care delivery by improving clinical outcomes, increasing patient and provider satisfaction, reducing appointment wait time, and lowering costs.

The majority of studies were conducted in the United States and covered six specialties. This study found that co-located specialty care in primary care settings was associated with higher patient satisfaction, primary care provider satisfaction, shorter appointment wait times, better quality of life, and improvements in some diabetes-related outcomes, such as systolic blood pressure and total cholesterol. Co-location was not found to have a significant effect on hospital admission rates or diabetes outcomes such as haemoglobin A1C or triglyceride levels. According to the findings of three studies, co-located specialty care may reduce costs. Co-location may have an impact on utilisation patterns, such as an increase in primary care outpatient visits. Due to the high risk of bias and heterogeneity of included studies, the evidence quality of included studies was limited.

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Conflict of interest

None declared.

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