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Care Fragmentation, Care Continuity, and Care Coordination—How They Differ and Why It Matters

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Health care in the US is characterized by fragmentation, with many patients seeing multiple physicians. Indeed, 35% of Medicare beneficiaries saw 5 or more physicians in 2019.[1] Having multiple physicians may be appropriate, but it may also lead to medical errors, unnecessary visits, avoidable hospitalizations, and suboptimal care if all of the physicians do not have complete information about the patient and each other's care plans. Even after widespread dissemination of electronic health records, 34% of primary care physicians in a national study reported that they do not always or most of time receive useful information from specialists about the patients they referred.[2]

Despite how common it is for patients to see multiple physicians, care fragmentation has received surprisingly little scientific attention. In this Viewpoint, we propose conceptualizing fragmentation as a pattern of health care utilization that could cause harm and that is related to but distinct from care continuity and care coordination. We consider why fragmentation occurs and suggest a potential path forward for developing evidenced-based strategies that can reduce the occurrence of fragmentation and its associated harms.

Definitions

Care fragmentation is care that is diffusely spread across many physicians, such that no single physician accounts for a substantial proportion of visits. Care continuity is the use of the same ambulatory physician repeatedly over time, such that the usual physician (who can be a primary care physician or specialist) accounts for a substantial proportion of visits. Both fragmentation and continuity are measures of utilization. They can both be measured

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with numerical indices, such as the Bice-Boxerman index (BBI), in which the raw BBI is a measure of continuity and the inverse (1 − BBI) is a measure of fragmentation.[3,4]

By contrast, care coordination cannot simply be assessed by a quantitative measure of ambulatory utilization. It involves a more qualitative assessment of the extent to which physicians are collectively operating in a teamlike manner to develop and implement an overall care plan to meet the patient's goals.[5] Effective care coordination can occur in the context of continuous care, fragmented care, both, or neither.

Existing Literature

The continuity end of the ambulatory care utilization spectrum has been studied for decades.[6] Conceptually, interventions to increase continuity would seek to increase the frequency of returning to the usual provider of care. However, focusing on continuity with a single physician may overlook the other physicians involved in a patient's care. Care coordination has also been studied for decades, but many interventions designed to improve care coordination have been ineffective.[7] Effectiveness of coordination interventions may have been limited in part because they have typically focused on a small subset of the complete care team. Meanwhile, there have been relatively few studies of fragmentation and few interventions explicitly designed to address it.

The Need for a Focus on Fragmentation

Why fragmentation occurs in today's health care environment is almost certainly multifactorial, driven by factors ranging from the patient level to the policy level. Thus, the potential solutions will also likely need to be multifactorial. In the Table, we summarize potential drivers of fragmentation and potential corresponding interventions, informed by a previous qualitative study[8] and by the 6P model for developing multilevel strategies.[9] The 6 levels of the 6P model are the (1) patients (and caregivers), (2) providers (physicians), (3) practice settings, (4) plans (public and private payers), (5) purchasers (employers), and (6) populations (communities).

Highlighting these different levels at which fragmentation develops illuminates different levels at which interventions could be deployed, each with a distinct role in either decreasing fragmentation or mitigating its downstream negative consequences. For example, a patient-level intervention could involve educating and encouraging patients and caregivers to speak up if they notice gaps in communication among physicians. A physician-level intervention could involve (with appropriate plan-based incentives) improving communication among physicians for their common patients and creating shared accountability for patient outcomes. A practice-level intervention could involve creating alerts to notify physicians when they are seeing patients who have many ambulatory physicians and encouraging communication among members of the care team. The list goes on, and the strategies shown in the Table are illustrative, not comprehensive. The main point is that looking through the lens of fragmentation illuminates opportunities for intervention that would not have been systematically considered if one were looking through the usual lens of continuity or coordination.

Conclusions

Even though continuity and fragmentation are the mathematical inverses of each other, improving continuity (ie, increasing the number of visits with one physician) would not necessarily decrease the total number of physicians involved in a person's care, nor would it necessarily improve coordination among all of those physicians. Because the US has not focused on fragmentation, there is no comprehensive inventory of possible interventions that could be deployed to address fragmentation, and it has not yet been determined which interventions are most feasible or most effective. Similarly, there is no consensus on whose responsibility it is to design, fund, implement, or participate in interventions to address fragmented care. National dialogue and more federally funded research on this issue are urgently needed. Patients are experiencing avoidable harm from fragmented care, and they deserve better.

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Table.

Generating Ideas for Potential Interventions by Thinking Through Multilevel Drivers of Health Care Fragmentation

Level of action (6P model)	Contributors to health care fragmentation and subsequent harms	Potential interventions
Patients (and caregivers)	Assumption that physicians are communicating with each other	Educate and encourage patients and caregivers to bring medical records, test reports, and medicine bottles to visits and report perceived gaps in communication
Providers (physicians)	Lack of communication with each other regarding their common patients	With appropriate incentives (see also Plans), improve communication among physicians for their common patients and create shared accountability
Practice settings	Lack of notifications for physicians when they are seeing a patient with many ambulatory physicians	Create alerts, notifying physicians when they are seeing patients who have many ambulatory physicians and encouraging communication among members of the care team
Plans (public and private payers)	Undervaluing of cognitive services, putting pressure on primary care physicians to see many patients per day	Increase compensation for cognitive services, enabling more time to be spent per patient
	Failure to incentivize communication among physicians	Add financial (or other) incentives for primary care physicians and specialists to recognize their shared accountability for patient outcomes, fostering communication and teamlike processes
	Lack of use of claims to identify patients with highly fragmented care	Use claims data to identify patients with highly fragmented care and partner with physicians to reduce unnecessary fragmentation
Purchasers (employers)	Lack of identification of fragmented care as an opportunity for improvement	Put pressure on public and private payers to hold them accountable for decreasing unnecessary fragmentation
Populations (communities)	Lack of consistent communication among community-based urgent care centers and patients' other physicians	Improve communication between urgent care centers and patients’ other physicians