Simple Rules That Reduce Hospital Readmission

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Abstract
To overcome system failures, health care organizations must implement a few simple rules of complex adaptive systems. I describe Transition in Care, Kaiser Permanente Southern California’s program to reduce hospital readmissions, as an example of a program design that meets the principles of complex adaptive systems and enumerates five rules, which must be followed if a health system is to create value for their stakeholders.

Introduction
In an appendix to the classic Institute of Medicine report, Crossing the Quality Chasm, Plsek suggests that the science of complex adaptive systems might be applied to improve health care outcomes. He also warns that attempting to design health systems using the rules of complex mechanical systems (e.g., the temperature control system in a large building) is likely to result in failure and frustration. System failures can be reduced in complex mechanical systems by increasing the number of rules that are applied to system management. This strategy does not work for complex adaptive systems (e.g., health systems with multiple components, such as individuals, groups of individuals, clinics, and hospitals) because the components respond to stimuli in many different and fundamentally unpredictable ways. This occurs because the components are free to make choices. Even though the behavior of the individual components of complex adaptive systems can never be predicted with absolute certainty, a paradox exists: the general behavior of the overall system can be described with a few general rules. For example, just 3 rules explain why birds flock, mammals form herds, and fish school. Each animal acts to 1) avoid collisions, 2) match speed with neighbors, and 3) move toward the center.

Transition In Care
Kaiser Permanente (KP) Southern California’s (KPSC’s) program to reduce hospital readmissions, Transition in Care (TIC), is an example of a program design that meets the principles of complex adaptive systems. It relies on just eight simple rules:
1. Stratify patients by risk of readmission
2. Create a standard discharge summary
3. Reconcile medications across the continuum of care
4. Maintain a posthospital discharge hotline
5. Make a posthospital discharge phone call
6. Schedule the patient to see a physician within seven days of discharge
7. Order a palliative care consultation for high-risk patients
8. Conduct a case conference if the patient has complex disease.

When TIC was implemented in 2012, readmission rates declined to 83% of the expected rate, and the absolute readmission rate declined from 15% to 12.6%. For this achievement, the program was recognized with the 2012 Lawrence Safety Transfer Award. The details of TIC are reported in this issue of The Permanente Journal.

Results
The results of the KPSC program are noteworthy. Although the data are not directly comparable, the impact of TIC appears to be significantly greater than that of the recently reported Medicare initiative to reduce readmissions. In the 14 intervention communities in that trial, readmission rates only declined from 15.21 to 14.34 per 1000 Medicare beneficiaries. Although TIC addressed readmissions for patients hospitalized for any reason, we suggest that the hospitals participating in the American Heart Association’s quality-improvement program Get With the Guidelines-Heart Failure might benefit from adopting the KPSC rules. Although the program components associated with discharge processes and transitional care were the only ones associated with readmission rates, 26% of the hospitals that participated in Get With the Guidelines-Heart Failure did not have a social worker on the heart failure care team, and only 20% taught patients about signs and symptoms of heart failure. Nearly a quarter of the participating hospitals rarely or never scheduled follow-up appointments before discharge, and few hospitals mandated that outpatient clinicians be informed about the patient’s hospitalization within a defined period.

Five Rules That Must Be Followed
Nearly all complex adaptive systems both comprise other complex adaptive systems and are themselves members of larger systems. All programs to reduce readmissions exist within a larger health system that has multiple stakeholders. Some of these stakeholders have a goal of contributing to the general welfare and some of these stakeholders have a conflicting goal of personal or organizational profit. It appears that five rules must be followed if the health system is to create value for most stakeholders as they collaborate or work at cross purposes:
1. The stakeholders must agree on a set of mutual, measurable goals for the health system
2. The extent to which the goals are being achieved must be reported to the public
3. Resources to achieve the goals must be available
4. Stakeholder incentives, imperatives, and sanctions must align with the agreed-on health system goals

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5. Leaders among all stakeholders must endorse and promote the agreed-on health system goals.

Examining the activities to reduce the rates of readmission for heart failure and other conditions in the context of these rules suggests that the country, not just KP Northwest (KPNW) and KPSC, may be on the cusp of success:

• The stakeholders must agree on a set of mutual, measurable goals for the health system. Although there is some disagreement with 30-day readmission as the appropriate measure of quality of care, there is broad agreement that outcomes of patients who have been hospitalized need to be improved. This agreement is codified in measures of both Centers for Medicare & Medicaid Services (CMS) and Healthcare Effectiveness Data and Information Set.\(^8,9\)

• The extent to which the goals are being achieved must be reported to the public. CMS and the National Council for Quality Assurance report 30-day readmission rates for selected conditions.\(^10\) These reports may have obliged hospital authorities to pay attention to the problem of readmission.

• Resources to achieve the goals must be available. Medicare fee-for-service patients hospitalized for heart failure, myocardial infarction, or pneumonia are most frequently rehospitalized on postdischarge days 2 and 3.\(^10\) This suggests that either the patients were not ready to go home or their home was not ready to care for them.

Although the KPSC initiative to prevent readmission did allocate resources to reduce readmission rates, many hospitals have not done so.\(^3\) Because patients with heart failure may be socially isolated, mentally compromised, or lacking in financial means, community resources must be available if patients are to avoid rehospitalization. In addition to evidence-based medical interventions and community resources, resources that include, but are not limited to, care teams, communication channels, and decision support are needed to prevent unnecessary readmission.\(^11\) Adding community resources to the KPSC TIC list of components is a good starting point to identify the resources needed to prevent unnecessary readmission.

• Stakeholder incentives, imperatives, and sanctions must align with the agreed-on health system goals. The system of diagnosis-related groups rewards physicians for procedures rather than outcomes, and hospitals make more money keeping patients in the hospital rather than out. Under current financing programs, even nursing homes have an incentive to send patients with dual eligibility to the hospital for minor problems.\(^12\) But incentives are changing. For example, the HealthPartners program partners in Excellence rewards medical and specialty groups for achieving good levels of clinical quality goals, positive patient experience, and affordability, and under its total-cost-of-care program, HealthPartners rewards clinicians for high-quality care and prudent stewardship while also penalizing them if they do not generate improved results.\(^13\) CMS has begun to penalize hospitals for higher standardized early readmission rates for heart failure, acute myocardial infarction, and pneumonia. These penalties are expected to increase and cover additional conditions.\(^13\) Shared savings programs might be one way to eliminate perverse incentives for other stakeholders, including patients, without resorting to punitive measures.\(^12\)

• Leaders among all stakeholders must endorse and promote the agreed-on health system goals. Whether the metric of quality care is 30-day readmission rates or a superior quality indicator developed in the future, leaders in the field must continue to advocate for the application of care processes that improve patient outcomes. CMS and the National Council for Quality Assurance, through their programs, have signaled their commitment to reducing unnecessary readmissions. In Minnesota, the Institute for Clinical Systems Improvement, the Minnesota Hospital Association, and StratisHealth, the Minnesota quality-improvement organization, have joined forces in a campaign to reduce readmissions.\(^14\) By awarding the Lawrence Patient Safety Award to KPNW for its program to reduce readmissions and awarding the Lawrence Patient Safety Transfer Award to KPSC for its program to reduce re-admissions, KP leadership has signaled the importance of reducing readmissions. The effort to reduce unnecessary readmissions could be advanced by the advocacy of other individual and organizational opinion leaders.

Although the TIC program has a long way to go if it is to meet what the Medicare Payment Advisory Commission considers a feasible goal—a 76% reduction in readmission\(^15\)—it appears that it has identified the key system components that are necessary for success. The only measure of whether they have identified all of the necessary components is program success. The only way to know whether all of the components are necessary would be to delete them one at a time from a successful program and observe whether outcomes deteriorate. If outcomes worsen, the component is necessary; if outcomes stay the same, the component is superfluous. Even though KPSC has not applied this test to TIC, it is rightfully recognized for its achievement and for its continuing commitment to reducing the costly burden of unnecessary readmission.

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Operations Are Successful If …

In surgery all operations are recorded as successful if the patient can be got out of the hospital or nursing home alive, though the subsequent history of the case may be such as would make an honest surgeon vow never to recommend or perform the operation again.

— The Doctor’s Dilemma, George Bernard Shaw, 1856-1950, Irish playwright and cofounder of the London School of Economics