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## Sustainability in Quality Improvement and Patient Safety Initiatives

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## Sustainability in Quality Improvement and Patient Safety Initiatives

### Abstract

The question often asked of a quality improvement initiative is whether the improvement process has been sustained within the organization. Rarely is the question answered satisfactorily. The sustainability of an improvement process is important as it justifies the investment of human and financial capital. The term 'evaporation of improvements' addresses the dilemma that between 33% to 70% of all innovations are reportedly not sustained (Fleischer, Semenic, Ritchie, Richer, & Denis, 2015) . This evaporation of improvement captures the frustrating inability of many institutions to maintain the achieved improvement after the newness of the initial effort wears off (Buchanan, Fitzgerald, & Ketley, 2007). This article addresses the components of what makes a quality initiative sustainable by applying a framework developed that identifies components necessary within a sustainable quality initiative evident from the development process through to the implementation phase of the initiative which becomes part of the fabric of an organization.

### Keywords

sustainability, sustainability framework, quality improvement

*“All systems and organizations are faced with the challenge of implementing new practices at one time or another, yet many of the innovations that are initially successful fail to become part of the habits and routines of the host organizations and communities. Why do some take root and flourish while others languish?” (Wiltsey-Stirman et al., 2012, p.2)*

## Introduction

“Is this quality improvement initiative (QI) sustainable?” This question is often asked when embarking on a quality improvement or patient safety initiative, but rarely is the question answered satisfactorily. Sustaining an improvement process is one of the most important aspects of a quality initiative as it justifies the investment of human and financial capital. However, the sustainability of quality improvement and/or patient safety innovations is often elusive. The sustainability dilemma presents a continuous challenge to healthcare leaders (Wiltsey-Stirman et al., 2012), because somewhere between 33% to 70% of all innovations are reportedly not sustained (Fleiszer, Semenic, Ritchie, Richer, & Denis, 2015). Quality leaders in the National Health System in the United Kingdom (UK) refer to the elusive goal of measurable sustained change as the “evaporation of improvements.” This term captures the frustrating inability of many institutions to maintain the achieved improvement after the newness of the initial effort wears off (Buchanan, Fitzgerald, & Ketley, 2007).

One might ask why the sustainability of quality initiatives can be so challenging to achieve, as suggested by the relatively low percentage of quality initiatives and/or patient safety innovations that are sustained after implementation (Fleiszer, Semenic, Ritchie, Richer, Denis, 2015). Applying Batalden’s adage that “every system is perfectly designed to get the results it gets” (Carr, 200, p. 1) to sustainability suggests that the developers of quality initiatives may not build into the initiative what it takes to sustain the improvement process into the systems. The sustainability challenge for QI initiatives is a problem experienced in all industries and organizations, and is not a limitation found exclusively in the healthcare arena (Scheirer, 2005; Wiltsey-Stirman et al., 2012).

## Principles of Sustainability

Fleiszer, Semenic, Ritchie, Richer, and Denis (2015) framed their concept analysis of sustainability as multi-dimensional and multi-factorial with three defining characteristics and four pre-conditions (See Figure 1). Their analysis of the phenomena of sustainability in quality improvement initiatives gives specific considerations as to what a quality improvement development team needs to consider prior to the development of an initiative so that there is greater likelihood that the quality innovation will become part of the fabric of the organization.

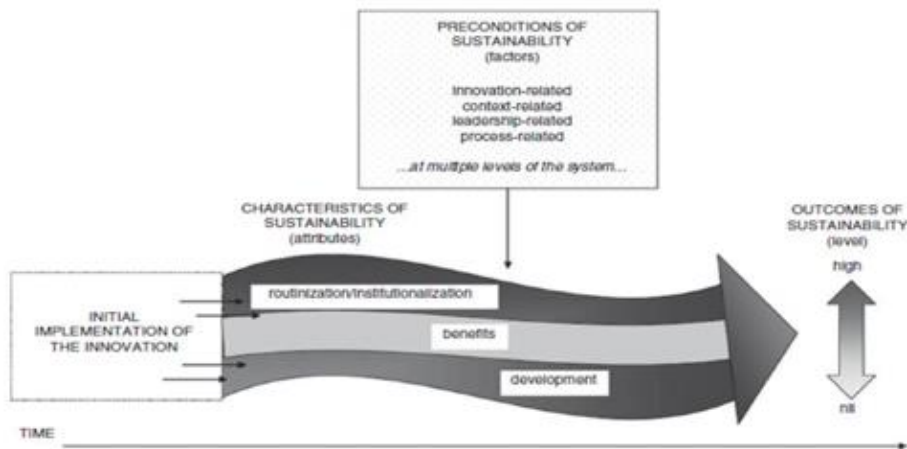
The three characteristics of sustainability are:

- 1) **Benefit:** Only effective and valuable innovations should be sustained;
- 2) **Routinization/institutionalization:** Adoption of practices which indicate that the innovation has moved from “new” to “accepted,” and the innovation’s structures and processes are now woven into the fabric of a specified setting, and,
- 3) **Development:** Sense of ownership by key stakeholders, who: 1) invest in the ongoing study and enhancement of the initial innovation, 2) address the need to apply the innovation in continually evolving environments

Two perspectives of the benefit characteristic are that of objective and subjective. The objective perspective is the quantifiable result that formally confirms the achievement of an outcome, while the subjective benefit characteristic is a perceived value that is more informal in nature that confirms positive results of the quality initiative to involved stakeholders (Fleiszer et al., 2015).

In the clinical setting, the routinization or institutionalization characteristic of sustainability is referred to when a process change first implemented as a quality initiative is accepted in the organization as a standard of care or best practice. The development characteristic, which is a sense of ownership of an initiative by the key stakeholders, requires constant renewal, re-invention, and resilience of the change process and addresses the ability to refine an innovation such that stakeholders recognize that the ideas and improvements from the initiative are ultimately their own. The recognition that development has occurred reinforces the sense of ownership and desire to invest and re-invest in maintaining (or sustaining) the change process (Fleiszer et al., 2015).

Figure 1: Concept analysis for the sustainability of healthcare innovations



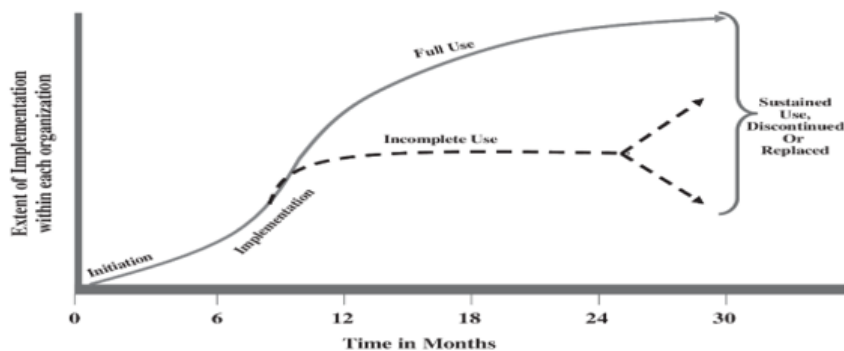
From: Fleiszer, Semenic, Ritchie, J.A., Richer, M., & Denis, J-L. (2015). Used with permission.

In addition to the three characteristics essential to sustaining an innovation, Fleiszer et al. (2015) describe four pre-conditions that influence sustainability.

- 1) **Innovation:** Refers to aspects of the innovation itself summarized best as the “fit” with the mission, and its relevance towards addressing the need or solving the problem,
- 2) **Context:** Addresses both internal and external aspects of a given setting.
  - a) **Internal context:** Organizational culture and project management capacity to keep an innovation on track
  - b) **External context:** Policies, regulations, legislation, and financial pressures (i.e., funding or market-place associated)
- 3) **Leadership:** The ability of the improvement champions and management team to generate support and inspire engagement, and,
- 4) **Processes:** Resembles quality improvement paradigms, such as performance monitoring and the ability to plan, trial, and implement

Schrier’s (2005) review of sustainability literature identifies that the quality improvement change process begins with the introduction of the innovation into the setting (initiation), continues with the implementation process, and ends with the adoption of the change process within the setting. Over time, the

Figure 2: Implementation of an innovation and possibility of sustained use:



From: Scheirer, 2005. Used with permission.

innovation is fully or partially implemented, and either sustained, abandoned, or replaced. Figure 2 is a graphic of the chronology of sustaining an innovation.

Scheirer (2005) and Fleischer and colleagues (2015) agree that sustaining an innovation rests upon: 1) stakeholders' perceived benefits of the innovation; 2) existence of effective processes to implement and ultimately routinize (institutionalize) the change going from new to expected practice; and, 3) existence of some level of flexibility, such that those in the system recognize and accommodate to the unique contextual aspects of the change process. Both authors recognize the need for leadership in the form of a "champion" for a given innovation, as well as the need for the innovation to fit within the mission of the key stakeholders in order for an innovation to be sustained in the organization (Scheirer, 2005 & Fleischer et al., 2015).

Scheirer (2005) observed that innovations may be either fully or partially implemented over time. While a number of factors affect the extent to which an innovation is fully implemented, she advocated for the use of established evaluation methods and tools such as logic models and key driver diagrams, to assist in defining the components needed in a quality initiative that are essential for the achievement of desired outcomes.

## Examples of Sustainability in QI Initiatives

### Case 1: Example of a non-sustainable initiative

A nurse practitioner in a rural primary care practice enrolled in a doctor of nursing practice (DNP) program identified that a relatively high percentage of the adult diabetic patient population diagnosed with type two diabetes between 35 and 50 years of age had hemoglobin A1C (HbA1c) levels 11 or greater. She discussed with the physician owners of the practice the need to educate patients with high HbA1c's in a systematic way to improve the patients' self-care to in turn decrease the HbA1C in this patient population. The nurse practitioner identified a Diabetes self-management education (DSME) approach to teaching patients about diet, exercise and self-management of their diabetes. The physician owners were supportive of her ideas and as key players in the practice, they gave permission to develop a diabetes self education management program to improve glycemic control in patients with Type 2 DM, as evidenced by lowered HgA1c, and to improve diabetic teaching for patients in the primary care practice.

The nurse practitioner developed a quality improvement initiative to address the knowledge deficits of patient and their families on nutrition, dietary approaches to diabetes, and basic knowledge level of diabetes. Each participant committed to attending two classes scheduled one week apart. Two different class times were given over a two-week period to accommodate scheduling needs of the patients. The initiative required that each patient and a designated family member attend two nurse practitioner led the educational sessions of 1.5 hours in length given over a two-week period in a conference room in the practice building. Educational sessions continued over a six-month period with new patients attending consecutive sessions. At the end of six months, the practice decided to discontinue the DSME sessions for a number of reasons. The long-term outcome of the initiative was to decrease the HbA1C levels in the given population in the practice

### *Outcome of the quality initiative.*

The classes designed to improve patients' DSME issues stayed in place for six months before the practice chose to stop the quality initiative for a number of reasons. From the onset, the physician owners were supportive of the NP to start and implement the DSME initiative for the NP to complete a required project for the doctoral program and they wanted a systematic approach to lowering HbA1c levels in this patient population, but their input into the development of the initiative was minimal. The practice owners were supportive of the NP using her time to teach the sessions, but they did not offer any compensation to the NP for ongoing educational sessions to sustain and continue the DSME teaching program.

### *Preconditions that influenced sustainability.*

Analysis of the case scenario applying the Fleischer et al. (2015) characteristics and preconditions identifies that the benefit to improve the care to patients with high HbA1Cs was valuable but the method or innovation of the DSME program itself was not effective or valuable to the key stakeholders/owners of the practice. The practice did not support the routinization/*institutionalization* of the project because the key stakeholders did not support the *structures and processes* of the initiative needed to provide educational sessions outside of the usual practice hours.

The aspect of the primary care practice taking ownership of the innovation did not occur as the commitment to invest further in the success that the innovation might bring was not present.

Regarding the leadership precondition that influences sustainability (Fleiszer et al., 2015), the nurse practitioner as the improvement champion for the DSME initiative could not generate support for the initiative and inspire others in the practice to become a part of the infrastructure needed to continue ongoing educational sessions. From a *context perspective*, the practice owners did not support the initiative from a labor intensive and financial perspective was not worth the energy of the overall practice and the time and monetary commitment necessary for the nurse practitioner to teach the classes on an ongoing basis. From a *leadership perspective* by the stakeholders/physician owners, the commitment of the nurse practitioner as the one and only champion in the practice willing to take responsibility for an ongoing DSME program was not enough to sustain the initiative in the practice.

### **Case 2: Example of a sustained initiative**

A neonatal nurse practitioner DNP student working in a neonatal intensive care unit (NICU) developed a quality improvement initiative aimed at decreasing intracranial hemorrhage in premature neonates. The initiative was based on an evidence-based practice of maintaining at-risk neonates born less than 32 weeks gestation in a midline position to prevent possible intraventricular hemorrhage (IVH) (Malusky & Donze, 2011). Both the NICU medical director and nursing director was supportive of implementing the intervention as one approach towards improving the intracranial hemorrhage rate in the NICU. The intervention involved implementing a protocol for nursing assistants, nurses and clinicians to follow to place and keep the neonate in midline position.

Over a number of months, the NNP met with key players in medicine and nursing to develop the details of the QI initiative including the intervention protocol, NICU staff education, and staff support of the initiative. The NNP became the project manager during the development and implementation phases of the quality initiative.

#### ***Development of the quality initiative.***

During the development phase of the initiative, the project manager met with staff, determined baseline measures for the desired outcomes, and was active as a nurse practitioner in the unit as an implementer and evaluator of how well the initiative was meeting its desired goals. The development phase of the initiative included staff education, placards to put at the bedside for reminders of the unique positioning protocol, and developed nursing champions in the unit who understood the goals of the initiative and what was needed to successfully implement the initiative.

When the protocol was initiated in the NICU, the project manager oversaw the intervention phase of the QI initiative and the iterative Plan, Do, Study, Act (PDSA) cycles to evaluate the implementation process and consequent changes needed to strengthen the protocol and evaluate if the long and short term goals were being reached.

#### ***Preconditions that influenced sustainability.***

Analysis of the case scenario applying the Fleiszer et al. (2015) sustainability characteristics and preconditions identifies that the benefit to improve the care to at risk neonates was of value to the NICU goal of decreasing intracranial hemorrhage in preterm neonates by maintaining the premie in a midline position for a specified time period. Key stakeholders in the NICU, including clinical leaders and staff caring for the at-risk neonates on a daily basis, were supportive of the protocol. The key stakeholders supported the cost and staff time needed to provide in-service educational sessions to educate nursing staff about the protocol, and the training module became part of the new staff orientation. The NICU took ownership of the innovation and committed to invest resources needed to make the quality initiative successful

Regarding the leadership precondition that influences sustainability (Fleiszer et al., 2015), the NNP as the project manager and improvement champion for the midline positioning initiative generated support for the initiative and incorporated others to become a part of the improvement processes needed to continue the positioning protocol. From a context perspective, the unit leaders supported the initiative from a labor and financial perspective while from a leadership perspective, the stakeholders guided the implementation of the quality initiative and supported others to become nurse champions for the initiative. The nursing champion role grew to where there were a number of champions who oversaw the ongoing implementation of the protocol. The oversight responsibilities initially done by

the NNP were incorporated into the fabric of the NICU. NICU staff understood the goals of the initiative and nurses and nurse practitioners were actively involved in all of its aspects.

The desired short-term outcome that all neonates in the unit who should be in midline position (NDP) were in the appropriate position was achieved in a relatively short timeframe. The outcomes were made public to the nursing staff so they saw that their efforts had been productive. The NDP initiative was sustained and the protocol to position at-risk neonates became a standard of care in the NICU. Analysis of the sustained initiative using the Fleiszer et al. (2015) framework indicates that the positioning initiative was of benefit to the neonates as an important step to prevent intracranial hemorrhage. Within a span of six months after implementation, the at-midline positioning initiative went from being a new QI process to an accepted standard of care in the clinical setting. From the *development* perspective, the key stakeholders in the NICU were involved in the initiative and invested in the staff to do what was needed to achieve the initiative's long and short term goals in the NICU.

## Conclusion

The sustainability of a quality improvement initiative is something that should be considered before a quality initiative is developed or implemented. The relatively low number of quality initiatives that move from new initiative to accepted process is a challenge to healthcare leaders (Wiltsey-Stirman et al., 2012) as unsustained QI initiatives tax the human and financial capital of an organization. The development of a quality improvement initiative must consider the characteristics and pre-conditions of sustainability that can predict if an improvement process will continue over time. The Fleiszer and colleagues (2015) concept analysis of sustainability that describes three characteristics and four pre-conditions for sustainability helps to clarify what a QI initiative should consider in its development and implementation.

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