

Diffusing Innovation in Your Practice

By Guy Chicoine

Innovation and diffusion, although related, have not been equally successful at Kaiser Permanente (KP). At KP, we are masters at innovation, and we do it often. Unfortunately, innovation can be costly. Often, our best innovations do not transfer or diffuse across regions, between medical centers, or even within modules as well as we would hope. Is there a way to make it more likely that a successful practice will be diffused or transferred? Is there literature and are there studies that support structured diffusion?

Luckily, these sources do exist. Everett Rogers reviewed a study on the diffusion of hybrid seed corn (Ryan and Gross, 1943) in his seminal study on diffusion, *Diffusion of Innovations*.^{1,p31-5} That study has been the basis for Diffusion Theory ever since. Several key factors from his work can be applied to the health care setting. First, some background.

Rogers reviewed how a new type of seed corn, hybrid seed corn, spread throughout a particular area of Iowa. It took approximately ten years for this diffusion to occur, and interestingly enough, the comparative advantage of using this new seed corn (increased bushels per acre) was not the driver on the diffusion. Although many farmers understood the benefit of using the new corn, they were unwilling to try it until someone they knew, someone who was part of their social network, had both tried and succeeded at planting and harvesting with this new corn. The diffusion came about because of both comparative advantage and social networks; comparative advantage of the new seeds' productivity was important, but that alone was not enough.

Through this process of studying what made differing farmers adopt a new technology, and subsequent studies after that, Rogers identified five key factors that make diffusion more likely.^{1,p15-6} We can apply these same five factors in a health care setting to make it more likely that a particular successful practice will

diffuse. Those five factors are (acronym borrowed from William Marsh, MD, of The Colorado Permanente Medical Group):⁴

T Trialability
A Advantage
C Compatibility
O Observability
S Simplicity
Or TACOS.

Trialability is the idea that a clinician can try a particular innovation without having too much at risk. The risk can be monetary, reputation, autonomy, etc. The idea is to break the innovation down so that trying a piece of it, whether with a process or program, does not exceed the clinician's risk threshold.

Advantage (in Rogers' words, *Comparative Advantage*)¹ is making sure that the new way of doing things has a clear advantage over the old way of doing things.

Compatibility is making sure that whatever the innovation is, it is compatible with both the culture and systems of the individual or group receiving the innovation. Certainly in KP, any new innovation should leverage the abilities of KP HealthConnect (the system) as well as support evidence-based medicine (the culture). Of course, these same rules of system and culture apply at the micro level as well (eg, the culture of the module and the system for rooming patients).

Observability is creating an opportunity for the receiving group or person to observe the innovation in action. This factor is key because the receiving group can: 1) see that this program can actually be successful, and 2) establish a relationship with the innovator such that questions of tacit knowledge, knowledge that can't be written down but is key to success, can be asked. What is tacit knowledge? Questions like, "How did you get your team to buy in? How did you tweak the original idea to make it work?" are questions related to tacit knowledge. The answers are not

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written down in binders or papers in the how-to guide, and yet, without that knowledge, it can be impossible to succeed. Having the receiving team visit the original team or module allows for tacit knowledge transfer and establishes relationships for future questioning and learning.

Simplicity is just that; if a new process is simple, it is more likely to be implemented. The more complicated it is, the more difficult it will be to implement. Often at KP, we create very complicated systems to cover every possibility. Simplicity would argue to cover not all possibilities, but most.

Rogers identified two other key learnings on diffusion:¹

1. The importance of reinvention
2. The fact that any diffusion has both a social and technical piece in order to be successful.

Reinvention seems to be a necessity of human existence. Often, we are not truly willing to receive a new process or program until it becomes “our” program. That personalization or slight change to the original process or program is “reinvention” and often, without allowing for this, the transfer may not occur. It is not just a human, personal necessity, however. Many times, one region is different from another (demographics, size, growth) just as one clinic is different from another (location, processes, programs offered) so allowing for some reinvention to allow for these differences not only allows further buy in, but also allows the necessary customization to work in that particular milieu. Of course, this does create a tension: Is the receiving site changing the practice or program so much that it is no longer effective? Or, has the site been able to import the basic concepts of the new practice, and simply changed the peripheral pieces of the practice? These are tensions that do not go away and must be balanced over time.

Every transfer has a *technical* component and a *social* component. Rogers actually states that every transfer is 50% technical (the practice) and 50% social (the relationships between the transferer and the transferee).¹ This identifies that in order to try something new, we often need a trusted source to learn from and work with. Rogers speaks of the importance of social networks and early adopters in order for participants to agree to transfer into their farms. In KP, how often have beautiful binders with wonderful ideas sat on shelves, while trying a new process happens as a result of a hallway conversation between two colleagues. Without context, and relationships, and the opportunity to discuss tacit knowledge, it is much more difficult for transfer to occur. As leaders, and as those inter-

ested in seeing diffusion grow in KP, we need to support participation in informal and formal networks, both social and otherwise.

Diffusion also takes place in a predictable pattern.^{1,p262} Innovators (or about 2.5% of the population) develop a new product or process. It is picked up by the Early Adopters (13.5%), and then to the Early Majority (34%), the Late Majority (34%) and finally the Laggards or Archivists (16%). Some important patterns to realize in this process:

First of all, the Innovators and the Archivists often take most of our time and attention. The fact is that the Early Adopters and Early and Late Majority are more than 80% of the process. While we want to recognize the innovators for their great work, they often are not the most effective communicators on their own innovations—and often we must look to a respected clinician in the early adopter phase to act as the translator to the majority. Also, while listening to the archivist is important, it should not be the reason to stop moving forward—there is history to know and respect, and change still needs to happen. Often, someone may be an innovator on one topic, and in the late majority on another, so where one falls within this spectrum is not a personality type, it is simply how one is reacting to that particular process or program diffusion.

How Does All This Apply?

As we look at differing programs, including programs from several locations, we can see that these learnings apply to KP as well.

In Group Health Cooperative, diffusion of their depression guideline started out inauspiciously. While the process was simple—a form with DSM 4 and severity tools on it—this was not enough given the stressed and busy schedule of primary care clinicians. Instead, networking (social networks), observability, and trialability came to the fore as the leverage points that caused the program to take off. Specifically, as the tool was introduced, one or two clinicians in each module would volunteer to try it out (trialability). As that happened, other clinicians in the module could see that it was possible to do (observability) and still survive the day. So, in this example, there were not all of the factors exhibited in TACOS, and yet there were enough of them, and including social networks, to allow for this diffusion to take off. This is an important point. One does not have to have all of the elements that Rogers writes

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about to be successful, but the more you have, the more likely you are that the program will be transferred.

In March of 2002, Group Health Permanente was looking at implementing the Heart Protection Study findings (statins for diabetics) in the midst of a significant downsizing. Since they had already implemented the HOPE study findings, they had some success with this approach (Compatibility). They also had established champions and leaders who had worked together previously (social networks). Also, the practice itself—prescribing statins for diabetics—was relatively simple, and trialable (not too much risk for the clinician to try). So once again, not all of the elements that Rogers identified were there, and yet enough elements were in place to make the implementation and transfer successful.

In Southern California, the work of developing a dyslipidemia guideline was intense and effective. The guideline was definitely evidence-based, and keys to its uptake have been quickly adapted and used to improve outcomes. When reviewing the process, a couple of key features also come to the surface:

- The tools are simple to use (simplicity).
- The recommendations are not risky for the clinician (trialability).
- Regional leaders are available and engaged in leading the implementation and demonstrating how to implement the process (observability and social networking).

Once again, not all of the areas of Rogers elements are obvious, but enough are there to make it work.¹

In closing, Figure 1 is a simple tool, a Spread Potential Worksheet³ to assess past transfers or plan for future ones:

The process to use this tool is quite simple, and useful. For a given transfer, think of each of the elements that Rogers has identified.¹ Then give that particular transfer a score for that element, 1 = low, 5 = high. Then if you are low in a few areas, strategize how to improve in those areas. So, for example, if a process is not particularly “observable” because no one in your

Component	1-5 Score	How to Improve
Trialability		
Comparative Advantage		
Compatibility		
Observability		
Simplicity		

Figure 1. Spread Potential Worksheet³

module is doing it, could you take a team to the original site to observe it and thereby increase the observability rating? Try this with other members of your team; you will be impressed where the ideas come from. The discussion alone between team members will be worthwhile. ❖

^a Presentation to National Operations Leaders, October 4, 2004, Portland, OR.

References

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Half Done

Well begun is half done.

— Aristotle, 384-322 BC, Greek philosopher