Chapter 2

Guideline Implementation: It is Not Impossible

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In an effort to implement appropriate practices for antibiotic prescribing, changing physician behavior is often cited as one of the key approaches.

I would like to begin this chapter by reviewing the science of changing physician and other provider behavior. Interestingly, much has been written about this over the years. A review of the subject is contained in a summary of a meeting on guideline implementation held at Leeds Castle, England in 1999 by Gross *et al*. The findings are based on a number of Cochrane Collaboration reviews summarized by Grol and Grimshaw as well as other reviews cited in Further Reading at the end of this chapter. We will consider which methods of behavior change are generally ineffective, variably effective and generally effective.

1. GENERALLY INEFFECTIVE STRATEGIES

The generally ineffective measures include several types of passive educational efforts. Ironically, these are the main methods that are still used to inform providers and change their behavior. Passive educational approaches include *publication of research findings* and *dissemination of guidelines*. While they are important to raise awareness of the diagnosis and management

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of diseases, they typically do not change behavior, as would be manifest by using newer approaches to diagnosis and management of diseases. *Lectures* and so-called *Grand Rounds* are also passive educational approaches. In these didactic sessions, usually a single speaker describes an approach and renders an opinion. Because of lack of significant interchange with the audience, these didactic sessions are ineffective in changing provider performance. It is now clear that we should not rely on passive educational approaches to effect change, although they can still be used to inform. We need other methods to effect change.

2. VARIABLY EFFECTIVE STRATEGIES

There are a number of implementation strategies that have been shown to be variably effective in changing behavior. First, *audit and feedback* may be helpful. In this instance, an individual provider's performance is monitored and that performance is compared confidentially with that of a peer group. This type of provider profiling is most effective when it is used for prescribing and test ordering. The feedback is most likely to be accepted without controversy when it is confidential, though some investigators have compared the individual to other peers by name. The latter approach is more likely to cause political problems and undermine the whole process of improvement.

The use of *local opinion leaders* and *local consensus conferences* often has been shown to be effective. Persons who are considered to be educationally influential by their peers would serve as local opinion leaders and they may encourage others to emulate their behavior. Local consensus conferences for adapting and adopting guidelines will be successful as they most often bring together the local opinion leaders and other major players. The other people to include in such groups are providers who are expected to be early adopters of change. Occasionally, providers who have shown resistance to change may be favorably affected by being included in a consensus conference. If it does not compromise the quality of care, *adapting* a new guideline or policy to the local medical climate will encourage local adoption.

Another variably effective approach is *consumer education*. Providing patients with information about their healthcare needs has been shown to have a positive effect. The effect, however, is small and varies from one clinical condition to another.

Finally, nothing replaces an inquisitive patient to help drive the healthcare provider toward a new, perhaps more appropriate direction. By involving the patient in the clinical decision-making, the care is more *patient centered*. By acknowledging the patient's wishes and needs, the provider is more likely to

adapt his approach to management to meet these needs and the patient's satisfaction is likely to be greater.

3. GENERALLY EFFECTIVE STRATEGIES

There are a number of implementation strategies for behavioral change that are effective most of the time. *Reminders* to healthcare providers are one such strategy. These reminders, however, have to be used sparingly; otherwise, they will be ignored if used too frequently.

Computer information systems can be helpful in a number of ways. *Computerized physician order entry* (CPOE) will avoid many of the problems associated with trying to decipher physicians' illegible handwriting and thereby make what the doctor has ordered clear to the nurse, pharmacist, and other healthcare providers. Errors in medication ordering and ordering of other tests should be significantly reduced.

In addition, *computer checks* can be programmed into a hospital's information system to provide reminders, warnings, and other suggestions to facilitate appropriate ordering of therapeutic and preventive treatments. Importantly, this type of feedback will offer the provider an incentive to use the system if the computer checks are not too numerous and annoying.

Educational outreach is another effective strategy. For example, in *academic detailing*, there is a one-on-one dialog that occurs between the expert detailer and the provider to discuss a new form of therapy or a new procedure. The detailer may be another provider or a pharmaceutical representative. The exchange tends to be *interactive* (i.e., the flow of information is in both directions) rather than didactic. The issue of asking "foolish questions" is usually not present. The provider being detailed can discuss the matter with the academic detailer until the provider feels he understands the issue.

Barrier-oriented interventions are critical. They must be tailored to specific local barriers. Examples of possible local barriers are:

- disagreement among experts,
- availability of alternative practices,
- inapplicability of guidelines to certain patient subgroups,
- patient refusal to comply,
- ceiling and power effects that relate to already high levels of compliance,
- institutional inertia,
- vested interests,
- ineffective continuing medical education, and
- uncertainty about when and how to apply evidence-based medicine measures.

The last generally effective strategy to consider is *multifaceted interventions*. This is probably the most important intervention strategy. Whenever change is being attempted, more than one strategy should be applied. Multiple strategies are likely to be more successful than one.

Inadequate studies have been done to permit us to describe what combination of strategies to use in different clinical situations. The key point is to use a number of the above-described change strategies to assure success.

4. THEORIES OF FACILITATING CHANGE

Insight into the theories of managing change will help us apply the above strategies more effectively as outlined by Grol and Grimshaw.

1. *Educational theories* point out that change is driven by one's desire to learn and be professionally competent. Learning should be interactive. When a local group meets to reach local consensus, "buy-in" is facilitated.
2. *Epidemiological theories* purports that we are rational human beings who will arrive at a rational decision when the best evidence is presented. Creation of evidence-based guidelines by national professional organizations is an example.
3. *Marketing theories* assume that we will be favorably affected by an attractive marketing package. Which media channel is used will depend on who we want to influence—innovators, early adopters, or late adopters. In a healthcare organization, the media channels may be local opinion leaders, academic detailers, or mass media advertising.
4. *Behaviorist theories* propose that change is influenced by external factors applied before, during, and/or after the targeted objective. The above strategies that apply are audit and feedback as well as reminders before, during, or after ordering a medication. Financial or recognition incentives and sanctions are other behaviorist approaches that could be applied.
5. *Social influence theories* emphasize the importance of social group recognition for implementing change. The group is composed of peers and/or opinion leaders. By feeding back the individual's performance in comparison with that of peers, the effect on changing behavior can be significant because a provider wants to successfully compete with his peers.
6. *Organizational theories* promote improvement by changing the system of care. The emphasis here is on the "bad system," not the "bad apple." These theories view healthcare as a series of interrelated processes and view the participants—the providers—as members of a team that can reach the predetermined goal. This point of view becomes more and more important as efforts to improve care repeatedly come back to the point that it is the system that has

to be changed and the provider must work as part of a larger team of many healthcare professionals.

7. *Coercive theories* promote the idea that exerting pressure and control will accomplish the desired changes. Healthcare regulations from external reviewing agencies or rules imposed internally are the change tools.

Comparisons with the airline industry are relevant to an extent. The airline industry uses checklists to assure that the right thing is done at the right time in the right place. The healthcare industry can certainly learn from this example. Medical care has become complicated enough that one physician cannot remember everything that has to be done for a particular problem. A healthcare checklist, therefore, should be helpful. For example, it can be a set of pre-printed orders for a particular disease such as acute myocardial infarction or community-acquired pneumonia. The checklist can still be individualized to the particular patient because each order on the order sheet has to be checked off before it is executed. This approach is not "cookbook medicine," but "team medicine" using a collaborative approach. The dilemma is getting all providers to accept the fact that they are not all knowing and will not perform perfectly all of the time. The airline pilot's acceptance of imperfection is a lesson for healthcare providers to emulate. The healthcare challenge of this decade and beyond is for the provider to come to the realization that using external resources such as a checklist or a professional team of different healthcare providers will allow them all to perform more perfectly.

An example of using the above information follows:

1. A medical or surgical disorder is selected where improvement in care would have a high impact on disease management, outcome, or cost containment. Community-acquired pneumonia (CAP) is a frequently used example where quality improvement efforts have been applied successfully.
2. A national CAP guideline is selected. In this case, there are at least three or four available from national professional organizations.
3. A local consensus group is gathered together. Champions who are local opinion leaders are selected. Other members of the group may include innovators and early adopters in care changes. Late adopters can be included to get the full spectrum of opinions. One or more of the guidelines is selected or in the case of CAP, performance measures from Medicare (i.e., The Centers for Medicare and Medicaid Services, CMS) and the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) are considered.
4. Performance measures can be viewed as the best part of guidelines where the measures represent the best of evidence-based medicine. Performance measures should leave out those recommendations that are based on expert opinion alone or poorly conducted research studies.

5. The consensus group should then decide which recommendations to implement. The group may have a problem with one or more of the recommendations. In that case, unless the science behind it is incontrovertible, the group should make the change so that the group feels ownership of the outcome by locally adapting the recommendation.

6. The CMS and JCAHO measures used which improve outcome are:

(a) Antibiotics should be administered within 4 hr of admission to the healthcare facility.
(b) The recommended antibiotics should be used and no others.
(c) Blood cultures, if drawn, should be drawn before antibiotics are given.
(d) The patients should be screened for receipt of influenza and pneumococcal vaccine before discharge.

7. Other measures can be added that improve efficiency, patient satisfaction, and reduce length of stay. For example:

(a) Intravenous (IV) antibiotics should be switched to oral antibiotics as the patient is stabilizing according to the Ramirez criteria.
(b) The patient can be discharged to home when the social conditions permit and no other acute conditions need hospital management.

8. An admission order sheet can include the CMS and JCAHO performance measures written in the form of orders that the provider checks off.

9. Nurse practitioners or other personnel as case managers can be made part of the team and help physicians implement the measures. The nurse practitioners or discharge planners can be made aware of the switch therapy recommendations from IV to oral antibiotics and the discharge criteria, thereby helping to facilitate their implementation.

10. Once all these approaches are determined by the consensus group and approved by the medical staff, the medical and nursing staff should be informed of the plans and the reasoning behind them. Their assent to the program is critical. Then the program can be implemented.

11. Additional personnel who have to be hired to implement this program would most likely easily be paid for by the financial gains from a reduction in length of stay and the more efficient utilization of resources. Consequently, awareness of the financial impact of these improvement efforts is important.

The multifaceted intervention described for CAP takes advantage of many of the implementation strategies described and uses most of the theories of facilitating change described. In addition, adding measures that assure the business case for quality improvement will help gain administrative support for the additional resources, such as personnel, required to accomplish the task. In the end, patient care is drastically improved, patient satisfaction is

higher and the providers learn that working as part of a healthcare team is significantly easier and more effective.

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