

Clinician Champions and Leaders for Electronic Medical Record Innovations

By Michael A Krall, MD

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Electronic medical records (EMRs) typically require substantial change in the way clinicians work and may contribute to transformation of health care organizations. Effective leadership can mitigate the associated instability and resistance. Aspects of clinician champions of new technology are examined, including their importance and how to identify, develop, and support them.

Introduction

Installing an electronic medical record (EMR) in a large organization is a complex and difficult undertaking.¹ Achieving acceptance by clinicians is among the greatest challenges.² EMRs typically require substantial change in the way clinicians work; indeed, introduction of EMRs may transform health care organizations. Nearly any change is associated with instability and resistance, and this is well documented among physician users of EMRs;^{3,4} fortunately, however, effective leadership may help mitigate and overcome this resistance.^{5,6}

How important are clinician champions in achieving clinician acceptance? How can they be identified? What can be done to develop their knowledge, skills, and attitudes so that they are optimally prepared? What support will increase their ongoing effectiveness? Answers to these questions draw from literature review and from the author's own experience implementing EMR systems in a health maintenance organization.^{7,8}

Adoption of Innovation and Change in Health Care

Some published work relates to adoption of innovations in health care settings. In 1985, Freiman⁹ surveyed 484 physicians to determine the number of new procedures adopted during one year. The author identified differences by clinician specialty, age, board certification, and practice type but did not report on the impact of attitudes or behaviors of colleagues, leaders, or champions. That same year, Frost¹⁰ described use of a microeconomic model of physician behavior (in Great Britain) to generate testable hypotheses regarding physicians' adoption of innovations in processes as well as products. Even using this technical economic analysis, the author considered "peer pressure" among the leadership factors

which "might encourage the adoption of a socially valuable diagnostic innovation."^{10:1197} (Peer pressure implies a type of peer leadership with a somewhat more negative connotation.)

Scott and Rantz¹¹ described a nursing task force team approach to planning and implementing a restructuring project in an inpatient medical unit. This team approach focused on creating an environment for change. Designating a team as "change champions" is appealing because teams are often an effective unit for process improvement;¹¹ however, applicability of this method may be greater among nursing staff than among physicians, who tend to practice more independently. Indeed, even when organized into groups, doctors often "practice alone together."

Massaro¹² described the 1988 implementation of a medical information system (MIS) in an academic medical center. The MIS included mandatory physician order entry. The implementation process was far more difficult than expected, and cultural and behavioral problems were the most troublesome. In response, a senior management committee was created and met weekly beginning some time into the project. This committee included chairs of three major clinical departments and played an important role in integration of the MIS into the operational culture of the medical center. A chief resident's coordinating council was also formed to further facilitate the MIS implementation by exchanging information across resident teams. Although Massaro did not specifically address the role of physician champions, the author did indicate that leadership was important to eventual acceptance of the MIS: The author asserted that "initiatives of this magnitude cannot be managed on a part-time basis using personnel who volunteer time from an already busy schedule"^{12:24} and that "the institution must be prepared to invest resources ... that are appropriate to the magnitude of the task and must be prepared to support those individuals it chooses for this management role."^{12:24}

In 1997, Ash^{13,14} described organizational factors that influence diffusion of information technology in academic health centers. The author's goal was to determine the extent to which this diffusion is affected by several variables: communication, participative decision-making, top-management support, planning, reward systems, and existence of champions. The author surveyed more than 600 informatics profes-



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sionals and more than 700 library staff members from 67 academic health centers about their use of three innovations: end-user online literature searching, the computer-based patient record, and electronic mail. Respondents were asked to indicate on a five-point Likert scale the extent to which faculty members, information professionals, and campus administrators “really encouraged”^{14,110} users, their colleagues, or departments to use each innovation. The author found that the variables did not have the same effect on each innovation. Communication, decision-making, and planning all appeared to affect diffusion of the computer-based patient record, whereas rewards appeared to be the least important variable in this regard. Presence of champions did not appear to affect use of the computer-based patient record, but champions were apparently important in encouraging the use of electronic mail. The champions’ apparent lack of influence on use of the computer-based patient record may be attributable to the specific questions asked, the type of individuals and groups queried, or other factors.

The Case for Leadership in Innovation

“Leadership is the ability to influence a group toward achievement of goals.”^{5,347} Physicians are influenced by what they are taught in medical school, by what they read, by what they learn in continuing medical education courses, and by what they hear and observe from their peers. Historically, medical education has relied heavily on an apprenticeship model,^{15,107,120} even today, physicians generally train in teams with a formal hierarchy of mentoring and instruction. They usually develop a habit of consulting with their colleagues on clinical and practice questions. After formal medical education is completed, influence of peers remains powerful; indeed, as practicing physicians spend less time in formal training, they may rely even more on these contacts for information and guidance—and the more credible the role model, the greater the impact of the modeled behavior. Such credibility is achieved through formal credentials and training or from practice experience and exemplary ongoing performance in clinical, academic or administrative pursuits such as presenting clinical material at meetings or conferences, leading department meetings, publishing papers, or otherwise developing a reputation for expertise in specific areas. Clinicians tend to value highly such expertise as well as other traits such as “being a team player,” willingness to “pull one’s weight” or to

“pitch in,” honesty, reliability, and engaging personality; these characteristics increase the ability to influence others. Particularly in times of great difficulty, uncertainty, stress, or transition, clinicians look to their colleagues for advice and guidance. The result may have great impact on clinician behavior.

The importance of “physicians as leaders in improving health care” recently prompted a new series of articles in the *Annals of Internal Medicine*¹⁶ based on a three-part premise: that an existing body of knowledge can inform the goal of physician-leaders to improve health care, that this goal is typically not addressed in medical school, and that many physicians will want to study such a curriculum and will benefit from it.

Types of Leaders

Leaders can be described as formal or informal types. Formal or “officially sanctioned” leaders hold a specific managerial rank or other position of authority, whereas informal leaders emerge and influence others by their moral authority, charisma, energy, strength of character, or other attractive attribute. Possessing and demonstrating such attributes makes official leaders more effective as agents of change—and strong, visible endorsement by formal leadership is typically necessary for successful introduction of innovations. Nonetheless, some people inherently mistrust or have an aversion to authority and thus are unlikely to respond well to formal leaders but may be comfortable seeking advice or receiving suggestions from peers. Both types of leaders are therefore important.

Levels of Leaders

Most organizations have levels of formal authority. Although size and structure of health care organizations varies tremendously and impact and scope of leadership may vary by setting, leadership is nonetheless likely to affect most health care settings. Larger organizations often have at least three levels of hierarchy—upper management, middle management, and the work team or individual worker—each of which may have formal and informal leaders. Some people may operate at more than one level within the organization, holding an administrative position while serving as a member of a clinical team, for example. When this duality occurs, roles may become confused. This circumstance is common among physician-leaders and can be complex. Each role inherits different levels of authority and responsibility and

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Table 1. Characteristics of managers and leaders

Manager	Leader
<ul style="list-style-type: none"> • Has impersonal/passive attitudes toward goals • Views work as an enabling process involving combination of people and ideas interacting to establish strategy and make decisions • Prefers to work with people and to avoid solitary activity • Relates to people according to the role they play in sequence of events and decision-making process • Able to cope with complexity • Brings about order and consistency, formal plans, rigid structures, and monitoring results 	<ul style="list-style-type: none"> • Has personal/active attitudes toward goals • Works from high-risk position • Often temperamentally disposed to seek out risk and danger • Concerned with ideas • Relates to people in intuitive and empathetic ways • Establishes direction by developing a vision • Aligns people by communicating the vision • Able to cope with change • Inspires people to overcome hurdles

Adapted from Robbins (5:20-1) "Organizational behavior: concepts, controversies, applications," after Abraham Zaleznick and John Kotter of the Harvard Business School

thus creates ambiguity for both the leader and for those within his or her sphere of influence. An upper-management position may confer advantage due to access to special knowledge and authority—but formal authority and special status can also interfere with credibility (and therefore, effectiveness) among some persons lower in the hierarchy. Leaders with the most formal authority may not always be those with the most influence on other people.

Leaders at each level rely on different strengths to effect their influence. Moreover, requirements differ for leaders at each level: Generally, upper-management leaders are expected to develop and articulate the overall "vision" and strategic importance or rationale for an innovation, whereas a middle manager (eg, a department head or chief of service) must communicate this same vision to specific department members while interpreting the vision and its consequences. This middle manager may be in the difficult position of advocating a position which he or she neither developed nor fully agrees with. As an effective leader, however, the middle manager must present the innovation in as positive a light as possible. This task may create in the middle manager an internal conflict which, in extreme cases, he or she may not be able to resolve.

The leader of a work team or module takes the

message one step further because this person and his or her colleagues must live with the consequences of the innovation on an immediate and personal level. If the decision to adopt the innovation has been made and is inevitable, the team leader must find ways to adapt to the innovation on a daily, real basis. Verbal and nonverbal responses of these leaders to the innovation will have a major "ripple effect" throughout the work team. Individuals who work most closely together are likely to have the greatest impact on each other. For this reason and because of the crucial role of work teams in improving clinical processes, it is especially important to support and develop resources at this level.

Leaders, Managers, Champions, Sponsors, and Change Agents

Leaders are not necessarily "change agents." Moreover, by having a very conservative (or even regressive) outlook and behavior, leaders are sometimes agents of resistance to change. Of course, such conservatism may well be appropriate at times; change is not always either desirable or inevitable. In today's rapidly changing health care environment, however, effective leaders must anticipate and manage change with alacrity. Reinertsen stated "leadership is focused on producing needed change. Management ... [is] working with people and processes to produce predictable results."^{17:834-5}

Leaders and managers have different attributes (Table 1),⁵ and various categories can be defined. "Champion" and "sponsor" are two such subgroups which have been defined by other authors.^{6,18} "Champions are the individuals who emerge to take creative ideas (which they may or may not have generated) and bring them to life. They make a decisive contribution to the innovation process by actively and enthusiastically promoting the innovation, building support, overcoming resistance, and ensuring that the innovation is implemented."^{18:40} By one definition, champions "attempt to obtain commitment and resources but lack sponsorship."^{6:20} "Sponsor" is the term often applied to leaders (usually, senior managers) who "authorize, legitimize, and demonstrate ownership"^{6:20} for a specific change project or team. Sponsors have the organizational authority to provide resources, local support, or both for the change. They help eliminate organizational barriers to the innovation. The change agent plans and actually brings about the implementation.

Characteristics of Effective Change Agents

Howell and Higgins¹⁸ have written an excellent discussion on “champions of change.” After interviewing more than 150 leaders involved with 28 successful information technology innovations in 25 large Canadian organizations (though not health care organizations), the authors conducted in-depth studies of 25 of these leaders. Table 2 lists patterns of personality, behavior, and experience characteristics of these leaders¹⁸ and includes input from other authors.^{6,15,17,19,20}

Identifying Champions

A reliable mechanism to identify people with leadership potential would be helpful—and should be possible if, in fact, they have behavioral and personality traits, organizational experience, and personal history in common with one another. Instruments such as Myers-Briggs Type Indicators²¹ are used to identify people with personality traits consistent with leadership potential. This instrument is used today by many prominent organizations, including some

Table 2. Characteristics of effective change agents	
Personality Traits:	
High self-confidence ^{6,17,19,20}	Desire to lead and influence others ¹⁹
Persistence ^{18,19}	Honesty and integrity ^{17,19}
Energy ¹⁸	Environmental sensitivity ²⁰
Risk-taking/courage ^{17,18}	Awareness of culture ^{6,20}
Drive and ambition ¹⁹	Vision ²⁰
Intelligence ¹⁹	Empathy ¹⁷
Behavioral Characteristics:	
Expresses compelling vision ^{17,18,20}	Gains commitment of others ¹⁸
Often supports their views with data ¹⁷	Active innovator ^{17,18}
Pursues unconventional action plans ¹⁸⁻²⁰	Perceived as agents of change ²⁰
Develops potential of others ¹⁸	Develops and tests changes ¹⁷
Gives recognition to others ¹⁸	Develops teamwork among sponsors, agents, and targets ⁶
Strong personal conviction ^{18,19}	Ability to demonstrate balance ¹⁷
Career Experiences:	
Long tenure with the organization ¹⁵	Wide organizational experience ¹⁸
Middle management position ¹⁵	Successful personal and organizational history ⁶
Decision-making authority ¹⁵	Credibility with key sponsors ^{6,17}
In-depth knowledge of the industry ^{18,19}	Trust with key targets ⁶
Adapted from Howell and Higgins, ¹⁸ Kirkpatrick and Locke, ¹⁹ Conger and Kunungo, ²⁰ Harrison, ⁶ and Reinertsen. ¹⁷	



Other important interpersonal skills include consulting skills, conflict management skills, and facilitation training.

in health care.⁵ Other instruments, such as the “Change Agent Assessment,” exist and may become available commercially.⁶ This tool is used to select change agent candidates and to assess the capability and performance of current change agents. The tool also enables supervisors, chiefs of service, and department heads to recognize people with leadership interest and aptitude. Formally, “... individuals who have champion potential can be identified through validated personality and leadership measures or by observing behavior in interviews or assessment centers.”^{18:54} Informally, people with energy, vision, desire to lead, and other characteristics typical of leaders tend to surface and make themselves evident.

A mistake that an organization should avoid is to choose “champions” primarily on the basis of their availability, expressed interest, or some political consideration independent of the other characteristics predictive of success. “[The] early appropriate identification of potential champions gives managers the opportunity to provide an appropriate environment and career experiences that will encourage potential champions to emerge in a championing role.”^{18:54} Sponsors may have to be convinced by others that the quality of change agents will have an important impact on implementation success and that the resources needed to develop and support these change agents are well invested.⁶

Developing Champions

Leaders may be born, but they certainly are also developed.¹⁸ Change agents unaware of the skills required to be effective are at a disadvantage.⁶ Skills and techniques such as self-awareness training, leading effective meetings, time management, active listening, and effective oral and written communication can be taught. Instruments and seminars also are available to assist with this training.⁶ Other important interpersonal skills include consulting skills, conflict management skills, and facilitation training.⁶ Operating effectively in multidisciplinary teams is another learned skill; such effectiveness requires appreciating and understanding the differing frames of reference, values, and learning and working styles of various types of professionals (doctors, midlevel clinicians, nurses, medical assistants, pharmacists, and others). Many organizations—including those in the health care industry—provide or participate in programs to develop leadership skills in senior managers and in middle managers.

Supporting Champions

For champions to be effective, they must feel empowered and supported. Among their needs is current, accurate information, which includes data about the overall plan, project status, near-term developments, and active problem areas. To maintain credibility with their colleagues, change agents must have answers—or, at least, a facilitated conduit to these answers. Colleagues should see change agents as a reliable source of information. The champions require regularly scheduled and ad hoc updates and clarification and must sense that they are involved, included, and important. For their own development, change agents need time for continuing education and for “hands-on” experience. They also need opportunities to demonstrate and model for their colleagues the knowledge, skills, and especially the attitudes required for adoption of innovations. Change agents also need to feel appreciated and adequately compensated for taking both the lead and the risk. Such compensation might include paid administrative time and other perquisites such as sponsored travel or meeting attendance, books, journals, software, or electronic equipment. Opportunities to relate formally and informally with sponsors and with other project leaders may also be rewarding.

Call for Further Research

Many questions remain about use of clinician champions for introducing electronic medical records and similar innovations. Although some answers can be gleaned from work in related areas, very little research has focused specifically on this topic. Knowing more about clinician “change agents” and about the people they influence might allow more timely and successful diffusion of these technologic innovations. Additional research is thus warranted. ❖

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Complexity Theory: Minimum Specifications

"The principle of minimum specifications suggests that managers should define no more than is absolutely necessary to launch a particular initiative or activity on its way.

They have to avoid the role of 'grand designer' in favor of one that focuses on facilitation, orchestration and boundary management, creating 'enabling conditions' that allow a system to find its own form."

Gareth Morgan, "Imaginization: The Art of Creative Management," Sage Publications