

ACADEMIA AND CLINIC
Physicians as Leaders in the Improvement of Health Care Systems
James L. Reinertsen, MD

Annals of Internal Medicine 15 May 1998 | Volume 128 Issue 10 | Pages 833-838

Abstract: Physicians are often asked to assume leadership roles in their practices, hospitals, and academic departments. These positions can be excellent leverage points for improvement of health care quality. To make optimal use of these opportunities, physicians must learn how to lead. This paper is intended to be a primer for physicians who are asked to lead and want to learn how to lead well. A body of knowledge that physician-leaders should acquire is described, and case examples are used to address such topics as the nature of leadership, the relation between leadership and management, and ways in which physicians might approach a new leadership assignment. Guidelines for physicians who must play the role of followers are offered, and challenges that physicians who lead other physicians may face are described.

At some time during a physician's professional life, he or she will probably be asked to lead. This opportunity may come when the physician is appointed chair of a department at a community hospital, managing partner in a group practice, or chair of a task force on violence in the community.

Like all-star athletes who are asked to become player-coaches, physicians have been trained to excel as solo performers. But when physicians become leaders, they become responsible for molding a team, setting a direction, and teaching others how to play. Some all-star players make this transition well; others do not. In this paper, I discuss the body of knowledge about leadership that, if well learned, can help physicians use leadership positions to improve the care given to their patients and their community.

Two Leadership Stories

Successful Leadership

A physician in a four-person internal medicine group had just been appointed Director of Quality Improvement for his 50-physician primary care network. He was discouraged to learn, through stern reports from various health plans, that only 60% of his group's female patients receive appropriate screening mammography. He wanted to improve performance both for professional care reasons and for market and business reasons. However, he and his partners had no way of knowing (other than from outdated,

overlapping, and otherwise unusable reports from the health plans) which of their patients needed mammograms. The physician contacted all of the plans, persuaded them to release data from their claims databases, and personally developed a merged database so that he could determine which patients needed mammograms. He learned that he could not get all of the necessary data from the health plans' claims databases; some primary data collection in his own practice would be necessary.

He therefore designed a data collection method and convinced his partners to record the needed information themselves at every office visit. Armed with the necessary information, the physicians sent reminder letters to female patients in the practice. The rate of appropriate mammography use in the four-physician group went from 60% to 80%. The physician told this story to the 50 primary physicians in his practice network, and all of them now use his system. As a result, many more women now receive appropriate mammograms.

Failed Leadership

A surgical department in a multispecialty group had grown to the point where it was possible to consider subspecialization within the department. Most members favored the change, but a few senior members vigorously opposed it. When the subject was discussed at department meetings, proponents of subspecialization argued that quality of care would improve. Opponents cited concerns about call coverage, compensation, and the need for variety in their work. No one collected data. The conversation dragged on for months; eventually, some excellent department members resigned in disgust. Replacements were recruited, but with this unresolved issue hanging over the department, some worthy candidates went elsewhere. The remaining department members were left with an increased workload, low morale, and uncertainty about their department's future direction. The department chair never resolved the issue.

Characteristics of Leadership

Leaders change things. Leaders examine the current situation, look ahead to future possibilities, and recognize the need for improvement. They then create a new system or change the system from what it is to what it should be. Leading is therefore somewhat hazardous because it requires people to change.

Leadership is an action, not a position. Having a lofty title and your own parking space does not mean that you are leading. A leader initiates [1]. He or she picks up the phone, calls the health plan, and asks for a disk of the practice's data on mammography.

Leadership is not victimhood. To rework a Gertrude Stein line, when one arrives at leadership, one finds that "There is no 'them' there." It would have been easy for the internist in the first scenario to say, "Oh, those health plans are making my life miserable with all this inaccurate data, beating on me to improve mammography. It's their fault-when they clean up their data, I'll consider doing something." This is a common response,

especially when the data are questionable. It is easy to blame circumstances or to point the finger at "them." However, one cannot simultaneously be a leader and a victim [2].

Leaders define reality [3], often with data. In the first scenario, the mammography information was unusable until the leader sorted it out. It then became a powerful stimulus for improvement. Conversely, in the second scenario, the surgical department chair failed to collect any data, leaving the surgeons with dueling opinions.

Leaders develop and test changes. If a test shows that a change is good, many other physicians will make that change. This may be the most common opportunity physicians have to lead because it does not require that the leader be in a titled leadership position.

Leaders take risks. Many physicians, especially in such large organizations as hospitals or group practices, see their role as to shoot at the skeet served up by administration. Leader-physicians run risks by proposing change (serving up skeet) to their colleagues. Physicians are skilled at critical thinking and can find every possible reason to reject a new idea. Leaders take that risk.

Leaders persuade. In the first scenario, the health plans had to be convinced to give out data in an unprecedented manner. Persuasion requires credibility, persistence, and an exceptional ability to describe the difference (in terms that are personally meaningful to each participant) between the status quo and the desired future state.

Physician-leaders need the "mantle of leadership." What gives physicians the credibility necessary to persuade other physicians? Physician-leaders receive a mantle from their colleagues on the basis of the belief that they are excellent physicians and are trustworthy, confident, articulate, and willing to admit mistakes. They have walked a mile in the shoes of their colleagues. This mantle is necessary but not sufficient for leadership. "A promotion to manager can give authority, but not power. It is the people you are to manage who will give you power" [4].

This mantle also has a dark side. Some physicians who vote to bestow power on a fellow physician do so with the expectation that that physician-leader will look out for their particular interests. If the physician-leader takes a larger view on an issue, his or her colleagues may retract their support. The physician-leader must have a gift for balancing the concerns of department members with the needs of the larger system. No system can function optimally if each department works solely for its own interest. [5, 6].

Leaders are not daunted by the loudest negative voice. One dissenter can derail a worthwhile improvement in a hospital, academic department, or practice. Leaders listen to all voices and then must bring the group to action despite heavy criticism from within the group itself. Votes are useful, but if a few persons vote against an improvement, it does not mean that the improvement should come to a halt [7].

Leaders must do much of their work outside of their immediate area of responsibility. The first scenario crossed the boundaries of private practice, the health plans' data sets,

and a primary care network. Most useful improvements require a leader who is able to think and work "outside the box." [8]. This adds complexity to the leader's work but dramatically increases the likelihood of meaningful improvement [5].

Leading and Managing: Some Definitions

A useful definition of leadership is [9]

"... a set of processes that creates organizations in the first place or adapts them to significantly changing circumstances. Leadership defines what the future should look like, aligns people with that vision, and inspires them to make it happen despite the obstacles."

Leadership is focused on producing needed change.

Management, on the other hand, might be defined as "working with people and processes to produce predictable results." This paper is too brief to allow a full exposition of the interesting interactions between these two concepts. One is not superior to the other, and we need physicians who can both lead and manage.

It is also naive to suggest that every physician who is asked by his colleagues to lead is automatically qualified to produce either needed change or predictable results. Receiving the mantle does not confer the ability to lead a team meeting, map a care process, or develop and manage a budget. These and many other high-level skills must be learned if physicians are to be effective in improving quality of care for their patients.

What a Physician Should Do When Asked To Lead

Suppose that you have just accepted the responsibility to be the leader of your six-physician office practice. You have observed some physician-leaders in the past. You believe that leadership is necessary and that good leadership can be a force for improvement. What should you do as you begin such a role?

Step back and take a look your system "from the balcony." Pretend that you can view your medical group from a balcony. As you gaze down, ask yourself: Whom do you serve? What is the main thing you do for those you serve? How does the service you provide come across to patients and other customers? Are the nurses, physicians, receptionists, and administrators all pointed in the same direction, or are they working toward different aims? For example, is the administrator trying to minimize labor cost per hour; the receptionist trying to get as many patients as possible into physicians' schedules; the nurse trying to improve documentation of preventive care; and the physician trying to give the best possible care to each patient, with priority for the sickest ones? How do these priorities interrelate? Do you see friction and conflict at the interfaces between these persons and their work processes? How does your office

practice fit into the larger system of care plans and care providers? The community health system? As a leader, your first job is to take the view from the balcony.

Get to know your customers. There is no substitute for listening to your customers. Your ultimate customers are not physicians, hospital administrators, the government, or health plans. They are those who use and pay for your services—patients, employers, and taxpayers. Make it a habit to go to them, bring them to your department meetings, and hear what they have to say to get as accurate a picture as possible of how they see your services. You must bring this reality to your team, and you cannot bring it if you do not know it.

A physician's primary responsibility is the well-being of the patient; therefore, physicians are good leaders for health systems only if they have a deep understanding of the nature of the physician-patient relationship. The best physician-leaders always behave as if they have a patient at their elbow, and they bring the patient's perspective into every conversation. To do this well, leaders must spend time in real conversation with patients and must gather useful data about system performance as seen by patients and in relation to the root needs of patients. A good leader is then able to translate patients' reality into words, pictures, graphs, and other vehicles in such a way that all members of the team share the same reality—the customers' reality.

Ultimately, your knowledge of what patients need will ensure that you work on aspects of care that they will notice. Change for the better is hard work and takes a lot of organizational energy. As a leader, you must see that your clinic uses its limited capacity for change on improvements that really matter.

Establish alignment toward a shared aim. Your next task is to begin a series of conversations with team members. The eventual purpose of these conversations is to bring everyone on the team to a shared understanding of the aim of the office practice and how each person's work fits into that aim.

The agreement on aim is important because alignment is not expressed in words as much as it is expressed in actions and policies. The physician compensation system, the billing and coding system, the receptionist training and scheduling system, and the office nurse performance evaluation process are all interdependent in some way. Do these systems support each other? Are they dissonant? When you start to critically examine compensation, scheduling, and performance evaluation, words like "aims" and "mission statements" stop being fuzzy and start getting close to where people live.

Your job as a leader will be more enjoyable if your team, its incentives, and its policies are all aligned toward a common aim. Similarly, most of a leader's painful problems can be traced to the lack of alignment of these elements. You do not have to feel responsible for articulating the aim personally, but you do need to work with other leaders and with your team members to see that an aim is articulated; that everyone understands it; and that you are steadfast in your resolve to align all persons, policies, and procedures towards that aim. The processes by which the common purpose becomes understood and

shared and the processes by which each person in your department or clinic comes to know his or her role in accomplishing that purpose and gets to feel personal fulfillment are central to the work of a leader. This job will continue for as long as you are a leader. It is never done.

Become process-literate. As the leader, you must know the general processes that your office is using-from the low-power "balcony" view, at least-so that you can credibly work to optimize the performance of the system. You must be "operationally aware." You cannot know your people, the work they do, or the customers you serve if you sit behind your desk. By being frequently present in the midst of your team's work, you gain a real sense of what is wrong and what is possible. You also gain real credibility and show your team that you care about them and their work [10].

It is not enough to simply wander around your clinic. As you wander, you should ask several key questions about the work processes, such as:

1. How is this process performing? (To make this less abstract, substitute for "this process" such words and phrases as "scheduling," "making a referral," "retrieving a medical record," "radiology reporting," or "patient billing.")
2. Does it give you joy to work in this process?
3. How well will this process perform the next time it is used? This important question involves prediction, which requires that you obtain some data about how the process performs over time [11, 12].
4. What would this process look like if it were working perfectly?

Balance playing and coaching. You may have been appointed to this leadership role because it is apparent to others that you are a good problem-solver. That does not mean that you should now solve other people's problems for them.

Remember, you are like the former all-star player who is now the player-coach. Your main job is to coach, which means that you will not get to play as often as you might like, even if you are sure that you could do a better job than the players out on the floor. You cannot provide leadership in the form of solutions [13] You must enable the people in your office practice to see the problems and find solutions, because as soon as one improvement is made, there will be a new problem to solve. If your staff cannot continually improve their work-if your organization cannot adapt and learn rapidly-you will have to do all of the work yourself [14]

Drive out fear. If you are to lead your colleagues, you must know the truth about the performance of the group. You cannot learn the truth in an environment of fear or intimidation. If nurses fear physicians and are therefore reluctant to speak up, you will be less effective at making improvements. If your colleagues fear retribution, loss of income, or loss of prestige because of lack of confidentiality in data collection, you will

get distorted data and other versions of game-playing. In fact, whenever data are loaded down with the attached baggage of reward or punishment, data distortion occurs. As a new leader, you must make it clear to your staff that you are interested in learning the truth, even if it hurts, and that you are not looking for someone to blame for problems. To do this, you must design compensation, performance feedback, and other policies that minimize the likelihood that your team members will be tempted to distort the data you need for improvement.

Physicians fear most that they will be blamed for a bad result of a patient's care. If quality is not what it should be, one of your roles as a leader is to avoid the search for bad apples; rather, focus on improving the processes and systems in which your physicians work. For example, when an orthopedic department leader learned that one of his colleagues had just had two consecutive cases of postarthroscopy infections, his first response was not to investigate his colleague. Instead, he analyzed the record of similar infections over the past year and noted that many orthopedists had had a case or two of infection. In each instance, the infections occurred in a patient whose arthroscopy had been scheduled toward the end of a busy day. Further investigation showed that the procedure for quick sterilization of the arthroscope (necessary for reusing an arthroscope that had previously been used that same day) was defective. The sterilization procedure was changed, and the infection rate dropped to 0%. The problem was not a bad apple, it was a bad process.

Occasionally, after the process has been improved, some persons continue to perform badly. At that point, the leader must take a different kind of action to improve quality. However, when quality problems surface, it is far more common to find that each individual physician is working diligently but in a defective system.

Improve yourself. The only part of the system that you really control is your own investment in improvement. You cannot be an effective leader for improvement if you do not spend time and effort on improving your own work. Read, attend seminars, view tapes, and speak with others who might mentor you. One of the best ways to learn is simply to observe good leaders. Detach yourself from the content of the situation and notice the leadership process. What is the leader doing to establish alignment, to get people to share a common picture of the future possibilities, and to effect change?

Speak from the heart. When you have something to say, be direct and honest and willing to show your emotions. People will grow to trust you if they believe that you really mean what you say. Leadership is about more than data and logic, and an office meeting is not a National Academy of Sciences conference. If people know that you are speaking from the heart, they will give you more credit than you would expect, even if they disagree with you. However, this principle flows both ways: You must also create an environment in which it is safe for everyone to speak from the heart.

Leading and Following

Increasingly, physicians work in settings that are very different from the traditional setting of the solo practitioner. Almost every physician in the United States has a hospital department chair, a hospital medical director, a chief administrator, a president of the medical group, or another leader to whom he or she must relate. Leaders exist only in relation to the people whom they lead. If there are leaders, there must also be followers, and following is not a natural act for proud, independent professionals, such as physicians. Knowing how to relate to leaders requires as much learning as knowing how and when to lead. Although this paper focuses on the role of physician leadership in improvement of care systems, it would be remiss if it did not address an important role for physicians-follower, team member, or participant. Some suggestions follow for how physicians might relate to department chairs, hospital chief executive officers, or other leaders.

Participate. Leaders really want and need your ideas, criticism, and opinions. In general, organizations are run by those who show up and stay until the vote is taken. Do not stay home while an issue is being discussed at your department meetings and then attack the program or change effort when it begins to unfold. Take the time to participate in the processes organized by your leaders.

Be candid. Tell leaders what you really think. It does no good to show up if you do not speak your mind. This is not usually a problem for physicians, except that they sometimes choose to speak their mind in the parking lot after the meeting, not during it.

Maintain a positive outlook. The best team members can analyze problems, contribute to solutions, and participate in testing improvements while maintaining a positive attitude about the potential of the team to address the problems. It is important to be appropriately skeptical about unsubstantiated opinions. At the same time, no one wants to be on a team with a chronic pessimist.

Be respectful. When you do speak up in a meeting, remember that it is possible to attack an idea without attacking the person who voiced the idea.

Be responsible. Do not expect leaders to protect you from reality and solve all of your problems for you. Leaders often get to be leaders because they have proven themselves to be good problem-solvers. You cannot expect your leaders to come up with all of the answers. It is not enough to offer your criticisms about an issue; you must help to discover the solutions.

Be a team player. If a leader is to lead, he or she must often choose between competing ideas or strategies. Just because the decision did not go your way does not mean that your ideas were not taken into account or that no one listened to you. Health care organizations are often paralyzed by the fear of offending one loud negative voice, usually that of a

physician. Speak your piece and participate in the process. If yours is clearly a minority view, work to adapt yourself to the eventual decision.

If your view did not prevail and the data show that the rest of the team was probably right, accept it and get on with your work. Undermining the team after the data are analyzed indicates that you probably do not share a common goal with the rest of your team. If you are chronically out of synch with your team, you may need to change teams.

Special Challenges Encountered by Physician-Leaders

The leadership issues described above are not necessarily unique to health care. But some professional organizations, such as academic departments of medicine, multispecialty groups, and independent practice associations, have special features that deserve mention, especially with regard to quality improvement.

Cherishing of Custom-Crafted Variation

Physicians are skilled craftspersons who are proud of their ability to custom design the care of each patient. In a peculiar way, they can be resistant to making their work easier or more error-proof if doing so threatens this craftsman role.

Black Hat Thinking

Physicians are also good critical thinkers and use these skills in their daily practice. When an idea for change surfaces, they are adept at what De Bono calls "black hat thinking," a thinking style that emphasizes judgment and caution. This style is useful, but it will stifle innovation and change if it dominates every meeting [15].

Tension between Administrators and Physicians

Rather than seeing physician-leaders as partners, some hospital and clinic administrators harbor fear and resentment toward these "amateur administrators." Similarly, physicians often characterize professional administrators as the main obstacle to be overcome. This tension can sabotage real improvement because almost all improvements require cooperation between administrators and clinicians. Physicians and administrators alike must respect and trust each other if true improvement is to flourish.

The Compartment versus the Whole

Often, as noted above, the hardest challenge for a physician-leader is to know whether to look out for those who asked him or her to lead or for the broader interest of the whole system. If the physician-leader represents a department, he or she might end up shielding department members from needed changes. If, on the other hand, the physician-leader takes the system view, he or she may be perceived by the department as having sold out

to administration. The best guide through this problem is for the physician-leader to remember that, as a physician, he or she must ultimately answer to patients and must do what is in their best interest, regardless of which persons inside the system take offense.

Leadership and Power

Leaders must occasionally use power. Doing so causes great discomfort for all physician-leaders, especially in circumstances where the leader must discipline or even dismiss a fellow physician. Physicians hesitate to violate the professional autonomy of colleagues. In such situations, it is important to remember that nothing destroys morale and quality faster than persistent tolerance of incompetence, flaunting of stated values, or active undermining of the work of the team. Even though it is painful to do it, leaders must use power in such circumstances or quality will suffer.

Conclusions

Among the many roles physicians play is the role of leader. When physicians assume leadership, they must not only learn the specific methods and tools that will allow them to measure, understand and improve care but must also acquire the skills and abilities that will allow them to lead departments, office practices, and complex health care institutions. This body of knowledge permits physicians to work as leaders on a system of care, not just in it.

When physicians work on a system, they accept that their main purpose as leaders is not to fix quality problems and make quality improvements. Rather, their main purpose is to establish an environment in which quality improvements can thrive. Therefore, the main work of the physician-leader is to remove environmental hazards to quality, such as data policies that promote fear; compensation methods that inhibit collaboration; unaligned political factions that waste energy; and absence of time for organized reflection, which inhibits learning. Physician leadership roles are powerful potential leverage points for improvement of the health care system. As citizens in the health care system, physicians have an obligation to learn as much as possible about effective leadership so that when an opportunity to lead comes, they will make optimal use of it.

Key Points To Remember

Leaders must embody the values of those whom they lead

Leaders make needed changes, and managers make processes more reliable and predictable; both roles are important

Leadership is an action, not a position

Leaders define the reality of the customer for those whom they lead, and they often use data to do so

Leaders work on the system and at the boundaries of the system; those whom they lead work in the system

The central work of leaders is to define the aim of the system and to align all persons and processes toward that aim

Leaders do not necessarily have to make the improvements and changes themselves, but they do need to establish an environment in which improvement can thrive

Most leadership skills are not innate traits; rather, they can be learned. When physicians learn and practice them, they can substantially improve health care

References

1. Clemmer J. Pathways to Performance: A Guide to Transforming Yourself, Your Team, and Your Organization. Rocklin, CA: Prima; 1995:19-32.
2. Connors R, Smith T, Hickman C. The Oz Principle: Getting Results through Individual and Organizational Accountability. Englewood Cliffs, NJ: Prentice Hall; 1994:25-56.
3. DePree M. Leadership Is an Art. East Lansing, MI: Michigan State Univ Pr; 1987:9-19.
4. Autry JA. Love and Profit: The Art of Caring Leadership. New York: Avon; 1992:19.
5. Deming WE. The New Economics for Industry, Government, Education. Cambridge, MA: MIT Pr; 1994:50-93.
6. Berwick DM, Nolan TW. Physicians as leaders in improving health care: a new series in Annals of Internal Medicine. Ann Intern Med. 1998; 128:289-92.
7. Scholtes PR. The Team Handbook: How To Use Teams To Improve Quality. Madison, WI: Joiner Associates; 1988:6-36-6-45.
8. Reinertsen JL. Collaborating outside the box. When employers and providers take on environmental barriers to guideline implementation. Jt Comm J Qual Improv. 1995; 21:612-8.
9. Kotter JP. Leading Change. Boston: Harvard Business School Pr; 1996:25-30.
10. Deming WE. Out of the Crisis. Cambridge, MA: MIT Pr; 1982:54-9.

11. Wheeler DJ. Understanding Variation: The Key to Managing Chaos. Knoxville, TN: SPC Pr; 1993:15-32.
12. Nelson EC, Splaine ME, Batalden PB, Plume SK. Building measurement and data collection into medical practice. *Ann Intern Med.* 1998; 128:460-6.
13. Heifetz RA, Laurie DL. The work of leadership. *Harvard Business Review.* 1997; Jan-Feb:124-34.
14. Senge P. *The Fifth Discipline: The Art and Practice of the Learning Organization.* New York: Doubleday; 1990:339-60.
15. De Bono E. *Six Thinking Hats.* New York: Little, Brown; 1986:80-105.

This article has been cited by other articles:

P. Fox, P. G. Porter, S. H. Lob, J. H. Boer, D. A. Rocha, and J. W. Adelson
Improving Asthma-Related Health Outcomes Among Low-Income, Multiethnic, School-aged Children: Results of a Demonstration Project That Combined Continuous Quality Improvement and Community Health Worker Strategies
Pediatrics, October 1, 2007; 120(4): e902 - e911.
[\[Abstract\]](#) [\[Full Text\]](#) [\[PDF\]](#)

N A O'Dea, P de Chazal, D C Saltman, and M R Kidd
Running effective meetings: a primer for doctors.
Postgrad. Med. J., July 1, 2006; 82(969): 454 - 461.
[\[Abstract\]](#) [\[Full Text\]](#) [\[PDF\]](#)

P Francois, D Vinck, J Labarere, T Reverdy, and J-C Peyrin
Assessment of an intervention to train teaching hospital care providers in quality
management
Qual. Saf. Health Care, August 1, 2005; 14(4): 234 - 239.
[\[Abstract\]](#) [\[Full Text\]](#) [\[PDF\]](#)

A. Garland
Improving the ICU: Part 2
Chest, June 1, 2005; 127(6): 2165 - 2179.
[\[Abstract\]](#) [\[Full Text\]](#) [\[PDF\]](#)

L. K. Leslie, M. B. Miotto, G. C. Liu, S. Ziemnik, A. G. Cabrera, S. Calma, C. Huang,
and K. Slaw
Training Young Pediatricians as Leaders for the 21st Century
Pediatrics, March 1, 2005; 115(3): 765 - 773.
[\[Abstract\]](#) [\[Full Text\]](#) [\[PDF\]](#)

T. R. Russell
What Is the Future of Surgery?
Arch Surg, August 1, 2003; 138(8): 825 - 831.
[\[Full Text\]](#) [\[PDF\]](#)

S. B. Ransom, D. M. Studdert, M. P. Dombrowski, M. M. Mello, and T. A. Brennan
Reduced Medicolegal Risk by Compliance With Obstetric Clinical Pathways: A Case-
Control Study
Obstet. Gynecol., April 1, 2003; 101(4): 751 - 755.
[\[Abstract\]](#) [\[Full Text\]](#) [\[PDF\]](#)

M. Weinberg, J. M. Fuentes, A. I. Ruiz, F. W. Lozano, E. Angel, H. Gaitan, B. Goethe, S.
Parra, S. Hellerstein, D. Ross-Degnan, et al.
Reducing Infections Among Women Undergoing Cesarean Section in Colombia by
Means of Continuous Quality Improvement Methods
Arch Intern Med, October 22, 2001; 161(19): 2357 - 2365.
[\[Abstract\]](#) [\[Full Text\]](#) [\[PDF\]](#)

T. Bodenheimer and L. Casalino
Executives with White Coats -- The Work and World View of Managed-Care Medical
Directors- First of Two Parts
N. Engl. J. Med., December 16, 1999; 341(25): 1945 - 1948.
[\[Full Text\]](#) [\[PDF\]](#)

J. S. Sinn, A. L. Morrow, and A. B. Finch
Improving Immunization Rates in Private Pediatric Practices Through Physician
Leadership
Arch Pediatr Adolesc Med, June 1, 1999; 153(6): 597 - 603.
[\[Abstract\]](#) [\[Full Text\]](#) [\[PDF\]](#)

Article

[Return to Search Result](#)

[Table of Contents](#)

[Abstract of this article](#)

[Articles citing this article](#)

Services

[Send comment/rapid response letter](#)

[Notify a friend about this article](#)

[Alert me when this article is cited](#)

[Add to Personal Archive](#)

[Download to Citation Manager](#)

[ACP Search](#)

[Get Permissions](#)

PubMed

[Articles in PubMed by Author: Reinertsen, J. L.](#)

[Related Articles in PubMed](#)

[PubMed Citation](#)

[PubMed](#)

[Home](#) | [Current Issue](#) | [Past Issues](#) | [Audio/Video](#) | [CME](#) | [Collections](#) | [In the Clinic](#) |
[Mobile](#) | [Subscribe](#) | [Tools](#) | [Help](#) | [ACP Online](#)