REFLECTIONS

Health Care Becomes an Industry

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ABSTRACT

The delivery of health care is in the process of "industrialization" in that it is undergoing changes in the organization of work which mirror those that began in other industries a century ago. This process is characterized by an increasing division of labor, standardization of roles and tasks, the rise of a managerial superstructure, and the degradation (or de-skilling) of work. The consolidation of the health care industry, the fragmentation of physician roles, and the increasing numbers of nonphysician clinicians will likely accelerate this process. Although these changes hold the promise of more efficient and effective health care, physicians should be concerned about the resultant loss of autonomy, disruption of continuity of care, and the potential erosion of professional values.

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INTRODUCTION

In the past man has been first. In the future the System will be first.
Frederick Winslow Taylor[1]

The 20th century was a period of monumental political shifts and technologic advances. One of the most important changes was in the way work was organized; it was this transformation that paved the way for the development and diffusion of new technologies that shape our everyday life. The health care industry, however, has been relatively spared from these changes and has only gradually begun to undergo the reorganization that other industries experienced in the past century. It may be instructive to look back so we can see where we are headed.

At the turn of the previous century, skilled workers typically performed many (if not all) of the steps in the process of making a product and often were able to determine the manner and pace of their work, relying on experience and handed-down knowledge. As a workshop supervisor, Frederick Winslow Taylor set out to change the way work was done and is often credited with spearheading a revolution in the organization of work.[1] His innovation, which was fairly straightforward, can be summarized in two steps: the first was breaking down a complicated job into relatively simple tasks; the second was analyzing each task and finding the one best way of performing that component.

Whereas the hard edge of Taylor's authoritarian approach has been softened by some in modern management, he has left an enduring legacy of looking at work as something that could be broken down, analyzed, and standardized to improve efficiency, quality, and productivity. These principles were applied with great success by such innovators as Henry Ford in the automotive industry and Ray Kroc in the restaurant industry. The Taylorization of industry had a number of consequences. The first consequence was the increase in productivity that has allowed us to have the standard of living that many now enjoy. The second consequence was the rise of a managerial class to organize and supervise a highly regulated

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workplace. The third consequence was the degradation or de-skilling of work; ironically, as technology and products became more complex, the work involved in their production became simpler and more mundane. Some have argued that these changes have caused work to become for many a numbing, monotonous experience in which workers feel little connection with the product of their labor.[2] Is health care headed in the same direction?

Dividing Work Into Component Tasks

The typical physician at the beginning of the 20th century was a general practitioner who treated a broad spectrum of medical problems. As the century progressed, the work of physicians steadily splintered into narrower disciplines. The first specialists focused on particular organ systems or illnesses. Within these disciplines, however, there was still the opportunity for continuity of care. In contrast, the most recent specialties—emergency medicine, intensivists, and hospitalists—focus on a particular stage of care and have fulfilled Taylor's prediction of the primacy of the system over the individual. These physicians typically work in shifts, and their relationship with the patients they care for begins and ends with their shift.

The fragmentation of care is seen not only among physicians, but also in the utilization of nurses and other nonphysician clinicians to perform tasks that were traditionally the responsibility of physicians. One example is the development of protocol-driven telephone triage systems that provide standardized, albeit impersonal, advice to patients. Another is the use of nonphysician clinicians for urgent or same-day appointments in primary care practices.

This division of labor offers some advantages for primary care physicians: it distributes the responsibility for patient care and allows physicians to have more predictable and flexible work hours. Furthermore, research suggests that specialist care for some conditions is associated with better outcomes.[3] In other situations, however, the care provided by specialists may be more expensive, yet no better than that provided by generalists[4]; moreover, one recent study of regional variations in care found that increased use of specialists was associated with higher costs, but not better quality of care.[5]

The increased fragmentation of care, particularly the development of process-oriented specialists such as hospitalists, has its critics. Although the stated impetus behind the development of the hospitalist specialty is increased efficiency and quality of care,[6] the benefit (if any) appears to be primarily in the domain of efficiency.[7] Some observers have decried the resultant loss of continuity and argue that such changes are primarily economically driven and may hurt the quality of a patient's care.[8] Most physicians would agree that continuity of care has some value,[9] and there is good evidence to support this contention,[10-12] but it is difficult to gauge its worth relative to the benefits of specialization. While it is fairly straightforward to look at outcomes of a discrete condition or stage of care (situations where specialists tend to perform better), it is much harder to do so for patients with a variety of acute and chronic illnesses cared for in different settings for an extended period (the domain of the generalist).

Evaluating and Standardizing Tasks

The traditional physician of Taylor's time based his decisions on handed-down wisdom and personal experience. Each physician was autonomous and largely free to practice in almost any manner that he wished; as a result, the practice patterns of physicians varied greatly,[13] and many physicians did not (and do not) use proven therapeutic strategies. In response to this variation in practice, the process of evaluating and standardizing the work of physicians has received a great deal of attention. Guidelines have been developed to establish and disseminate a standard of care.[14] Integrated care pathways (or care maps) have been advocated to facilitate the implementation of guidelines and decrease practice variation.[15] Computer-aided information systems facilitate the monitoring and analysis of physicians' practices as physicians are increasingly finding their decisions scrutinized, questioned, and limited by outside forces.[16]

Part of the standardization of physicians' work is an increased attention to physicians' time and productivity. Administrative burdens and the devaluing of physicians' time have intensified pressures on physicians and diminished their sense of control over their time.[17] As a result, physicians feel increasingly pressed for time; lack of personal time and time with patients are two major sources of discontent among physicians.[18] Granted, the perceived lack of personal time might be partly due to changes in physician expectations, but the loss of control over their time is real.

The Rise of the Managerial Class

The physician of a century ago was typically self-employed and dealt with his patients directly, without any intervening bureaucratic structure. The adoption of third party insurance introduced an intermediary in this relationship, albeit one that was relatively uninvolved in the patient-physician interaction (until recently). With the splintering and specialization of health care, as well as the perceived need for more standardized care and control of costs, has come the need for more health care managers to oversee an increasingly com-

plex and fragmented process; as a result, our system has an ever-expanding administrative superstructure.[19]

The managerial class takes several forms. There are traditional managers who monitor productivity and quality of care. There are also those who develop guidelines and standards of care for others to follow and design systems to facilitate the adoption of these standards, analogous to engineers in other industries. Physicians today are increasingly subject to outside forces and have to deal with a variety of managerial structures, including their employers, the insurance companies, and the government.

Managerial oversight and standardization might increase the quality and efficiency of care, but it also results in loss of autonomy. Physicians are increasingly salaried employees, working in settings where they have little control over the pace and conditions of their work. Likewise, the composition of their patient panels is subject to the whims of insurance companies, health care providers, and patients' employers, as well as the vicissitudes of their contractual relationships.[20] Research in the past decade indicates that physicians, particularly primary care physicians, perceive a loss of autonomy in their profession,[21] which is a major source of dissatisfaction among all physicians.[22,23]

The Degradation of Work

The consequence of Taylorization of most concern was that skilled laborers found their jobs transformed into unskilled work controlled by others and that their work could now be performed by more easily replaceable labor. Taylor famously declared that the ideal worker was someone who just followed instructions and did not think for himself. The design of workplaces and technology to use workers with minimal training was one of Taylor's goals and remains so for many businesses today.

Medicine has traditionally been the domain of independent physicians who acquired their position and prestige through a long and arduous apprenticeship, much like the skilled craftsman of the turn of the century. Whereas physicians were once able to determine the pace and manner of their work, health care is increasingly adopting the industrial model in an effort to improve efficiency and productivity. The transformation of physicians from professionals into technicians endangers the values that medicine had traditionally espoused (although not always lived up to): community service, moral responsibility, and placing the patient's interests first.[24] In the past decade, many have expressed concern about the degradation of professionalism and have generally implicated economic pressures.[25] The fragmentation of care and the increasing focus on efficiency, however, are also threats to professionalism: physicians who are focused on providing standardized services at a particular stage of care may be more effective and efficient at that stage but will likely feel less connected with their patients and be less concerned about long-term outcomes.

Even though the spreading fragmentation of medicine is at least partly a result of its increasing complexity, one unintended consequence of this fragmentation might be that the skill and training required to provide medical care in the 21st century will diminish. We may be entering an era in which the broadly trained physician with diverse skills will fade away, much like the traditional craftsman. The generalist who manages almost all of his patients' problems might already be gone forever; one observer has argued that primary care medicine could become "a euphemism for efficient secretarial work, prompt referral to other services, and conscientious monitoring of others' therapeutic plans."[26]

The model of the future could be a multitiered system of care with physician-managers supervising other care providers. This transformation is most apparent in the increasing use of nonphysician practitioners to provide services that were traditionally the exclusive realm of physicians.[27] Some physicians will serve as superspecialist consultants, and some generalists might serve a niche-market of caring for the wealthy[28] or coordinating care for complicated and chronically ill patients. For most physicians, however, the trend appears to be downward toward a less-skilled and less-valued role in the system.

The Industrialization of Health Care

Health care appears to be headed in the same direction as other industries in that the fragmentation and standardization of physicians' work, as well as the construction of a managerial superstructure, are already well underway. These changes bring the promise of better quality and more efficient health care. Physicians, however, will continue to be pressured to sacrifice their autonomy and will increasingly feel like cogs in a machine. The nature of health care is such that the devolution of physicians' work to that of an unskilled laborer is inconceivable, but physicians will likely find their work less valued over time and will be increasingly replaced by nonphysician clinicians.

Of course, the goal of health care should be to provide patients with the best and most cost-effective care possible, not to provide physicians with fulfilling professional lives. The industrialization of health care, however, has worrisome implications for the care of individual patients and their experience with the system. Although Taylor's principles are ideal for the production of standardized automobiles, meals, or other products, the complex and unpredictable nature

of health and illness does not lend itself well to Taylorism, and we all know that the care of patients can rarely be squeezed into a precast mold. Furthermore, there is the danger that essential ingredients of good health care, such as patient-physician communication and personal connection,[29] might be lost in the quest for efficiency.

Granted, for those who require certain procedures or have a single illness for which the standards of care are clear, it is likely that these changes will result in improved quality and efficiency.[30] Yet for other patients, especially those with complicated multisystem chronic illnesses that require care in a variety of settings, the primacy of the system over the individual might make them feel like a product on an assembly line. Moreover, being cared for by busy physicians with less time to devote to each patient could diminish the quality of care,[31] and the general dissatisfaction and alienation of physicians may erode quality of care further.[32] A select few patients, of course, will be able to buy out of this system and pay for the personalized craftsmanship of the traditional physician.[28]

The specter of assembly-line medicine hangs like a dark cloud over our health care industry. We should all be concerned about the prospect of a depersonalized and fragmented health care system that frustrates physicians and patients alike. Although many of these changes are inevitable and some are for the better, we need to look for measures to slow or reverse the harmful aspects of this process. Primary care needs to be valued more, and the reimbursement incentives that favor technical procedures rather than cognitive services[33] need to be eliminated. Generalists must demonstrate and publicize the value of their work through research and advocacy. Generalists also need to look into other systems of care, ones that support the primary care provider and preserve continuity of care while including the beneficial aspects of specialty services when needed.[34]

I believe that the ultimate solution lays in rethinking the role of medicine in society and a departure from the fragmented and multitiered nature of our health care system. As one observer has suggested, medicine might need to "renegotiate its contract with society" and move away from "the technical model of the physician as expert in favor of the professional acting on behalf of the community."[35] The challenge for all of us is to ensure that our health care system is effective and caring, not just efficient.

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References

1. Kanigel R. *The One Best Way: Frederick Winslow Taylor and the Enigma of Efficiency*. New York, NY: Viking; 1997.
2. Garson B. *All the Livelong Day: The Meaning and Demeaning of Routine Work*. New York, NY: Penguin Books; 1994.
3. Harrold LR, Field TS, Gurwitz JH. Knowledge, patterns of care, and outcomes of care for generalists and specialists. *JGIM*. 1999;14:499-511.
4. Carey TS, Garrett J, Jackman A, et al. The outcomes and costs of care for acute low back pain among patients seen by primary care practitioners, chiroprators, and orthopedic surgeons. *N Engl J Med.* 1995;333:913-917.
5. Fisher ES, Wennberg DE, Stukel TA, Gottlieb DJ, Lucas FL, Pinder EL. The implications of regional variations in Medicare spending. Part 1: the content, quality and accessibility of care. *Ann Intern Med.* 2003;138:273-287.
6. Wachter RM, Goldman L. The emerging role of "Hospitalists" in the American health care system. *N Engl J Med.* 1996;335:514-517.
7. Wachter RM, Goldman L. The hospitalist movement 5 years later. *JAMA*. 2002;287:487-494.
8. Manian FA. Whither continuity of care? *N Engl J Med.* 1999;340: 1362-1363.
9. Guthrie B, Wyke S. Does continuity in general practice really matter? *BMJ*. 2000;321:734-735.
10. Marquis MS, Davies AR, Ware JE Jr. Patient satisfaction and change in medical care provider: a longitudinal study. *Med Care.* 1983;21: 821-829.
11. Wasson JH, Sauvigne AE, Mogielnicki P, et al. Continuity of outpatient medical care in elderly men: a randomized trial. *JAMA.* 1984;252:2413-2417.
12. Peterson LA, Bren TA, O'Neill AC, Cook EF, Lee TH. Does housestaff discontinuity of care increase the risk for preventable adverse events? *Ann Intern Med.* 1994;121:866-872.
13. James BC, Hammond ME. The challenge of variation in medical practice. *Arch Pathol Lab Med.* 2000;124:1001-1003.
14. Woolf SH. Practice guidelines: a new reality in medicine. *JAMA*. 1990;150:1811-1818.
15. Campbell H, Hotchkiss R, Bradshaw N, Porteous M. Integrated care pathways. *BMJ*. 1998;316:133-137.
16. Feinglass J, Salmon JW. Corporatization on medicine: the use of medical management information systems to increase the clinical productivity of physicians. *Int J Health Serv.* 1990;20:233-252.
17. Morrison I. The future of physicians' time. *Ann Intern Med.* 2000;132:80-84.
18. Murray A, Montgomery JE, Chang H, Rogers WH, Inui T, Safran G. Doctor discontent: a comparison of physician satisfaction in different delivery system settings, 1986 and 1997. *J Gen Intern Med.* 2001;16: 451-459.
19. Woolhandler S, Himmelstein DU. The deteriorating administrative efficiency of the U.S. health care system. *N Engl J Med.* 1991;324: 1253-1258.
20. Cunningham PJ, Kohn L. Health plan switching: choice or circumstance? *Health Aff*. 2000;19:158-164.

21. Burdi MD, Baker LC. Physicians' perceptions of autonomy and satisfaction in California. *Health Aff.* 1999;18:134-145.

22. Freeborn DK. Satisfaction, commitment, and psychological well-being among HMO physicians. *West J Med.* 2001;174:13-18.

23. Lewis CE, Prout DM, Chalmers EP, Leake B. How satisfying is the practice of internal medicine? A national survey. *Ann Intern Med.* 1991;114:1-5.

24. Sullivan WM. Medicine under threat: professionalism and professional identity. *CMAJ.* 2000;162:673-675.

25. Wynia MK, Latham SR, Kao AC, Berg JW, Emanuel LL. Medical professionalism in society. *N Engl J Med.* 1999;314:1612-1616.

26. Zuger A. Nurse practitioners in primary care [letter]. *N Engl J Med.* 1994;330:1539.

27. Druss BG, Marcus SC, Olfson M, Tanielian T, Picus HA. Trends in care by nonphysican clinicians in the United States. *N Engl J Med.* 2003;348:130-137.

28. Brennan TA. Luxury primary care - market innovation or threat to access? *N Engl J Med.* 2002;346:1165-1168.

29. Branch WT. Is the therapeutic nature of the patient-physician relationship being undermined? *Arch Intern Med.* 2000;160:2257-2260.

30. Halm EA, Lee C, Chassin MR. Is volume related to outcome in health care? A systematic review and methodologic critique of the literature. *Ann Intern Med.* 2002;137:511-520.

31. Campbell SM, Hann M, Hacker J, et al. Identifying predictors of high quality care in English general practice: observational study. *BMJ.* 2001;323:784-787.

32. Linn LS, Brook RH, Clark VA, Davies AR, Fink A, Kosecoff J. Physician and patient satisfaction as factors related to the organization of internal medicine group practices. *Med Care.* 1985;23:1171-1178.

33. Ginsburg PB. Payment and the future of primary care. *Ann Intern Med.* 2003;138:233-234.

34. Willison DJ, Soumerai SB, McLuaghlin TJ, et al. Consultation between cardiologists and generalists in the management of acute myocardial infarction. *Arch Intern Med.* 1998;158:1778-1783.

35. Sullivan WM. What is left of professionalism after managed care? *Hastings Cent Rep.* 1999;29(2):7-13.