

Implementing Change in Respiratory Care

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Though people are generally averse to change, change and innovation are critically important in respiratory care to maintain scientific and clinical progress. This paper reviews the issue of change in respiratory care. I summarize several available models of organizational and personal change (ie, those of Kotter and of Silversin and Kornacki, and the Intentional Change Theory of Boyatzis), review the characteristics of change-avid respiratory therapy departments, offer an example of a change effort in respiratory care (implementation of respiratory care protocols) and then analyze this change effort as it took place at one institution, the Cleveland Clinic, using these models. Finally, I present the results of an analysis of change-avid respiratory therapy departments and offer some suggestions regarding change management for the profession and for individual respiratory care clinicians. Common features of theories of organizational change include developing a sense of urgency, overcoming resistance, developing a guiding coalition, and involving key stakeholders early. With the understanding that change efforts may seem unduly “clean” and orderly in retrospect, the models help explain the sustainable success of efforts to implement the Respiratory Therapy Consult Service at the Cleveland Clinic. By implication, these models offer value in planning change efforts prospectively. Further analysis of features of change-avid respiratory therapy departments indicates 11 highly desired features, of which four that especially characterize change-avid departments include: having an up-to-date leadership team; employee involvement in change; celebrating wins; and an overall sense of progressiveness in the department. This analysis suggests that understanding and embracing change is important. To anchor change in our profession, greater attention should be given to developing a pipeline of respiratory care clinicians who, by virtue of their advanced training, have the skills to innovate in respiratory care in various ways. *Key words: change; respiratory care; respiratory care protocols.* [Respir Care 2010;55(6):749–757.

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Introduction

Let’s face it. People generally hate change. Indeed, our being labeled as “creatures of habit” reflects this wide-

spread, deep-seated aversion to change, which has been the subject of great reflection by luminaries. A celebrated

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consultant, W Edwards Deming, stated, "It is not necessary to change, survival is not mandatory." Will Rogers, a notable humorist, said, "Even if you are on the right track, you will get run over if you just sit there." Finally, recognizing the human disinclination to change, Mark Twain stated, "It's not the progress I mind: it's the change I don't like." To make this aversion to change both real and immediate, consider the following 2 simple exercises: (1) Brush your teeth with your non-dominant hand for a full day, and (2) Put your shoes on in the order opposite from usual for you. Said again, most people resist change, probably because discomfort accompanies even the smallest change (like brushing your teeth with your other hand).

The paradox is that despite our aversion to change, our lives depend on progress and innovation, which is at the core of change. Indeed, innovation and change are our lifeblood, and resistance to change threatens stagnation and the adverse effects of failing to progress. In the specific context of respiratory care, imagine managing your next patient who has respiratory failure with an iron lung or treating your next patient with ARDS using tidal volumes exceeding 12 mL/kg. Both scenarios could occur were it not for the change begotten by scientific advancement.

In the context that change and scientific advancement are critical for advancing health and improving respiratory care, it is striking that the issue of change and models that describe change implementation have received little attention in respiratory care. For example, a MEDLINE search of 1,083 articles published in *RESPIRATORY CARE* from 1996 to November 2009, using the search term "change," revealed only 66 citations, most of which regard new techniques and technologies, and only 4 of which¹⁻⁴ address the issue of organizational change (including one² announcing the change of editorship, with Dr Hess assuming this role). To address this gap, the current paper first reviews several available models of organizational⁵⁻⁷ and personal⁸ change, and then evaluates how the successful implementation of respiratory care protocols at one institution exemplifies these principles of change management. Next, I summarize a line of research that has examined the features of respiratory therapy departments that embrace change (ie, are "change-avid"). Finally, I offer a perspective on the importance of change-avidity for the profession of respiratory care and on what individual respiratory therapists (RTs) can do to advance the field.

Models of Change

Given the importance of change, models for effecting change have been the subject of considerable study and scholarship.⁵⁻⁸ For example, Kotter developed an 8-stage model of change that is grounded in his observation that people and organizations generally resist change (ie, are

change-averse) and that 8 errors usually account for why change efforts fail and for the "waste and anguish" that accompany such failed change efforts.⁵ These 8 errors, which provide the basis of the change model, are: (1) allowing too much complacency, (2) failing to create a sufficiently powerful guiding coalition, (3) underestimating the power of vision, (4) under-communicating the vision, (5) permitting obstacles to block the new vision, (6) failing to create short-term wins, (7) declaring victory too soon, and (8) neglecting to anchor changes firmly in the corporate culture. In developing the model for effecting change, Kotter⁵ suggests that each of these 8 common errors invites a specific solution, which together comprise the 8-stage change model. For example, because, "people will find a thousand ingenious ways to withhold cooperation from a process that they sincerely think is unnecessary or wrongheaded," complacency requires an antidote, which is to create a sense of urgency. Developing urgency can be done in various ways, including highlighting the ill effects of failing to change, providing rigorous feedback to individuals in the organization on their performance and raising performance standards so as to lessen self-satisfaction, and reducing the visible symbols of organizational success. As other examples of failures, lack of a clear vision and/or failure to communicate this vision must be counteracted by both developing a clear, simple, and communicable vision and then by actually communicating the vision to the organization. Communication must be simple (ie, free of jargon and "technobabble"⁵), repetitive, must go in both directions (ie, from leadership to organizational members and from members to leaders), and must take advantage of multiple forums for communication. Importantly, the change that is being advocated must be modeled by institutional leaders. Taken together, these 8 steps provide a roadmap for achieving organizational change.

The resultant model has been advocated as a way of both understanding change and, as will be discussed in the context of implementing respiratory care protocols, for designing change processes (Table 1).

In a second model of change (Fig. 1), Silversin and Kornacki⁶ have proposed a model (called Amicus) that specifically addresses the nuances of change processes in healthcare organizations. This model is based on leadership, shared vision, and culture and compact, and uses levers of aligning the team, involving physicians early, developing tension, addressing resistance, and building consistency. Notably, several elements of this second model closely resemble features of the model by Kotter,⁵ especially those of aligning a team (ie, creating a guiding coalition), developing tension and an urgency for change (establishing a sense of urgency or a "burning platform"), and developing a shared vision. Silver-

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Table 1. Examples of Change Steps in Implementing Respiratory Care Protocols at the Cleveland Clinic, Following the Change Criteria from Kotter's 8 Stages of Change Model⁵

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| <p>I.a. A sense of urgency was created by the need to revamp how respiratory care was ordered. The volume of orders was steadily increasing, outstripping available full-time employees of respiratory therapists (RTs) to administer the care. Also, the financial climate discouraged growth of RTs in proportion to demand. The demonstration of misallocation in our practice cemented the need for a new paradigm to deliver respiratory care. Furthermore, a climate in other institutions in which the number of RTs was reduced in proportion to the extent of over-ordering created urgency to enhance the allocation of RT services in our institution.</p> |
| <p>I.b. The aforementioned (I.a. above) issues were extensively discussed among RTs and the Medical Director.</p> |
| <p>II.a. A group was quickly formed to plan the structure and function of the Respiratory Therapy Consult Service (RTCS). The group consisted of RTs and the Medical Director. Later, once data were available, the concept of the RTCS was proposed to the Cleveland Clinic's Board of Governors, the group that oversees all policy decisions regarding clinical practice. Acceptance by that body allowed widespread implementation of the RTCS as a matter of institutional policy.</p> |
| <p>II.b. The group that formed to lead the change effort had a longstanding history of working well together and was focused on implementing the RTCS.</p> |
| <p>III.a. The vision for the RTCS emerged through discussions and a review of the literature, making note of the work of Nielsen-Tietsort et al²⁰ regarding early development of RT-driven protocols in a smaller hospital in Colorado. Naming the service as a "consult" service also enhanced its recognition by clinicians, for whom seeking consultation from expert colleagues was a usual practice.</p> |
| <p>III.b. A plan was developed to perform pilot studies in which selected physician groups were engaged early to help develop and adjust the RTCS. Thereafter, a randomized clinical trial comparing head-to-head respiratory care plans determined by physicians versus respiratory care plans created by the RTCS was planned and performed.</p> |
| <p>IV.a. Plans for developing the RTCS and the rationale for doing so were widely announced within the Section of Respiratory Therapy and within the institution. For example, a medical grand rounds on respiratory therapy protocols was presented, which included presenting clinical cases and soliciting responses from attendees on the appropriate respiratory care plan, using an audience response system. Also, in reaching out to physicians to help plan pilot studies on wards to which they admitted patients, we were disseminating information about the vision and plan.</p> |
| <p>IV.b. Those RTs working on the vision and implementation of the RTCS were volunteers who were especially committed to its successful implementation.</p> |
| <p>V.a. Physicians were engaged early in helping plan the RTCS and in organizing pilot studies. The Medical Director (JKS) met individually with selected physicians who seemed resistive and invited them to craft protocols that would work in the care of their patients, building in the opportunity for the RTCS to adjust care after the first 24 h of physician-directed care.</p> |
| <p>V.b. In a data-driven environment like an academic medical center, data from pilot studies and ultimately from a pivotal, randomized controlled trial were generated and published in order to then present to institutional decision-makers with a proposal to implement the RTCS hospital-wide.</p> |
| <p>V.c. The concept of empowering RTs to implement protocol-guided respiratory care plans and to base clinical decisions on their clinical assessments represented a departure from past task-driven and order-driven respiratory care. Indeed, a new paradigm in which RTs were accountable for and could be called upon to defend their clinical decisions was begun. At the time, this represented substantial movement toward an unconventional model of delivering respiratory care.</p> |
| <p>VI.a-c. The execution of a series of pilot studies to evaluate and adjust the RTCS represented an opportunity to recognize and reward those involved in the conduct of these studies. Also, every scholarly presentation and publication was widely celebrated by the department and by its leaders.</p> |
| <p>VII.a. The results of the randomized controlled trial were presented to the hospital's leadership group (ie, the Board of Governors). This led to adoption of the RTCS as part of hospital policy for widespread use, thereby developing a high-level endorsement of the RTCS.</p> |
| <p>VII.b. With the implementation of the RTCS, RTs seeking employment at the Cleveland Clinic were those seeking to work in an environment characterized by a high degree of autonomy and accountability. In this way, implementation of the RTCS anchored the culture and encouraged future recruitment of those who favored and valued innovation and change.</p> |
| <p>VII.c. As the RTCS became established, experienced RTs trained more junior colleagues in using the protocols, thereby creating a pipeline of RTs for whom the RTCS was familiar and valued.</p> |
| <p>VIII.a. An active quality-maintenance program for the RTCS was instituted (eg, conducting random audits of respiratory care plans, and providing feedback to the ordering RT when discordance with the algorithm-suggested care plan was observed).</p> |
| <p>VIII.b. Conducting research on the effectiveness of the RTCS in improving the allocation of respiratory care services and publishing these findings in peer-reviewed journals provided an opportunity to reflect on progress realized by implementing the RTCS.</p> |
| <p>VIII.c. As the RTCS became established, candidacy for leadership in the Section of Respiratory Therapy required familiarity with the protocols and endorsement of a culture in which RTs wished to implement care plans. In this way, leadership-succession planning was built into the success of the RTCS.</p> |

sin and Kornacki⁶ emphasize the importance of involving and engaging physicians in a change process at an early stage, as physicians often hold the power either to effect or to suppress change efforts. Engaging physi-

cians early relates to the step in Kotter's model⁵ of overcoming sources of resistance to change and has been especially important in implementing respiratory care protocols (see Table 1).

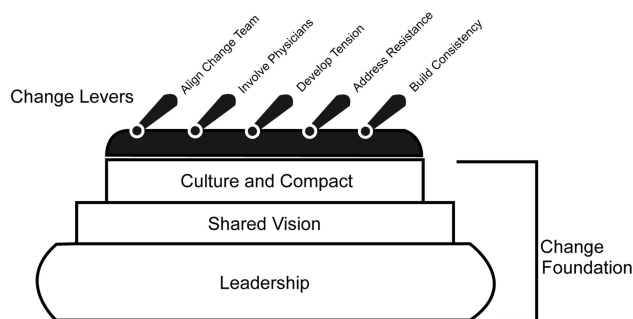


Fig. 1. The Amicus model for change, by Silversin and Kornacki. This model of change is based on the foundations of leadership, shared vision, and culture and compact. The levers define specific steps that will encourage change to take hold. (From Reference 6, with permission.)

Finally, in discussing how new knowledge and innovation in healthcare is disseminated, Berwick⁷ has discussed a model of the epidemiology of change adoption that is based on observations of Iowa farmers' practice of adopting hybrid seed corn⁹ in the early 20th century.¹⁰ This model complements those of Kotter⁵ and of Silversin and Kornacki⁶ by describing how change is adopted rather than describing steps in the change process. Imagine a bell-shaped curve with "time to adoption" as the abscissa and the percent of adopters as the ordinate. At the leading edge of this Gaussian distribution of change adoption, innovators comprise 2.5% of the population (ie, are 2 standard deviations above the mean). Innovators are characterized by "venturesomeness, fascination with novelty, and risk tolerance"⁷ and are the first group to embrace and to use new knowledge. At the other extreme of the population, "laggards" comprise the trailing 16% of the population (ie, are 1 standard deviation below the mean), "swear by the tried and true," and are generally resistant to change. In between these extremes lie the "early adopters," the "early majority," and the "late majority". Berwick⁷ emphasizes that change is more likely to spread when 5 features of the new idea are satisfied: (1) the benefit of the change is clear, (2) the innovation is compatible with the values, beliefs, and current needs of the group, (3) the change is simple to understand, (4) the change lends itself to being tried in a smaller pilot experience before widespread adoption (so-called "trialability"), and (5) adoption of the change by innovators is visible to the rest of the community (ie, so-called "observability"). Finally, in framing the factors that affect innovation and adoption, Berwick cites three: (1) how the innovation is perceived, (2) characteristics of the people who adopt (or fail to adopt) the innovation, and (3) contextual factors surrounding the innovation (eg, communication, incentive, leadership, and management). This third category regards characteristics of the change effort that are addressed by the models of Kotter⁵ and of Silversin and Kornacki.⁶

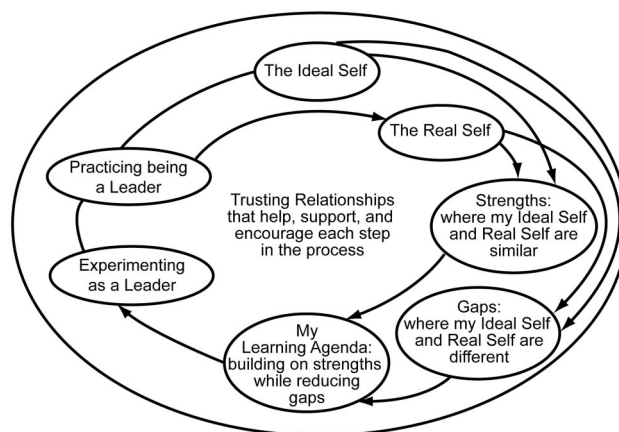


Fig. 2. As described in the text, this model outlines the process by which an individual can effect personal change. It starts by understanding one's "real self" (as you are), and then envisioning the "ideal self" (as you would like to be). Gaps between the real self and the ideal self are then clarified, which prompts development of a learning agenda and a personal development plan to close the gaps between the real self and the ideal self. The process is reinforced by risk-taking, experimentation, and an explicit plan to practice new behaviors and traits. (From Reference 8, with permission.)

Going beyond models for organizational change, many models for personal change have also been proposed and warrant mention because adopting change within the profession of respiratory care requires that individual RTs change.¹¹⁻¹³ One such model,⁸ which is perhaps especially germane because it relates to developing the leadership competencies that are key to implementing change, is the Intentional Change Theory of Boyatzis (Fig. 2). In this model, the roadmap for personal change begins with developing a clear vision of one's "ideal self"; specifically, the person who wishes to change develops a clear vision of the person he/she wishes to be, with all the associated competencies and qualities. The next step is for the person wishing to change to candidly assess him/herself, perhaps aided by specific exercises to elicit feedback (eg, a 360° feedback activity in which one rates oneself on competencies and then elicits others' ratings regarding these same competencies). Having established the "ideal self" state and the "real self" state (ie, that based on feedback), the next step is for the person wishing to change to examine the differences or gaps between his/her real and ideal selves on specific competencies. Finally, the person wishing to change constructs a personal development plan to close these gaps and to propel him/herself toward the ideal self.

At this point in the discussion, the skeptic might naturally ask, "What does any of this have to do with respiratory care or with me?" Offering an answer to this question invites a discussion of a change effort in respiratory care that has been maturing over more than 2 decades: optimizing the delivery of respiratory care services through

respiratory care protocols implemented by RTs. As presented in Table 1, change is embedded within this example because implementing protocols represents a radical departure from the traditional model of physician-ordered respiratory care. In the discussion that follows, I offer a real-world example of implementing respiratory care protocols based on a personal experience with this process at the Cleveland Clinic. In providing instances that exemplify the stages of the Kotter model,⁵ this discussion supports the notion that the aforementioned change models can be used to plan organizational change efforts. At the same time, recognizing the complexity and “messiness” of most organizational change efforts, I also offer examples of specific steps in this change effort that failed.

Implementing Respiratory Care Protocols as an Example of a Change Effort

In telling this story and using this experience as the object of analyzing a change effort, two important disclaimers should be mentioned. First, any examination of a change process retrospectively through the lens of these change models looks unduly “clean,” linear, and smooth. Of course, this perspective belies the reality that change processes, even when carefully planned, are often messy and non-linear in their trajectory and are complicated by unanticipated and sometimes unwelcome surprises. Second, the timeline over which administrative and organizational change efforts evolve is usually longer than the timeline over which clinicians characteristically observe the effects of clinical interventions. In this way, clinicians are at risk for being impatient about organizational change, as they can expect change to happen more quickly than usual. They may also become jaded by skepticism that change can occur in organizations.

As an example of a change effort in respiratory care, I briefly review the story of implementing respiratory care protocols at the Cleveland Clinic,¹⁴⁻¹⁹ beginning with the rationale for doing so, the actual structure of the resultant Respiratory Therapy Consult Service (RTCS), and selected studies along the way that helped inform the process and convince us and organizational decision-makers that the idea had merit. After presenting the story to clarify the value of change models, I shall then analyze this change process of implementing respiratory care protocols through the lens of the Kotter and Amicus models (see Table 1, and Fig. 1).^{5,6}

The impetus for developing respiratory care protocols at the Cleveland Clinic was the realization that our practice of respiratory care, like many others', was adversely affected by “misallocation of respiratory care,” because misallocation wasted resources at a time when most healthcare organizations were becoming increasingly cost-attentive.¹⁹ Misallocation consists of giving unneeded

and/or ineffective therapy to some patients (ie, over-ordering) and/or of failing to provide needed and effective respiratory care services to other patients (ie, under-ordering). Over-ordering and under-ordering usually occur concurrently in patient populations where this phenomenon has been studied, and sometimes occur within the same patient.²⁰⁻²⁴

We became aware that misallocation, though relatively sparsely studied at that time, was frequent in all institutions²⁰⁻²⁴ and in all clinical settings in which it had been studied to date. Because of the need to reduce waste and to optimize the allocation of respiratory care services in a financial climate in healthcare that discouraged departmental growth as service demands grew, eliminating misallocation was urgent. Our earliest realization that misallocation was occurring in our hospital came when we retrospectively reviewed 230 patients who were receiving newly ordered respiratory treatments at the Cleveland Clinic. In that study we observed that 25.2% of orders for respiratory care services represented over-ordering and 10.5% of patients experienced under-ordering.¹⁹ Because the sampling frame for this study included only patients for whom some respiratory care service was ordered, we suspected that the frequency of under-ordering in this study underestimates the true prevalence. With a sense of urgency established by growing demand for respiratory care services that outstripped available RTs to deliver them, a climate that discouraged adding RTs and the resultant need to eliminate over-ordering, and a concern that the recognition of over-ordering in other institutions had resulted in the elimination of respiratory therapy personnel in proportion to the degree of over-ordering, implementing respiratory care protocols and the RTCS at the Cleveland Clinic gained urgency and was launched. In this regard, the first stage of Kotter's change model⁵ was amply fulfilled.

The next step in implementing respiratory care protocols was to envision that a respiratory care protocol service could work in our hospital and then to disseminate among RTs the information that suggested the need for respiratory care protocols.^{14,15} Next, there was a clear need to engage RTs in a team effort to actually develop the concept of a respiratory therapy consult service and to design the actual protocols and the RTCS (Fig. 3). As the concept emerged, in the fully developed RTCS, RTs respond to the physician's request for a consult and then use branched logic algorithms to assess patients' respiratory needs and generate a respiratory care plan.

Physician champions for the RTCS were sought early on, and physician input into early versions of the protocols were also key success elements. Pilot studies were then conducted in which the RTCS was implemented¹⁵⁻¹⁷ with physician endorsement on selected nursing units at the Cleveland Clinic. The intent of these pilot studies was to invite feedback and to evaluate the process of implement-

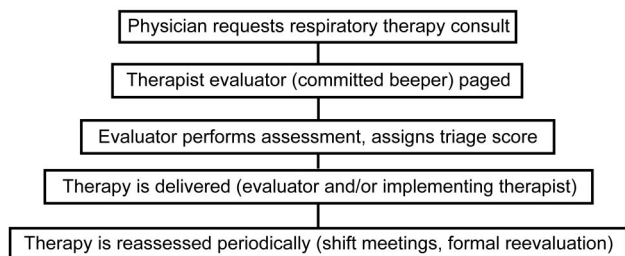


Fig. 3. Structure and flow of a respiratory therapy consult at the Cleveland Clinic. The physician requests a respiratory therapy consult, which prompts an respiratory therapist (RT) evaluator to see and assess the patient, and, using branched logic algorithms, to develop a respiratory therapy care plan for that patient. The RT evaluator then either performs the needed therapy or calls an implementing RT to deliver the needed respiratory treatments. The respiratory therapy care plan is then reassessed, often at each shift meeting, in which the RTs question each other about the indications for the respiratory therapy the patient is receiving.

ing the RTCS and associated outcomes toward the goal of adjusting and optimizing the RTCS for more widespread implementation. At the same time, early missteps that required learning and correction included our failing to engage early enough some vocal physician resisters and failing to assure that the nuances of some physicians' practices were incorporated into the protocols. These missteps highlight the lever in the Silversin and Kornacki model⁶ that physicians should be engaged early, and the guidance from the Kotter model⁵ that sources of resistance should be overcome early.

Having optimized the process for performing respiratory therapy consults, broader implementation of the RTCS on more hospital nursing units was begun, again with physician endorsement and with the understanding that use of the RTCS was at physician discretion. Specifically, physicians could either request and implement an RTCS-derived care plan or could generate their own order for all the patient's respiratory care.

We were keen to frankly assess whether the RTCS really worked to enhance allocation and so strongly wished to conduct a randomized controlled trial in which we compared head-to-head the appropriateness of respiratory care plans developed by RTs using the RTCS versus respiratory care plans developed by physicians (physician-directed care). We were also aware that such a trial could only be done at our hospital before physicians at the Cleveland Clinic fully embraced and used the RTCS, as it would be impossible to develop a control group of patients receiving physician-directed care after the RTCS was in widespread use within the hospital. We also felt it was critically important to candidly and rigorously assess the efficacy of the RTCS before advocating its widespread implementation. Also, if efficacy was shown, a push to implement widely would be justified and, in fact, mandated. In this

context, we initiated such a randomized controlled trial soon after optimizing the RTCS¹⁴ based on the multiple pilot studies. We wished to use the results, if they confirmed the hypothesis that allocation would be enhanced, to buttress support for use of the RTCS as an institutional policy.

The randomized controlled trial¹⁸ enrolled 145 patients, 71 in the RTCS group and 74 in the physician-directed group. Study participants for whom respiratory care plans had been already written by physicians were randomly allocated into one of 2 groups: the treatment group (in which the physician's respiratory care plan was preempted by an RTCS-directed respiratory care plan, which was developed blind to the physician's respiratory therapy orders) versus the control group (in which the physician's respiratory care plan was implemented). The primary outcome measure of the study was appropriately indicated respiratory therapy treatments, stratified by a priori criteria for stringent versus lenient levels of appropriateness. A variety of expected secondary outcomes were also examined (eg, hospital mortality, duration of stay, number and types of respiratory therapies used, and cost of respiratory therapy treatments). The results of the randomized trial indicated significantly enhanced allocation of respiratory therapy services with the RTCS (82% appropriate orders vs 64%, and 86% vs 72% appropriate orders [both with $P < .001$] using both stringent and lenient criteria respectively) for the appropriateness of respiratory care ordering. Trends were evident toward lower costs of ordered respiratory therapy services and no excess of associated adverse events (eg, hospital stay or mortality) with RTCS-directed care.

Encouraged by these confirmatory results, we next presented to the Cleveland Clinic's policy decision-makers (ie, the Board of Governors) a proposal to use the RTCS as the service by which most respiratory services would be ordered for Cleveland Clinic in-patients. This proposal was approved, leading to the longstanding use and entrenchment of the RTCS and of respiratory care protocols in the practice of respiratory care at the Cleveland Clinic, now more than 10 years ago. Indeed, the sustainability of using the RTCS and protocols provides evidence of the success of the change effort.

To further assess the value of the change models in helping to both understand and to plan a change effort in a healthcare organization, it may be helpful to consider the change effort of implementing the RTCS using the models proposed by Kotter⁵ and by Silversin and Kornacki.⁶ In fact, both of these models seem quite helpful in describing the actual steps in our change effort.

Considered using the Kotter model,⁵ a sense of urgency to implement a new paradigm for delivering and allocating respiratory care was being created when we decided to examine misallocation in our own hospital. Coupled with

concerns that misallocation wastes scarce resources and that our finding over-ordering might prompt an administrative response of eliminating RTs (in proportion to the percent of over-ordering), this realization and sharing these findings widely among the RTs involved in the study and others created a “burning platform” from which to launch the change effort. Urgency therefore was created.

Next, in reaching out to RTs to help craft protocols and to design the flow of the RTCS and in seeking physician champions to help facilitate pilot studies, we were creating a guiding coalition. (As noted, one of our early missteps was failure to anticipate all the potential pockets of resistance and having to address these later and in a less optimal way.) In designing the respiratory care consultation process, we were creating the vision of the new state. In designing early pilot studies from which to learn about optimizing the program, we were creating a strategy to drive the change process. At least in retrospect, we reasoned that we needed to learn from early experience about how to conduct the service and also needed to sound the environment for pockets of potential resistance (eg, from physicians who might regard the RTCS as a threat to their clinical autonomy and/or authority).

Also, naming the program as a “consult service” was a strategic step because the name used the language of a widely accepted, well established clinical resource (ie, a clinical subspecialty consult service to which physicians routinely turn for expert help in managing a complex clinical problem) to describe this new, and then radical service. By likening the RTCS to a clinical subspecialty consult service, we were invoking the acceptability and desirability of expert help by the RTCS, thereby ideally avoiding some of resistance that could arise if the RTCS was seen as a departure from acceptable practice.

The change vision was communicated in 3 important ways: (1) by engaging RTs in helping to develop protocols and designing the RTCS, (2) by engaging physicians early and by including them in the discussion and analysis of the pilot studies, and (3) by sharing the results of the randomized controlled trial with organizational leaders in order to elicit support for implementing the RTCS institution-wide.

The desire to gather definitive data to present to Cleveland Clinic decision-makers on the Board of Governors and to sanction the RTCS at the highest institutional level was an attempt to empower broad-based action. Specifically, in carrying out a service that was endorsed by organizational leadership, RTs were exercising the permission they had received to execute the RTCS. With each paper we published and with the completion of the early pilot studies, the respiratory therapy group took time to celebrate short-term wins and to acknowledge the many contributors whose work helped realize the RTCS. Indeed, we tried to make publishing a paper and/or presenting an abstract in which the individual RT could showcase her/

his work in the presence of colleagues into a celebratory, reinforcing event. We strove to develop a culture in which RTs’ academic contributions were cause for celebration.

Once the RTCS was under way, we observed interest by RTs outside the Cleveland Clinic to join an environment that promoted RT professionalism and autonomy. Indeed, this consolidation of gains had a two-fold effect that seemed doubly beneficial. In the short-term, instituting a new paradigm in which RTs could exercise decision making but had accountability challenged some RTs who were wedded to the older paradigm of physician-ordered respiratory care; some RTs elected to leave for other, more tradition-bound environments. On the other hand, the prospect of working on the RTCS and in a professional milieu that expects judgment and accountability proved attractive to more innovative RTs who were seeking such an environment; this allowed us to recruit some very talented RTs.²⁵ Notably, since an initial out-migration of what we might regard as the laggards in the aforementioned change adoption model,⁷ the annual turnover rate for RTs has been generally quite low (ie, uniformly < 10% and sometimes below 5%). Finally, the RTCS has become anchored in the culture of respiratory care at the Cleveland Clinic as enthusiasm to implement respiratory care protocols has extended beyond the initial clinical areas of application (ie, in adult non-intensive-care in-patients) to pediatrics and to intensive-care settings. Also, management information systems have been acquired with a view that the respiratory care protocols could be embedded and programmed. In this way, new RT leaders in our hospital need to be aware of the systems that are in place. A leadership pipeline was developing for succession planning. Overall, it appears that Kotter’s 8-stage model for change⁵ describes the implementation of RT protocols well.

Similarly, the process of implementing RT protocols can be understood through the Amicus change model of Silversin and Kornacki.⁶ For example, developing a shared vision of the RTCS, its purpose, and structure was a key first step. Similarly, tension was developed when misallocation was recognized. The RTs were aligned in their teaming together to design protocols, and the RTCS and potential sources of resistance were addressed by involving physicians early. What emerged was a culture that welcomed change avidity and that has allowed other innovations to further anchor the RTCS, such as implementing a management information system that contains the protocols and interfaces with the hospital’s electronic medical record, and auditing the appropriateness of respiratory care ordering.

Characteristics of Change-Avid Respiratory Therapy Departments

Enthusiasm for the RTCS and for the process of innovating in respiratory therapy created ongoing interest in

the question: What are the characteristics of RT departments that embrace change (ie, are change-avid)? Asking this question prompted us to undertake an observational study²² in which we used a priori criteria to define change-avid RT departments (ie, characterized by having at least 2 of the following 3 criteria: (1) uses a management information system in respiratory therapy, (2) uses a comprehensive respiratory therapy protocol program, and (3) uses noninvasive ventilation for at least 20% of patients with exacerbations of chronic obstructive pulmonary disease). We then invited and interviewed leaders from 8 RT departments that were deemed either change-avid ($n = 4$) or non-change-avid ($n = 4$) regarding the structure, culture, and attitudes of their departments. Based on 2 instruments that assessed change readiness using available change models, ratings on change-avid departments differed significantly on both instruments. In-person interviews of the RT leaders from those departments also informed themes that distinguished change-avid from non-change-avid departments.

These differentiating features of change-avid RT departments were: having an up-to-date leadership team; employee involvement in change; celebrating wins; and an overall sense of progressiveness in the department. Individuals in change-avid departments often subscribe to and model the behaviors of seeking improvements in respiratory care practice, valuing teamwork, and supporting colleagues' successes. Further reflection identified 11 highly desired features of change-avid RT departments (Table 2). In keeping with the idea that professional satisfaction requires alignment between the organization's values and those of the individual, personal observation suggests that characteristics of individuals in change-avid RT departments include: having energy to innovate and a desire for quality; a desire to communicate and to ask questions; good teamwork; a thirst for ongoing learning and self-development; and organizational political awareness. Perhaps not surprisingly, many of the 11 features that characterize change-avid departments seem closely related to stages in the Kotter model of change,⁵ further suggesting the applicability of these principles to change in healthcare settings.

Implications for the Profession of Respiratory Care and for Respiratory Therapists

In the context that change is important for respiratory care, what implications and/or suggestions might this discussion have for our profession of respiratory care and for us as individual respiratory clinicians?

First, regarding the profession, it is worth emphasizing the necessity of change for progress in respiratory care and, indeed, for its very vitality. Stasis and complacency will cause stagnation and will cause talented respiratory

Table 2. "Highly Desired" Features of a Change-Avid Respiratory Therapy Department

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| 1. Having a close and collegial working relationship between the medical director and the respiratory therapy staff |
| 2. Having a strong and supportive champion for change in the hospital administrative structure (eg, hospital leaders and medical director) |
| 3. Using data and other evidence to define problems and to measure the effectiveness of proposed solutions |
| 4. Using multiple and redundant types of communication to cascade information throughout the respiratory therapy department |
| 5. Being attentive to the forces of resistance and obstacles to change, and being able to navigate within institutional systems and people to achieve change |
| 6. Being willing to confront, engage, and gain closure on tough issues |
| 7. Having and maintaining a culture of internal, self-imposed, systematic, ongoing education and knowledge-acquisition |
| 8. Consistently rewarding and recognizing change-avid behavior among the respiratory therapy department members |
| 9. Fostering ownership for change rather than just complying with external policies and demands and, as part of this ownership, taking the time to identify and involve stakeholders in change (eg, physicians, nurses, hospital thought-leaders and decision-makers) |
| 10. Paying attention to leadership development and succession-planning in the respiratory therapy staff |
| 11. Having and communicating a vision in the department |

(Adapted from Reference 4.)

clinicians to leave the field in search of challenges and opportunities to contribute elsewhere.

The obvious corollary is that respiratory therapy must encourage innovation and creativity among its members. Strategies to realize this goal might include developing and fostering a pipeline of creative, talented respiratory clinicians and celebrating their resultant innovations. More specifically, I believe we must develop strategic academic partnerships and offer substantial scholarships that will encourage talented respiratory clinicians to pursue advanced training that will equip them to take on the challenging issues of healthcare and to move the field. Training in areas such as clinical investigation, biostatistics, epidemiology/public health, education, and organizational development would allow these talented colleagues to reinvest this training and talent in respiratory care. I applaud the current movement to establish masters-level training in respiratory care, because such training will confer to these masters-prepared individuals the needed skills to lead in respiratory care. In my view, the ideal curriculum would also include training in leadership, change management, scientific inquiry, biostatistics, and data management. Surely, were we to foster a pipeline of advanced trainees in respiratory care, prospects would be bright for the continuous renewal and innovation on which progress and the field of respiratory care depend.

In addition to encouraging advanced training, we can never recognize and celebrate creativity and innovation enough. By motivating young respiratory clinicians to innovate and by celebrating their creativity and accomplishments in public forums and with prestigious awards, we will further anchor creativity and change-avidity in the culture of respiratory care.

Complementing these lessons for the field, what lessons do the importance of change and innovation have for us as individual respiratory clinicians? First, RTs with “venture-someness, fascination with novelty, risk tolerance”⁷⁷ and with extreme curiosity and energy must step forward, pursue advanced training, and push the field forward. As occurs today in pockets of talent, RTs must prepare themselves to secure the most competitive sources of extramural funding and establish themselves in pacesetter institutions and on the most prestigious faculties. They must model the traits they hope to engender in those who follow them, thereby consolidating a culture of energy and a legacy of progress.

Even more so than currently, RTs must embrace the values of professionalism and of scientific and clinical inquiry. Only in this way can we assure continued excellence in clinical practice, the curiosity that is at the core of scientific investigation, and the integrity to conduct research in an exemplary way.

In summary, respiratory therapy needs change to thrive, and all of us, as stewards of the profession, must come to embrace change. So, here’s a test of your change-avidity. Try brushing your teeth tomorrow with your non-dominant hand.

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