

## Translating Research into Practice in Nursing Homes: Can We Close the Gap?

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Received October 3, 2011; Accepted December 5, 2011  
Decision Editor: Rachel Pruchno, PhD

**Purpose:** A gap between research and practice in many nursing home (NH) care areas persists despite efforts by researchers, policy makers, advocacy groups, and NHs themselves to close it. The reasons are many, but two factors that have received scant attention are the dissemination process itself and the work of the disseminators or change agents. This review article examines these two elements through the conceptual lens of Roger's innovation dissemination model. **Design and Methods:** The application of general principles of innovation dissemination suggests that NHs are characteristically slow to innovate and thus may need more time as well as more contact with outside change agents to adopt improved practices. **Results:** A review of the translation strategies used by NH change agents to promote adoption of evidence-based practice in NHs suggests that their strategies inconsistently reflect lessons learned from the broader dissemination literature. **Implications:** NH-related research, policy, and practice recommendations for improving dissemination strategies are presented. If we can make better use of the resources currently devoted to disseminating

best practices to NHs, we may be able to speed NHs' adoption of these practices.

*Key Words:* Dissemination, Diffusion, Translation research, Implementation, Evidence-based practice

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This paper addresses a question that continues to challenge researchers, practitioners, and regulators: How do we translate what has been learned from research into daily practice in nursing homes (NHs)? Numerous studies and reports have documented this translation gap in a wide range of NH care areas (Chu, Schnelle, Cadogan, & Simmons, 2004; Schnelle et al., 2003; Simmons et al., 2003; Thakur & Blazer, 2008). The literature also identifies numerous reasons for this gap. Lack of staff knowledge, high turnover rates, understaffing, inconsistent regulatory practices, poor or no financial incentives to improve care, and weak management caused in part by inaccurate information systems—all have been cited and examined in the literature as barriers to evidence-based practice in

NHs (Donoghue, 2010; Harrington et al., 2000; Jones et al., 2004; Wiener, 2003). Another reason for the gap is that we have only limited evidence about the best ways to translate NH research in to day-to-day practice. As we discuss in this review article, a number of researchers, funders, and improvement advocates currently are engaged in translating research into practice in NHs, in the United States as well as other countries, including Europe (Meesterberends, Halfens, Lohrmann, & de Wit, 2010), Canada (Estabrooks et al., 2009), and Australia (Bartlett & Boldy, 2001). Although a few case studies have profiled facets of their work (Yuan et al., 2010) and other studies have called for improved dissemination of best practices (Ouslander, 2007), none has critically analyzed the translation process, that is, the steps or approaches these change agents take to disseminate evidence-based practices by NH providers. This represents a missed opportunity: A thoughtful evidence-based approach to translation could mitigate the hampering effects of NHs' organizational barriers to change, making large-scale improvements more likely. Such an approach is also fiscally prudent at a time when funders are looking for results from their substantial development investments in new care interventions.

This review aims to fill this knowledge gap by examining NH translation efforts through Rogers' conceptual model for disseminating new interventions (Rogers, 2003; see also Gladwell, 2002; Green & Kreuter, 1999; Rowe, de Savigny, Lanata, & Victora, 2005; Titler, 2008). In his text, *The Diffusion of Innovations* (Fifth Edition), Rogers (2003, p. 6) describes innovation dissemination as a process that leads to "social change." For the purposes of this paper, effective translation strategies are those strategies, actions, and programs that lead to the adoption of evidence-based or recommended practices that in turn are associated with change, as measured by improvements in NH processes or outcomes.

Rogers further describes innovation dissemination as a process involving four elements: (a) an innovation (e.g., a new or previously untried idea or practice) disseminated to (b) members of a social system via (c) a communications channel (d) over time. Research across multiple disciplines has led to a body of general evidence-based principles about how innovations spread through this process. The findings also show that each dissemination area influences the other elements of the process. Thus, for example, an innovation's attributes can influence how quickly it is adopted; similarly, characteristics

of a target group can affect its intervention adoption rate (Rogers, 2003). Because the four elements are interrelated, how the dissemination process works in practice depends on the specific context (Rowe et al., 2005; Titler, 2008); an innovation that works in one environment may perform differently in another. With this in mind, this review's first section discusses the four-part dissemination process as it applies to known characteristics of the NH system in the United States. This allows us to make some initial assumptions about the ability of NHs to adopt new interventions and to gain insight into how external change agents—those NH researchers, advocates, funders, and policy makers working to bridge the gap between research and practice—should structure their work for best results. We then assess the extent to which this group's present efforts align with key principles of innovation dissemination. In part two, we discuss strategies for strengthening the work of change agents.

## **Innovation Dissemination Principles and NHs**

### *The Innovation*

Whereas 30 years ago long-term care experts acknowledged that little was known about strategies for improving NH care (Institute of Medicine, 1987), today there is growing consensus about a number of best-care practices, ranging from pain assessment (Chu et al., 2004) to incontinence management (Schnelle et al., 2003) to depression management (Thakur & Blazer, 2008) and even bathing (Rader et al., 2006). Despite these advances, studies have shown that relatively few NHs implement recommended care practices (e.g., Resnick, Quinn, & Baxter, 2004; Schnelle, Ouslander, & Cruise, 1997; Thakur & Blazer; Watson, Brink, Zimmer, & Mayer, 2003; Wipke-Tevis et al., 2004). One reason may be the design of the interventions themselves.

Dissemination research has shown that new interventions are most likely to be adopted if they are perceived by the end users as a real improvement, are compatible with existing practices, are simple to understand and use, can be tried on a limited basis, and lead to visible results (Pronovost & Vohr, 2010; Rogers, 2003). Schnelle and colleagues (1997) have argued that few NH interventions meet these standards. They as well as researchers in related health care fields (Green & Kreuter, 1999; RE-AIM.org, 2011b) contend that such implementation considerations are often shortchanged in controlled research trials aimed first and foremost at demonstrating an intervention's effectiveness. Rarely

are new NH interventions retested and refined under usual care conditions, taking into account feedback from end users. The result is that well-intended interventions may be simply impractical to implement without thoughtful modifications to address translational barriers.

Nevertheless, there is evidence that some researchers are working to ensure that recommended NH interventions can be implemented. To cite a recent example, concerted efforts were made to ensure that nurses could conduct the new federally required resident assessment (the Minimum Data Set 3.0) in a reasonable period of time (Saliba, 2008). Schnelle (1990) and Simmons and colleagues (2008), working to improve incontinence care and mealtime assistance, respectively, have developed efficacious streamlined clinical interventions as well as reliable validated protocols for targeting and monitoring these interventions in a time-efficient manner. Meanwhile, advocacy groups, such as the national coalition on Advancing Excellence in America's Nursing Homes (2011), are encouraging NHs to use quality improvement methods that help ensure that new interventions are feasible to implement.

Practical designs or approaches for improving care, however, are no guarantee that the new interventions will be adopted (Schnelle, McNeese, Crooks, & Ouslander, 1995). Indeed, there is little evidence that NHs have widely implemented the improvement approaches recommended by Schnelle (1990), Simmons and colleagues (2008), and the Advancing Excellence campaign—or many other research and advocacy groups for that matter. In this regard, feasible interventions are perhaps best viewed as necessary but insufficient to prompt NH improvements.

### *The Social System*

Certain organizational characteristics affect the adoption of new interventions. Generally, an organization is more likely to adopt a new practice if it is less bureaucratic and regulated, has uncommitted resources, has a staff with a relatively high level of knowledge and expertise, and has a horizontal staffing structure (Rogers, 2003; Titler, 2008). By these standards, few NHs qualify as innovative organizations, for as a whole they are highly regulated, often understaffed and hierarchical (Harrington et al., 2000), and employ direct-care staff composed largely of low-wage workers with little formal training and high turnover rates (Donoghue, 2010).

One strategy for enhancing innovativeness is to work to eliminate the structural barriers that stifle it. Because some NH industry characteristics, such as regulatory oversight, pay rates, and workloads, are unlikely to change in the near-term in ways that enhance facilities' innovativeness, many change agents have focused their efforts instead on characteristics more amenable to change, especially staffing practices. For instance, some now advocate adoption of staffing practices intended to improve staff satisfaction and thus reduce turnover rates (Advancing Excellence in America's Nursing Homes, 2011). But such approaches face a Catch-22 in that they require NHs to first innovate (e.g., adopt new staffing practices) in order for them to become more innovative.

An alternative strategy is to “work around” structural barriers to change in ways that mitigate their influence on implementation practices. This approach opens the door to progress in the face of potential obstacles. It is employed, for instance, whenever researchers, as discussed earlier, design interventions that can be readily implemented even in resource-constrained NHs (Saliba, 2008; Simmons et al., 2008). Apart from intervention design, however, much of the research literature is silent about whether a particular “translation” strategy (as opposed to a clinical intervention) was explicitly designed to accommodate staff whose members have varied training levels, high turnover rates, and heavy workloads. However, a new trend may be emerging. A few recent reports describe translation strategies whose designs could help compensate for NHs' organizational barriers to change. One study, for example, tested a distance coaching course structured to reach NH staff at multiple levels and to provide extra support to those homes confronting staffing challenges (Rahman, Schnelle, Yamashita, Patry, & Prasauskas, 2010). Similarly, a few multifaceted translation studies have provided multilevel training with follow-up coaching to help NHs improve care (Hutt et al., 2006; Jones et al., 2004; Rantz et al., 2011). These studies reported improvements in some process and outcomes measures—related to incontinence care (Rahman et al., 2010), pneumonia treatment (Hutt et al.), pain management (Jones et al.), and overall quality as well as pressure ulcers and weight loss (Rantz et al.). But the improvements were often more limited than expected and the staffing problems more challenging. Additionally, the studies involved relatively few intervention NHs (from 1 to 29) and some relied only on NH supervisors' self-reported process measures (Rahman

et al., 2010). Thus, although these studies hold promise, their findings and limitations also suggest that more work is needed to develop and replicate a range of effective translation strategies that help overcome organizational barriers to change in NHs.

### *Communication*

The third element in the dissemination process, communication is often divided into three types: (a) mass media, typically journals, and newsletters but also many conferences and webinars that transmit information mostly one way to large audiences; (b) interpersonal channels, which involve repeated person-to-person exchanges between two or more individuals; and (c) interactive channels, which include the Internet and represent the newest, and consequently, least-tested communication channel.

Two general rules about communication channels are pertinent to this review. First, studies suggest that massmedia communications are most useful for promoting knowledge of new innovations but less successful at persuading end users to adopt the interventions (Shojania & Grimshaw, 2005; Watson et al., 2003). Second, less innovative systems often require more interpersonal communications when deciding to implement new interventions (Rogers, 2003).

NH change agents by and large have relied on mass media communication to promote evidence-based practice. For instance, a research group will publish in an academic journal the results of its improvement intervention trial (e.g., Simmons et al., 2008); an NH membership association will disseminate best-practice guidelines on improving care management (e.g., American Medical Directors Association, 2011); and an advocacy group will publish toolkits for improving NH care (e.g., Advancing Excellence in America's Nursing Homes, 2011). The advantage of these and similar strategies is their relatively low cost and convenience. However, as noted earlier, they typically are insufficient to prompt adoption of new interventions (Rogers, 2003). This may be especially true in organizations such as NHs that are organizationally less innovative, as described earlier. Indeed, research findings from long-term care suggest that simply providing NHs with quality improvement information does not result in widespread change (Rantz et al., 2001; Resnick et al., 2004; Watson et al., 2003).

On the other hand, there is evidence that longer-term interventions featuring regular exchanges, often

face-to-face, between NHs and change agents lead to measurable improvements in at least some processes and outcomes (Baier et al., 2004; Hutt et al., 2006; Jones et al., 2004; Lynn et al., 2007; Rantz et al., 2003, 2009, 2011). Few of these strategies have been replicated, so again, more research is needed. In addition, these approaches can be costly and have proved challenging, though not impossible (see Rantz et al.), for change agents to sustain. For instance, the state Quality Improvement Organizations (QIOs) reported in a 2007 evaluation that onsite visits to NHs were their most effective change strategy, but because of budget constraints their most frequently used strategies were conferences and information dissemination (Government Accountability Office, 2007).

Against this backdrop is emerging evidence that change agents are using more interactive telecommunications to increase contacts with NHs, in some cases over lengthy periods, without substantially increasing their program administration costs. A few initiatives, for example, have used regular telephonic coaching calls over several months to keep in touch with NHs enrolled in improvement programs (Hutt et al., 2006; Rahman et al., 2010). The Advancing Excellence in America's Nursing Home (2011) campaign recently added to its website software tools that enable NHs to analyze improvement data and compare their results with other NHs. And Castle (2011) recently reported positive results, including improvements in published quality measures, from a web-based tool, Staff Assist, which helps NHs manage their staffs more effectively. These strategies may be especially appealing when change agents and the NH they target are geographically distant from each other. One potential drawback, however, is that many NHs are technologically deficient. A statewide survey of Ohio NHs, for instance, found that fewer than half were making even moderate use of available information technologies (Baker, Straker, & Deacon, 2009). Going forward, it will be important to evaluate NH use of technology-assisted translation strategies. Although Bakerjian and colleagues (2011) and Castle (2011), for example, have demonstrated that NH staff can use the Advancing Excellence and Staff-Assist tools, respectively, it is not yet clear that NHs will use these online tools over the long run. Follow-up research is needed.

### *Time*

Time is an often underestimated yet critical element of the dissemination process, for research has demonstrated that innovation adoption in

organizations is a staged process that can take months, even years to achieve (Senge et al., 1999). In general, less innovative organizations require more time to adopt new interventions (Rogers, 2003). Thus, we can expect NHs—again, generally considered less innovative—to require more exposure to new interventions before implementing them fully.

Translation strategies that increase interpersonal interactions between change agents and NHs often do so at the expense of time—and vice versa. For instance, conferences, a frequently used change strategy, offer limited opportunities for groups to interact and exchange views; however, they also constrain contact to a short period, often 1 or 2 days, for a limited number of staff members, typically only a few upper-level professionals. This may be insufficient time and contact for all but the most highly innovative NHs to work through the adoption-decision process. By contrast, translation strategies that make information available to all staff for long periods of time, such as web-based toolkits, often offer few opportunities for exchange between change agents and NHs. Cost is the likely culprit here, for as noted earlier, it traditionally has been expensive for change agents to offer ongoing collaborative support to NHs. But here again, one alternative worth exploring is increased use of interactive telecommunications, used either alone or in combination with face-to-face consultations.

### **Research, Policy, and Practice Recommendations**

Drawing upon the foregoing review, this section presents recommendations intended to strengthen the work of NH change agents, especially funders, researchers, and quality improvement advocates.

#### *Funding Organizations*

Organizations that fund NH research can influence the development of new innovations with their support. Many funders have tried to hold researchers accountable for dissemination by requiring them to propose and implement dissemination plans for their research findings, products, and interventions. Often, these plans are a weakly funded afterthought to the research plan. Commonly, they fail to advance the adoption process beyond the awareness stage, for they often center on information dissemination, through, for example, research reports and how-to toolkits. Additionally, they are carried out whether or not the research has

produced results with wide applicability. Although well intentioned, there is no evidence that this funding strategy has facilitated the widespread adoption of evidence-based NH practices.

One alternative recommendation is that funders replace their dissemination requirement with a mandate that NH researchers evaluate new interventions not only with respect to clinical efficacy but also with respect to how feasible they are to implement. This policy recommendation is in keeping with a proposal articulated by Schnelle and colleagues (1997) more than a decade ago and reiterated by Green (2007) with his observation that, “If we want more evidence-based practice, we need more practice-based evidence.” To facilitate these evaluations, researchers could use a structured assessment process, such as the RE-AIM Planning Tool (RE-AIM.org, 2011a). Now widely used in health and public health research, this tool presents a series of “thought questions,” under the categories of reach, effectiveness, adoption, implementation, and maintenance, which touch on innovation characteristics that promote adoption (May & Finch, 2009) and serve as a planning checklist for new interventions. Completed as part of a final report, the assessment results could help funders better allocate their dissemination dollars: Rather than dividing such funding among all grantees, regardless of research outcomes, they could now target those monies—in a second round of funding, for example—to the interventions most worthy of dissemination. A strength of this approach is that it begins to treat translational research as a science in its own right, recognizing that translation strategies are themselves interventions that “require an evidence base of their own” (Shojania & Grimshaw, 2005, p. 140).

#### *Researchers*

*Intervention Design Considerations.*—Whether or not funders require it, and for reasons already discussed, NH researchers who develop and test new care and quality-of-life (QOL) interventions (e.g., a depression or pain management intervention) should evaluate these interventions for both effectiveness and ease of implementation.

Researchers should also consider testing new interventions under usual NH conditions and eliciting feedback from providers, for this approach will help ensure that new programs are feasible to implement. A one-step approach to testing both the effectiveness and efficacy of new interventions

is to partner with NHs in the research process. In one such study, for example, the researchers, in collaboration with staff in six NHs, refined a depression management intervention that resulted in improvements in residents' depressive symptoms (Meeks, Looney, Van Haitsma, & Teri, 2008). Sometimes called community-based participatory research, this partnership approach typically starts with identification of a research topic of interest to the community—in this case, NH staff and residents (Community Based Partnerships for Health, 2011). In this way, it stands in contrast to the usual practice of studying topics researchers believe should be of interest to providers (Applebaum & Leek, 2008).

*Follow-up Considerations.*—Once a new intervention has proven effective and practical, attention turns to developing and testing new strategies (e.g., a web-based seminar, an audit-and-feedback program) that introduce the intervention to NHs and further promote its implementation. Like clinical interventions, these strategies also should be evaluated for both their effectiveness and feasibility, including administration costs, which can be a barrier to sustaining or replicating new dissemination approaches. As noted earlier, some of the most effective translational strategies in NHs to date are the most labor and time intensive to implement (e.g., Lynn et al., 2007). Consequently, few of them have been widely adopted by other advocacy or change agent groups, such as the QIOs. On the flip side, some popular translational strategies (e.g., 1-hr webinars) have not been shown to improve NH practice. Like the interventions they aim to disseminate, translational strategies themselves should be both effective and practical to implement if they are to have a long-term impact.

Related to this is that more translational strategies should be conducted in partnership with the change agents best positioned to maintain these strategies. Many researchers do not develop and test translational strategies that they themselves intend to sustain. Rather, their research is aimed at developing strategies that other groups can use to improve NH practice. These groups include the QIOs, NH professional associations, and a variety of national and state coalitions—all with standing organizational mandates to improve NH practice. Researchers who expect these groups to adopt effective translational strategies should develop new approaches in collaboration with the intended end users. Such partnerships will help ensure that the resultant strategies are maintained.

*Research Topics of Special Interest.*—Of note, here are three topics with potential to boost the translation of NH research into practice. The first is an assessment of the preferences and change strategies NHs elect when they embark on improvement initiatives. Which services do they want to improve? To make improvements, do they consult with peers? Attend training sessions? Download toolkits? To date, no such assessment has been conducted, but its results could help change agents tailor their dissemination strategies to their target audience.

Also recommended is more and better comparative effectiveness research on translation strategies. In public health, such research has led to the tentative identification of effective translation strategies for reaching at-risk patient populations. As discussed by Shojania and Grimshaw (2005), the most effective approaches tend to be multifaceted (e.g., combining instructional education with audit and feedback) and involve active as opposed to passive strategies (e.g., coaching activities vs. disseminating published guidelines). The findings also suggest, however, that there is no single best strategy; rather a range of translation approaches can be useful (Shojania & Grimshaw). This literature should inform translational research in NHs, but public health approaches may need to be modified for NHs, for dissemination strategies operate differently in different care settings (Rowe et al., 2005; Titler, 2008). For instance, staff turnover, which can undermine care improvement efforts, appears to be more problematic in NHs than in public health settings and so should influence the design of NH-related dissemination strategies in a larger way.

Finally, time and attention should be devoted to empowering NHs to innovate on their own, with little or no help from outside change agents. For example, a QIO working with NHs to improve pressure ulcer prevention practices might recommend that the facilities monitor their progress using a widely advocated continuous quality improvement (CQI) strategy (Advancing Excellence in America's Nursing Home, 2011). QIO staff might use this as a "teaching moment" to raise awareness among the NHs that this same CQI process can be applied to any improvement initiative. Indeed, others have pointed out that overarching improvement strategies (e.g., CQI or teamwork) are often most effectively learned when they are connected to an applied training program (Musson & Helmreich, 2004).

## Quality Improvement Advocates

As noted earlier, the NH industry has several membership and advocacy groups currently promoting evidence-based practice in NHs. These groups could become more effective change agents, first by recognizing that NHs are likely to be slow to innovate (Rahman et al., 2011; Lynn et al., 2007; Rantz et al., 2011). Applying previously presented dissemination principles, these advocacy groups should recognize that passive translation strategies are likely to be insufficient to prompt change, that NHs may require extended time to implement new interventions, and that frequent contacts with change agents can spur adoption (Rogers, 2003). NH translational studies have reported at least preliminary support for all these precepts (Hutt et al., 2006; Jones et al., 2004; Lynn et al.; Rahman et al., 2011; Rantz et al., 2001; Watson et al., 2003). This observation suggests that advocates may strengthen their work by more consistently employing strategies that are informed by the dissemination literature.

A reasonable starting place is to evaluate goals and strategies with respect to the dissemination principles presented earlier. With respect to goals, for instance, an advocacy group should consider whether it wants to increase awareness of a particular problem or promote adoption of an evidence-based practice. If the latter, as increasingly seems to be the case (e.g., “Advancing Excellence”; the QIOs), then it should consider the best means to this end. In particular, advocates should consider employing translation strategies that go beyond information dissemination to promote and support intervention implementation. This may entail—again with reference to key dissemination principles—identifying weak points in a planned dissemination process, then working to overcome these by strengthening other areas of that process. For example, if an intervention selected for dissemination is especially complex or time-consuming to implement, then the advocacy group may need to extend support and increase its contacts with target NHs to help ensure the intervention’s implementation. If the target NHs are known to be especially poor performers, then the advocacy group may want to recommend implementation of only the simplest improvement intervention. A sole reliance on conferences, brief webinars, and written materials should be critically examined, for much translation research shows that these educational strategies are necessary but insufficient to change practice (Titler, 2008).

Other alternatives, possibly in combination with education, should be considered.

The challenge is that, as discussed throughout this review, evidence-based translation alternatives are scarce, and the strategies that have proven most effective—that have produced measurable changes in NH process, outcomes, or both—have rarely been replicated and, in any case, may be too complex or expensive for some advocacy groups to implement (e.g., Hutt et al., 2006; Lynn et al., 2007). It bears repeating: More research is needed. But waiting for the research to advance is as untenable a position as settling for the status quo. Progress lies in experimenting with and continuously evaluating new strategies to the best of an advocacy group’s ability. Ideas for moving forward include the following.

*Charging for Services.*—Many NHs likely can afford to cover at least a portion of a translation program’s cost. Such fees make sense when intensive change agent support to achieve improved outcomes would otherwise be unavailable.

*Targeting Resources.*—Rather than do a little for a lot of NHs, advocacy groups should consider doing more for fewer if they believe implementation outcomes will improve. NHs are diverse organizations, and some are innovative enough that they do not require outside assistance to improve. It may, thus, be more prudent to deploy limited translational resources to NHs that most need them or are most likely to benefit from them. Doing so may allow advocacy groups to provide more intensive services that are more likely to result in real change. The QIOs have already begun targeting their services (Centers for Medicare and Medicaid Service, 2011), and Rantz and colleagues (2011) recently reported on a 2-year onsite consultation program that targeted low-performing NHs. This latter team’s findings—that care improvements are possible in these NHs but achieving even modest practice change requires commitment from NH administrative leaders and “continuous supportive consultation” from outside change agents—underscore the dissemination challenges and highlight the need to target translational resources.

*Using Telecommunications.*—Growing use of interactive telecommunications holds promise for providing extended support to NHs at an affordable cost. New innovations continue to emerge. Already

mentioned in this paper are translational programs that have used regular telephonic coaching calls to help NHs implement new interventions (Hutt et al., 2006; Rahman et al., 2010) and web-based programs that help NHs analyze data with an eye toward care improvement (Advancing Excellence, 2011; Castle, 2011). Other health care fields also are evaluating new technology-assisted strategies, which may be applicable to NHs. For instance, researchers recently reported that public health workers in Africa who received regular text messages to remind their malaria patients to adhere to specific aspects of the care plan achieved sustained improvements in patient outcomes at a low implementation cost (Zurovac et al., 2011). Although many NHs are presently digital novices, they—like many of us—are under pressure to adopt new technologies in order to survive and thrive. NH advocacy groups should not hesitate to be trendsetters in this area.

**Combining Strategies.**—Research in other fields suggests that multicomponent translational strategies work best, particularly in low-resource settings (Rowe et al., 2005; Shojania & Grimshaw, 2005). With this in mind, NH change agents may improve their results by combining strategies. Rather than host a 2-day conference on, say, preventing pressure ulcers, an advocacy group might offer 1 day of training and then follow-up with coaching webinars that allow participants to discuss and get feedback on the conference ideas they are now attempting to implement.

**Coordinating Efforts.**—Advocacy groups might also advance their work more rapidly by coordinating their efforts and sharing the lessons learned with each other. Others have noted that translational efforts have been hampered by a lack of coordination among those working to advance the field (Grimshaw et al., 2004; Rowe et al., 2005). Here, the NH sector appears to be setting a better example. Evidence that QIOs are coordinating their efforts with the Advancing Excellence campaign bodes well for all (e.g., Health Services Advisory Group, 2011). More such partnerships are recommended, particularly at local levels where advocates and NH providers may have more opportunities to interact at a reasonable cost to both groups.

## Conclusions

This paper identifies a knowledge gap within a knowledge gap: It suggests that one reason we have

struggled to bridge the gap between research and practice in NHs is because our translational strategies are underdeveloped and have not been systematically evaluated. If we can strengthen this work, we might speed NHs' adoption of evidence-based practices. The task is daunting, yet the outlook is promising, for progress may depend less on generating new resources for translational efforts than on leveraging existing resources more carefully. Progress could be made, for example, by designing and evaluating new clinical and QOL interventions for both effectiveness and feasibility—and in partnership with NH end users. Similarly, the field would benefit from more collaborative research to develop and compare a range of follow-on dissemination strategies. Support for these research activities need not require new funding streams if instead funders make translation a priority consideration in at least some of their allocation decisions. Coordinating change agent efforts, more selectively targeting NHs, experimenting with multifaceted strategies, and making greater use of telecommunications—thoughtfully executed, these translation strategies may also improve outcomes and prove more sustainable without adding to change agents' administration costs. To be sure, these improvements alone are unlikely to wholly transform NH practice, a goal that ultimately may entail fundamental changes in how NHs are staffed, financed, and regulated. However, they represent a practical approach, attainable in the near-term, that advances us toward this larger goal. In sum, small improvements could trigger bigger improvements if change agents serve as role models and proactively implement change themselves.

## Funding

Support for Dr. A. N. Rahman was provided by a grant from the National Institute on Aging (T32AG0037).

## Acknowledgments

We would like to thank Suzanne Kunkel, Rebecca Luzadis, Katherine McGrew, and Jane Straker for their thoughtful and thought-provoking critique of an earlier version of this manuscript. We also want to acknowledge the constructive feedback from the journal's anonymous reviewers, which helped strengthen the paper.

## References

- Advancing Excellence in America's Nursing Homes. (2011). Home page. Retrieved October 3, 2011, from <http://www.nhqualitycampaign.org/>
- American Medical Directors Association. (2011). *Clinical practice guidelines in the long term care setting*. Retrieved September 6, 2011, from <http://www.amda.com/tools/guidelines.cfm>
- Applebaum, R. A., & Leek, J. (2008). Bridging the academic/practice gap in gerontology and geriatrics: Mapping a route to mutual success. *Annual Review of Gerontology and Geriatrics*, 28, 131-148.



- Baier, R. R., Gifford, D. R., Patry, G., Banks, S. M., Rochon, T., DeSilva, D., et al. (2004). Ameliorating pain in nursing homes: A collaborative quality-improvement project. *Journal of the American Geriatrics Society*, 52, 1988–1995. doi:10.1111/j.1532-5415.2004.52553.x
- Baker, H., Straker, J., & Deacon, M. (2009). *Technology in Ohio nursing homes: A report on the state of the art*. Oxford, OH: Scripps Gerontology Center, Miami University.
- Bakerjian, D., Bonner, A., Benner, C., Caswell, C., Weintraub, A., & Koren, M. J. (2011). Reducing perceived barriers to nursing homes data entry in the Advancing Excellence Campaign: The role of LANEs (Local Area Networks for Excellence). *Journal of the American Medical Directors Association*, 12, 508–517. doi:10.1016/j.jamda.2010.03.014
- Bartlett, H., & Boldy, D. (2001). Approaches to improving quality in nursing and residential homes: Recent developments in Australia and their relevance to the UK. *Journal of Quality in Ageing and Older Adults*, 2(3), 3–14. doi.org/10.1108/14717794200100018
- Castle, N. G. (2011). Staff assist: A resource to improve nursing home quality and staffing. *The Gerontologist*, 51(5), 714–722. doi: 10.1093/geront/gnr038
- Centers for Medicare and Medicaid Services. (2011). *Quality Improvement Organizations: Statement of Work*. Retrieved September 15, 2011, from [http://www.cms.gov/QualityImprovementOrgs/09\\_Current.asp#TopOfPage](http://www.cms.gov/QualityImprovementOrgs/09_Current.asp#TopOfPage)
- Chu, L., Schnelle, J. F., Cadogan, M. P., & Simmons, S. F. (2004). Using the Minimum Data Set to select nursing home residents for interview about pain. *Journal of the American Geriatrics Society*, 52, 2057–2061. doi:10.1111/j.1532-5415.2004.52565.x
- Community Based Partnerships for Health. (2011). Community-based Participatory Research. Retrieved September 15, 2011, from <http://depts.washington.edu/ccph/commbas.html>
- Donoghue, C. (2010). Nursing home staff turnover and retention: An analysis of national level data. *Journal of Applied Gerontology*, 29(1), 89–106. doi:10.1177/0733464809334899
- Estabrooks, C. A., Hutchinson, A. M., Squires, J. E., Birdsell, J., Cummings, G. G., Degner, L., et al. (2009). Translating research in elder care: An introduction to a study protocol series. *Implementation Science*, 4, 51. doi:10.1186/1748-5908-4-51
- Gladwell, M. (2002). *The tipping point: How little things can make a big difference*. New York: Little, Brown and Company.
- Government Accountability Office. (2007). *Federal actions needed to improve targeting and evaluation of assistance by Quality Improvement Organizations*. Retrieved September 15, 2011, from [www.gao.gov/cgi-bin/getrpt?GAO-07-373](http://www.gao.gov/cgi-bin/getrpt?GAO-07-373)
- Green, L. W. (2007). PRECEDE-PROCEED & RE-AIM as Frameworks for Practice Practice-Based Planning and Evaluation. CDC Oral Health Workshop. Atlanta. Retrieved February 9, 2012 from <http://www.astdd.org/docs/LarryGreenPresentationSelectedSlides.pdf>
- Green, L. W., & Kreuter, M. W. (1999). *Health promotion planning: An educational and ecological approach* (3rd ed.). Mountain View, CA: Mayfield.
- Grimshaw, J. M., Thomas, R. E., MacLennan, G., Fraser, C., Ramsay, C. R., Vale, L., et al. (2004). Effectiveness and efficiency of guideline dissemination and implementation strategies. *Health Technology Assessment*, 8(6), iii–iv, 1–72.
- Harrington, C., Kovner, C., Mezey, M., Kayser-Jones, J., Burger, S., Mohler, M., et al. (2000). Experts recommend minimum nurse staffing standards for nursing facilities in the United States. *The Gerontologist*, 40, 5–16.
- Health Services Advisory Group. (2011). *California nursing homes*. Retrieved September 14, 2011, from <http://www.hsag.com/canursinghomes/default.aspx>
- Hutt, E., Ruscini, J. M., Corbett, K., Radcliff, T. A., Kramer, A. M., Williams, E. M., et al. (2006). A multifaceted intervention to implement guidelines improved treatment of nursing home-acquired pneumonia in a state veteran's home. *Journal of the American Geriatrics Society*, 54, 1694–1700. doi:10.1111/j.1532-5415.2006.00937.x
- Institute of Medicine (IOM). (1987). *Improving the quality of care in nursing homes*. Washington, DC: Author.
- Jones, K. R., Fink, R., Vojir, C., Pepper, G., Hutt, E., Clark, L., et al. (2004). Translation research in long-term care: Improving pain management in nursing homes. *Worldviews on Evidence-Based Nursing*, 1(Suppl. 1), S13–S20. doi:10.1111/j.1524-475X.2004.04045.x
- Lynn, J., West, J., Hausmann, S., Gifford, D., Nelson, R., McGann, P., et al. (2007). Collaborative clinical quality improvement for pressure ulcers in nursing homes. *Journal of the American Geriatrics Society*, 55, 1663–1669. doi:10.1111/j.1532-5415.2007.01380.x
- May, C., & Finch, T. (2009). Implementation, embedding, and integration: An outline of Normalization Process Theory. *Journal of Sociology*, 43, 535–554. doi:10.1177/0038038509103208
- Meeks, S., Looney, S. W., Van Haitsma, K. V., & Teri, L. (2008). BE-ACTIV: A staff-assisted behavioral intervention for depression in nursing homes. *The Gerontologist*, 48, 105–111. doi:10.1093/geront/48.1.105
- Meesterberends, E., Halfens, R., Lohrmann, C., & de Wit, R. (2010). Pressure ulcer guidelines development and dissemination in Europe. *Journal of Clinical Nursing*, 19, 1495–1503. doi:10.1111/j.1365-2702.2010.03229.x
- Musson, D. M., & Helmreich, R. L. (2004). Team training and resource management in health care: Current issues and future directions. *Harvard Health Policy Review*, 5, 25–35.
- Ouslander, J. G. (2007). Quality improvement initiatives for urinary incontinence in nursing homes. *Journal of the American Medical Directors Association*, 8, S6–S11. doi:10.1016/j.jamda.2006.12.020
- Pronovost, P., & Vohr, E. (2010). *Safe patients, smart hospitals: How one doctor's checklist can help us change health care from the inside out*. New York: Hudson Street Press.
- Rader, J., Barrick, A. L., Hoeffer, B., Sloane, P. D., McKenzie, D., Talericao, K. A., et al. (2006). The bathing of older adults with dementia: Easing the unnecessarily unpleasant aspects of assisted bathing. *American Journal of Nursing*, 106, 40–49. doi:10.1097/00000446-200604000-00026
- Rahman, A., Schnelle, J., Yamashita, T., Patry, G., & Prasauskas, R. (2010). Distance learning: A strategy for improving incontinence care in nursing homes. *The Gerontologist*, 50, 121–132. doi:10.1093/geront/gnp126
- Rahman, A., Simmons, S. F., Applebaum, R. A., Lindabury, K., & Schnelle, J. F. (2011). The coach is in: Improving nutritional care in nursing homes. *The Gerontologist*. Advance online publication. doi:10.1093/geront/gnr111
- Rantz, M. J., Cheshire, D., Flesner, M., Petroski, G. F., Hicks, L., Alexander, G., et al. (2009). Helping nursing homes 'at risk' for quality problems: A statewide evaluation. *Geriatric Nursing*, 30, 238–249. doi:10.1016/j.gerinurse.2008.09.003
- Rantz, M. J., Popejoy, L., Petroski, G. F., Madsen, R. W., Mehr, D. R., Zwygart-Stauffacher, M., et al. (2001). Randomized clinical trial of a quality improvement intervention in nursing homes. *The Gerontologist*, 41, 525–538. doi:10.1093/geront/41.4.525
- Rantz, M. J., Vogelsmeier, A., Manion, P., Minner, D., Markway, B., Conn, V., et al. (2003). Statewide strategy to improve quality of care in nursing facilities. *The Gerontologist*, 43, 248–258. doi:10.1093/geront/43.2.248
- Rantz, M. J., Zwygart-Stauffacher, M., Hicks, L., Mehr, D., Flesher, M., Petroski, G. F., et al. (2011). Randomized multilevel intervention to improve outcomes of residents in nursing homes in need of improvement. *Journal of the American Medical Directors Association*, in press. doi:10.1016/j.jamda.2011.06.012
- RE-AIM.org. (2011a). *RE-AIM Planning Tool*. Retrieved September 15, 2011, from <http://cancercontrol.cancer.gov/IS/reaim/pdf/PlanningTool.pdf>
- RE-AIM.org. (2011b). *What is RE-AIM?* Retrieved September 15, 2011, from <http://cancercontrol.cancer.gov/IS/reaim/whatisre-aim.html>
- Resnick, B., Quinn, C., & Baxter, S. (2004). Testing the feasibility of implementation of clinical practice guidelines in long-term care facilities. *Journal of the American Medical Directors Association*, 5, 1–8. doi:10.1016/S1525-8610(04)70037-7
- Rogers, E. (2003). *Diffusion of innovations* (5th ed.). New York: Free Press.
- Rowe, A. K., de Savigny, D., Lanata, C. F., & Victora, C. G. (2005). How can we achieve and maintain high-quality performance of health workers in low-resource settings. *The Lancet*, 366, 1026–1035. doi:10.1016/S0140-6736(05)67028-6
- Saliba, D. (2008). *The MDS 3.0: Special Open Door Forum, January 24, 2008*. Washington, DC: Centers for Medicare and Medicaid Services.
- Schnelle, J. F. (1990). Treatment of urinary incontinence in nursing home patients by prompted voiding. *Journal of the American Geriatrics Society*, 38, 356–360.
- Schnelle, J. F., Cadogan, M. P., Yoshii, J., Al-Samarrai, N., Osterweil, D., Bates-Jensen, B., et al. (2003). The Minimum Data Set urinary incontinence quality indicators: Do they reflect differences in care processes related to incontinence? *Medical Care*, 41, 909–922. doi:10.1097/00005650-200308000-00005
- Schnelle, J. F., McNees, P., Crooks, V., & Ouslander, J. G. (1995). The use of a computer-based model to implement an incontinence management program. *The Gerontologist*, 35, 656–665.

- Schnelle, J. F., Ouslander, J. G., & Cruise, P. A. (1997). Policy without technology: A barrier to improving nursing home care. *The Gerontologist*, 37, 527–532. doi:10.1093/geront/37.4.527
- Senge, P., Kleiner, A., Roberts, C., Ross, R., Roth, G., & Smith, B. (1999). *The dance of change: The challenges to sustaining momentum in learning organizations*. New York: Doubleday.
- Shojania, K. G., & Grimshaw, J. M. (2005). Evidence-based quality improvement: The state of the science. *Health Affairs*, 24, 138–150. doi:10.1377/hlthaff.24.1.138
- Simmons, S. F., Garcia, E. T., Cadogan, M. P., Al-Samarrai, N., Levy-Storms, L., Osterweil, D., et al. (2003). The Minimum Data Set weight loss quality indicator: Does it reflect differences in care processes related to weight loss? *Journal of the American Geriatrics Society*, 51, 1410–1418. doi:10.1046/j.1532-5415.2003.51459.x
- Simmons, S. F., Keeler, E., Xiaohui, Z. M., Hickey, K. A., Sato, H. W., & Schnelle, J. F. (2008). Prevention of unintentional weight loss in nursing home residents: A controlled trial of feeding assistance. *Journal of the American Geriatrics Society*, 56, 1466–1473. doi:10.1111/j.1532-5415.2008.01801.x
- Thakur, M., & Blazer, D. G. (2008). Depression in long-term care. *Journal of the American Medical Directors Association*, 9, 82–87. doi:10.1016/j.jamda.2007.09.007
- Titler, M. G. (2008). The evidence for evidence-based practice implementation. In R. G. Hughes (Ed.), *Patient Safety and Quality: An Evidence-Based Handbook for Nurses: Vol. 1*. (AHRQ Publication No. 08–0043). Rockville, MD: Agency for Healthcare Research and Quality. Retrieved September 15, 2011, from [http://www.ahrq.gov/qual/nursesfdbk/docs/TitlerM\\_EEBPI.pdf](http://www.ahrq.gov/qual/nursesfdbk/docs/TitlerM_EEBPI.pdf)
- Watson, N. M., Brink, C. A., Zimmer, J. G., & Mayer, R. D. (2003). Use of the Agency for Health Care Policy and Research Urinary Incontinence Guideline in nursing homes. *Journal of the American Geriatrics Society*, 51, 1779–1786. doi:10.1046/j.1532-5415.2003.51564.x
- Wiener, J. M. (2003). An assessment of strategies for improving quality of care in nursing homes. *The Gerontologist*, 43, 19–27. doi:10.1093/geront/43.suppl\_2.19
- Wipke-Tevis, D. D., Williams, D. A., Rantz, M. J., Popejoy, L. L., Madsen, R. W., Petroski, G. F., et al. (2004). Nursing home quality and pressure ulcer prevention and management practices. *Journal of the American Geriatrics Society*, 54, 583–588. doi:10.1111/j.1532-5415.2004.52166.x
- Yuan, C. T., Nembhard, A., Stern, F., Brush, J. E., Krumholz, H. M., & Bradley, E. H. (2010). *Blueprint for the dissemination of evidence-based practices in health care*. New York: Commonwealth Fund.
- Zurovac, D., Sudoi, R. K., Akhwale, W. S., Ndiritu, M., Hamer, D. H., Rowe, A. K., et al. (2011). The effect of mobile phone text-message reminders on Kenyan health workers' adherence to malaria treatment guidelines: A cluster randomised trial. *The Lancet*, 378, 795–803. doi:10.1016/S0140-6736(11)60783-6