Quality measurement and nursing homes: measuring what matters

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The USA has measured the quality of care delivered in nursing homes for decades.[1] While these efforts represent important steps towards a more transparent and accountable health system, specific successes of these measurement efforts are more difficult to pinpoint. One consistent message from the many studies that have examined nursing home quality is that our quality measures do not always measure what matters. In this issue of *BMJ Quality & Safety*, Xu and colleagues[2] provide more evidence of the weak and unpredictable relationship between nursing home quality measures and an important patient outcome that does matter—hospitalisation. Using an expanded set of quality measures collected in Minnesota nursing homes, the authors find that the 23 metrics they examine showed neither strong nor consistent associations with risk of hospitalisation in a population of Medicaid residents—neither the overall rate of hospitalisation nor potentially preventable hospitalisations.[2] Further, while some associations were expected (eg, nursing homes with lower usage of urinary catheters had fewer hospitalisations for urinary tract infections), some were not. For instance, more antipsychotic treatment was associated with less hospital use, while 'improving bladder continence' was associated with more hospitalisations.

This timely evaluation by Xu *et al* occurs in the context of an important ongoing national debate about the value of quality measurement.[3] On one hand, investments in electronic medical records and the rise of big data have accelerated the development of quality measures (which some have labelled the 'quality measurement industrial complex'),[3 4] meaning more can be measured than ever before. On the other hand, little evidence demonstrates that these measurement efforts have mattered. Accumulating research suggests that tying quality measures to payment (shifting from volume to 'value' or quality) has so far resulted in disappointingly small improvements in patient outcomes and costs.[5–9]

How can we move to measuring what matters in nursing homes? One approach, taken by the American College of Physicians (ACP), is to systematically evaluate current quality measures and decide whether they are worth measuring.[10] The ACP assessed 'validity' (the degree to which the measure captured what it aimed to measure and adequately distinguished good and poor quality) using five domains: clinical importance/impact, use in detecting overuse or underuse of care, strength of the supporting evidence base, technical issues, such as measurement reliability and the adequacy of risk adjustment, and finally the feasibility and applicability (to the provider being measured). As an example, the ACP reviewed clinical quality measures for physician participation in the new Merit-based Incentive Payment System/Quality Payment Program. This approach found roughly one-third of metrics relevant to general internal medicine were valid, one-third were not valid and one-third had uncertain validity. A review like this may be a useful first step to 'weed out' metrics that do not meet reasonable criteria for validity before adding new measures. The study by Xu and colleagues exemplifies the type of evidence that could inform such assessments because it increases our understanding of how tightly linked individual process measures are to outcomes that matter to patients or clinicians.

Another approach might be to emphasise the use of outcome measures over process measures. The Centers for Medicare and Medicaid Services Nursing Home Compare website's star-rating system for individual nursing homes are calculated using three aspects of quality:

process measures (like those examined by Xu *et al*), nurse staffing (a structural measure) and inspections (focused largely on processes of care). These ratings have been critiqued because the overall star ratings are poorly correlated with outcomes such as hospitalisations, emergency department visits, patient satisfaction and rates of return to the community.[11–15] However, recent legislation has broadened quality reporting to include outcomes, and Nursing Home Compare now also includes nursing homes' rates of 30-day rehospitalisation, emergency department visits and return of residents in that facility to the community. While rebalancing of Nursing Home Compare to include robust outcome measures is welcome, a useful next step would be to incorporate these outcomes into the overall star ratings on Nursing Home Compare. Additional outcome measures could also be included, such as quality of life, which is often paramount for nursing home residents but is not typically measured. Though data on quality of life remain difficult and expensive to collect, novel methods for collecting and integrating patient-reported outcomes into care plans are being explored in other settings and may hold promise.[16]

There is much to be gained from improving quality measurement in nursing homes for its own sake. First, more informative and meaningful measures would more effectively enable consumers to choose high-performing facilities. This could help to address the significant need for more informed decisions at hospital discharge, when patients and clinicians are choosing among nursing home options for postacute care.[17–20] Second, as health systems are increasingly held accountable for the quality and costs of postacute care and seek to build partnerships with preferred nursing home providers,[21 22] more robust measurement and public reporting of outcomes (such as those now reported on Nursing Home Compare) could help hospitals form effective partnerships with high-quality nursing homes.

However, making measurement matter requires commensurate investment in quality improvement for nursing home care.[23 24] Measurement on its own can inform prospective nursing home residents and their families. But, ultimately, we want quality measures to stimulate improvement. Achieving such improvements requires investment. To quote a recent perspective, "Health care systems that have achieved substantial and sustained improvements in health care quality have devoted time, people, and resources to creating more reliable systems".[25] Nursing homes face broad resource challenges. The average operating margin for nursing homes in the USA was zero in 2017.[26] Investment in home-based and community-based alternatives to long-term care is decreasing the long-term care population,[27] while use of nursing home-based postacute care is waning under alternative payment models. The nursing home care that remains is increasingly targeted for financial penalties related to outcomes (such as readmission rates) in new value-based purchasing programmes.[28 29]

This relative lack of resources poses a threat to effective quality improvement no matter how much quality measurement improves. For example, a recent trial of INTERACT, an intervention designed to reduce hospitalisations of nursing home residents, showed no apparent benefit.[30] The authors contend this null result could reflect the challenges of implementing a complex, resource-intensive intervention in the nursing home setting, something noted in pre-trial studies where drop-out of nursing homes was a concern.[31] A subsequent per-protocol analysis found that nursing homes able to implement the intervention saw reductions in hospitalisations, but only a minority were able to do so.[32] Enlisting external support to assist nursing homes with quality improvement—such as that funded by the Centers for Medicare and Medicaid Services through the Quality Improvement Organizations (QIO) programme—may be helpful, though evaluation of the effect of QIOs remains surprisingly limited.[33 34]

Some interventions have achieved greater success in decreasing hospital utilisation among nursing home residents—interventions characterised by their investment in providing direct clinical care to nursing home residents. For example, the Initiative to Reduce Avoidable Hospitalizations among Nursing Facility Residents found the most effective model for reducing hospitalisations was to increase direct care provision by nurses and/or nurse practitioners.[35] Similarly, bringing hospital-based personnel (physicians, nurse practitioners and pharmacists) to 'preferred' nursing home partners reduced readmissions.[36 37] Given their cost, these approaches may not be sustainable[38] and ongoing work in Phase 2 of the Initiative to Reduce Hospitalizations as well as new nursing home value-based purchasing will provide important insights into alternative methods to invest in quality improvement.[28 29 39]

Much has been written about quality measurement in nursing homes over the years.[1 40–42] While the issues have remained strikingly similar over time, their implications have never been more important for the postacute and long-term care of older adults in the USA and most high-income countries. Preparing for the large influx of patients who will need long-term services and supports in the coming decades requires measuring what matters, and then making that measurement matter through investment in quality improvement.

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