REDUCING HOSPITALIZATION & COST IN HOME HEALTHCARE
A REVIEW OF ADVOCATE 2.0

Featuring :: Jamie Partridge, PhD, MBA

TRANSCRIPT

Maura: OK we’re streaming. Hi, I’m Maura Bowen, podcasting for Abbott Nutrition Health Institute. I’m here today with Jamie Partridge, PhD, MBA, Abbott’s Director of Global Health Economics, Outcomes Research and Health Policy. We’re talking about a nutrition focused quality improvement program Jamie and a group of her peers recently conducted in partnership with an Illinois-based home health agency, and how the program influenced hospitalization rates and healthcare resources at the facility. Jamie are you ready for this?

Dr Partridge: I am! I’m really happy to be here with you.

Maura: All right! We're happy you’re with us.

Maura: Let’s start at the beginning by talking about what a quality improvement program is.

Dr Partridge: Well, quality improvement (QI) in healthcare really consists of systematic and continuous actions that lead to measurable improvement in healthcare services and the health status of targeted groups of patients. So, I think QI has been around a long time. And even now, QI in healthcare is something where you want to have process improvement where you see the process improved and then patient outcomes and patients’ satisfaction improves.

Maura: Breaking that down a bit, what are some examples of the types of systematic actions a quality improvement program in healthcare might include?

Dr Partridge: Well one of the examples I can use from back when I worked in the vascular health space is “door-to-balloon time.” A lot of times, hospitals were looking at metrics, and that’s a very classic metric now of trying to get patients quickly if they’re going to need to be stunted—looking at the door-to-balloon time so that they’re getting stunted quickly, and that has been shown to have better patient outcomes when that happens.

Maura: Before you and your colleagues conducted your study, what had been the emerging evidence on the effects of quality improvement programs?

Dr Partridge: Really, quality improvement programs have been around for decades. Back in the 90s, when I worked at Ford Motor Company, we were using QI techniques all the time on the production floor. Later, when I taught operations management at a variety of universities, there was more of an increasing emerging literature to take what was done in the manufacturing plant into the service sector—including healthcare—to utilize these QI techniques to really make improvements in processes that would then improve outcomes. It really goes back to the Edward Deming’s quality mantra of this “Plan, Do, Check, Act” in continuous improvement.

Maura: What does that mean in the context of healthcare in nutrition-focused quality improvement programs?

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Well one of the big initiatives now that we’re seeing is the Malnutrition Quality Improvement Initiative (MQii), and that really looks at four measures—they’re electronic clinical quality measures (eCQM)—that are process improvements and can lead to better outcomes. An example might be of an eCQM that we’re looking at: a malnutrition diagnosis or a care plan. And we've actually had data—one publication about a year and a half ago in JAN [Journal of Advanced Nursing], a reputable journal, that Heidi Silver from Vanderbilt published—and they did the MQii toolkit, and they showed for example a reduction in length of stay. That would be an example where process improvement led to better patient outcomes.

Maura: Let’s talk about your study. What prompted the quality improvement program on reducing hospitalizations and costs in home health agencies?

Dr Partridge: Well, we had done several nutrition-focused QI studies in acute care here at Abbott with different healthcare partners. We did one with Advocate previously in the acute care study and found great outcomes such as: length of stay reduction, 30-day readmission reduction, and cost reduction. We had also done some retrospective studies with some institutions such as Akron General, which is now part of Cleveland Clinic, and Catholic Health Initiatives, both of which were published in The Journal of Nursing Care Quality, that also looked at QI work in the nutrition space in acute care settings and found really great outcomes like we did with Advocate in terms of length of stay reduction, readmission rate reduction, etc. What we didn’t know is once patients transition from the hospital to home could such a program outside of the hospital really build upon the impressive results we found in the hospital, and we weren’t going about this blindly.

Dr Partridge: There was some really good data in home health previously. [For instance] Bayada Home Healthcare, which is one of the top 10 largest home health chains in the United States. We worked with Michael Johnson, who is a practice leader in home health there. And actually, we brought him to a New York Academy of Science Symposium that Abbott sponsored about five years ago. He talked about the study they did with Bayada that had nearly thirteen hundred patients and seven offices throughout the U.S. It was six months of screening and intervening. They found that about one out of four patients were at risk for poor nutrition and that about half of them got some sort of oral nutritional supplement sample or intervention, and three fourths of them were educated on nutrition. They found a trend in lower all-cause hospitalization rates for patients at risk for malnutrition. We knew about the great work that Bayada did. And that really prompted us to think about looking at doing a study in the home healthcare setting.

Maura: It sounds like relationships are important in this space. How did you determine who to partner with in this study?

Dr Partridge: Well we had really great luck and we had really great people that we worked with at Advocate in the past, so we went to them. And our relationship with advocate healthcare, which is now Advocate Aurora Health, really was years in the making. I've been in this role at Abbott Nutrition for seven years. And when I came here we had a really great working relationship with a dietitian at Advocate, Gretchen Vanderbosch. We had also worked with Katie Riley, who’s currently the VP and a clinical nursing officer in post-acute care. And we've talked to them about doing a QI program—either acute care or home health—and at the time we kind of decided to do the acute care piece. We also had really good nutrition champions at Advocate, such as Dr. Krishnan Sriram, who has done a lot of research in nutrition, and we also had big support from their VP of the supply chain at the time, Tom Lubotsky. I think it did matter that we had the great relationships, but really having this empowered dietitian, Gretchen, really championing to do a study and to show what improvement could do, was pretty much key to this.

Maura: Tell us about your patient group.

Dr Partridge: The patient group was fairly diverse. We were looking at adults with any primary diagnosis who were at risk for malnutrition. We either used the malnutrition screening tool (the MST) if they were coming out of the hospital, or we were using the nutritional health screen to assess them. And patients really came from three
different primary places: skilled nursing facilities, acute care, or from their primary care providers’ recommendation. I would say two thirds were from acute care coming out of the hospital, and then 10 to 15 percent were from the skilled nursing facilities, and 10 to 15 percent were from their doctors’ recommendation. The whole sample was about fifteen hundred...over fifteen hundred patients. Now, we did need to screen nearly six thousand patients to get to this, and almost 40 percent of those were at risk for malnutrition. The sample was a bit smaller than that 40 percent because there were some exclusion criteria. The patients as you would think were older—about 80 percent were 65 plus. And the usual suspects for common diagnoses was in this population. So we had heart failure or myocardial infarction, orthopedic patients, COPD patients, pneumonia, diabetes, and oncology. It was a pretty good mix of patients in this group.

**Maura:** What about your control group?

**Dr Partridge:** The control group...I think we did a really good job on this because this is a real-world study, so it's not a randomized clinical trial or where one group gets randomized to Group A and then another is Group B. What we did is a technique where we had both a historical and a concurrent control. So what's a historical control? We took a year’s prior worth of data. From 2016 we took the same two branches of home health that we had used in the study, and we looked at patients that were malnourished or at risk for malnutrition. And we looked at their outcomes—their hospitalization rates—and then compared them to the actual group. We also did concurrent controls that ran at the same time of the study. There were five sites that we could look. We also did a more sophisticated technique called propensity score matching. In the manuscript we report how we did all of these. But I think this is a very robust technique for real world type studies you might do.

**Maura:** Tell us about the research process. What sort of challenges did you face during the study, and what came easier than you expected?

**Dr Partridge:** So I think if I look at a prospective study, enrollment is often a problem. You have kind of a run-in period where you see what's working and what's not. One of the things we realized pretty quickly was we initially only had one branch of a home health agency and we decided within a couple of months that we needed to add a second branch. And I think that really helped. Another thing with enrollment that helped is, initially we had thought we only wanted to have acute care patients and patients from PCP (primary care provider) recommendations, but we decided to add skilled nursing facility patients, which I think is a more believable mix anyway, because you have patients coming from all these settings.

**Maura:** What did the data show?

**Dr Partridge:** Well the data really showed that our primary endpoint was 90-day hospitalization rates. What does that mean? It means either a readmission if you're coming from acute care, or a hospitalization if you're coming from a SNF (a skilled nursing facility) or a primary care provider. We also looked at end points at 30 and 60 days as well. At 30 days, we found a 24.3% [relative] reduction in readmissions. At 60 days, we found a 22.8% [relative] reduction, at 18.3% [relative] reduction at 90 days. Sorry I should say readmission or admission or hospitalization rates. Our primary endpoint was really 90-day, and hospitalizations went down by about 18 percent and we were able to translate this into cost savings of about $2.3 million dollars, or $1,500 per patient. We did this by taking the cost of a typical hospitalization using national data in the costs of other healthcare resource utilization, like an outpatient visit, and that's how we came up with these numbers.

**Maura:** That's amazing. What conclusions can you draw from this data?

**Dr Partridge:** Well I think what I like to do, since you know I'm a health economist...I always like to sit back and look at how we compare Study A to study B. And really, in Advocate 1.0, in the acute care phase, we found a savings of about $3,800 per patient. You might look at this and you say, “Wow that was a lot more than this. We only found $1,500 this. That's like over double. So why is that?
Dr Partridge: When you really dissect it, it makes sense because, in the acute care phase, most of the savings was because of reduction in length of stay. A smaller portion was a readmissions savings. So when I broke it down, of the $3,800 about $3,200 was based on a reduction in length of stay of nearly two days. And then, just under $700 was due to readmissions. So when I take that $700 number and I compare it to $1,500 hundred, what's really surprising is that the order of magnitude here was really big. In other words, we saved over twice as much in Advocate 2.0, and avoided healthcare resource utilization post hospitalization, compared to [Advocate] 1.0. This has avoided hospitalizations and other healthcare resource utilization like PCP visits and things like that.

Dr Partridge: This all makes sense because it shows the power of [offering] nutritionally-compromised patients [faster or more accurate screening for malnutrition; staff and patient education; patient follow-up; and administration of] an oral nutritional supplement for 30 days post discharge. In this protocol, we had patients taking two whatever it was type of drinks that they needed to take per day, and compliance was good. We found about on average patients took 1.1 bottles of ONS [oral nutrition supplements] per day during that 30 days.

Maura: Looking back through the data and your conclusions, why do you think these findings are important?

Dr Partridge: Well I think this study really reinforces the need to [offer faster or more accurate screening for malnutrition or at risk for malnutrition, staff and patient education, patient follow-up, and] oral nutritional supplements (ONS) in the ambulatory care settings. We spend a lot of time and research on looking at acute care. And that's super important; people need it. They have acute conditions when they're in the hospital, and they need to take oral nutritional supplements for a variety of reasons during the hospital. But this really reinforces that as patients take it outside of the hospital, it has an even bigger effect.

Maura: Did the data surprise you in any way?

Dr Partridge: I think what's amazing is that even though Advocate in the acute care space did such a great job getting malnourished and at-risk patients ONS in the hospital, [as well as] faster or more accurate screening for malnutrition; staff and patient education; and patient follow-up, we still saw a further improvement in outcomes in ambulatory care when patients took oral nutrition supplements for 30 days at home. And here's another interesting finding: We did see the most significant impact when we did a sub analysis of patients coming from their primary care provider office, which at first was surprising to us. We're like, “Why is that?” But if you think about it, at least the people in the hospital coming from acute care or skilled nursing facilities probably got some nutrition care at home. I mean sorry: in those institutions. Whereas at home, these patients probably weren't getting great care. So we saw the biggest impact in really avoiding hospitalizations of the patients that were coming from home.

Maura: What makes you feel most hopeful about your research team’s findings?

Dr Partridge: I think what's interesting to me is that a simple solution like providing the proper nutrition to at-risk patients really makes a difference in terms of better clinical and health economic outcomes. I previously worked at another business of Abbott—Abbott Vascular—where I conducted cost effectiveness analysis for stents and other medical devices. We really had great data there showing the cost effectiveness of our devices. But I feel like this is even more compelling, showing that a simple solution like providing nutrition can really make a difference in patients, with very little upfront costs. If you think about it, preventative medicine and population health and all that, is becoming more and more important. We see that for very little upfront cost. It's not like an expensive device or medication. You can really get a lot of outcome on these patients.

Maura: Dr Partridge, thank you so much for your time today. Any parting words for our listeners?

Dr Partridge: Yeah I would say go online and check out the manuscript—Reducing Hospitalizations & Costs: A Home Health Nutrition-Focused Quality Improvement Program—in JPEN (24 June 2019). It just came out a couple of weeks
ago and I think we’re very excited about it. We look forward to doing continual research in other new venues.

Maura: And with that said thank you again so much. This is Maura Bowen and Jamie Partridge signing off for ANHI.

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