

# Case Study: Improving Health Outcomes, Resident Experience and Quality through Data Analytics

PointRight®



leadingage.org/cast

## Categories:

- ◆ Improved Health Outcomes
- ◆ Reduce Hospitalizations
- ◆ Improved Patient / Resident / Client Experience

## About the Organization

### Organization Name:

ArchCare

### Main Contributor:

Mitch Marsh,  
Senior Vice President,  
Residential Services

### Organization Type:

Skilled Nursing Facilities (SNFs)

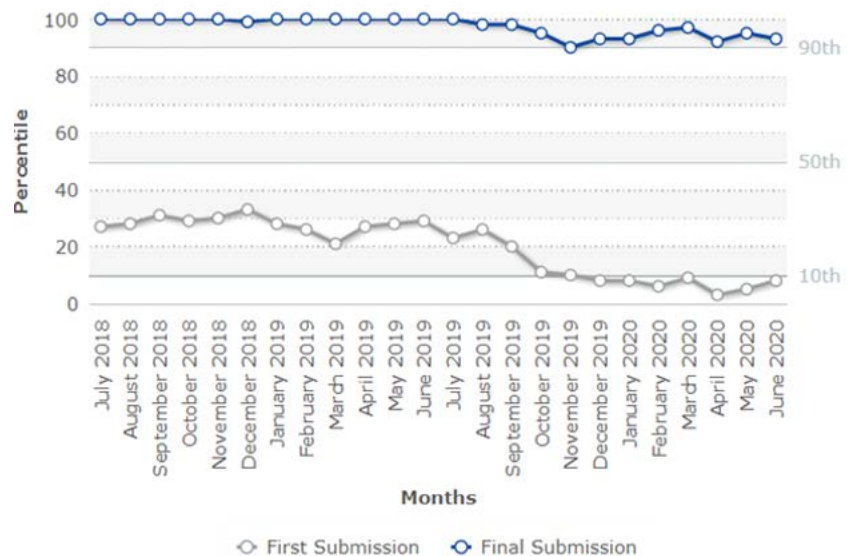
### Organization Description:

ArchCare is the Continuing Care Community of the Archdiocese of New York and one of the nation's largest and most dynamic health-care systems. ArchCare provides quality care to thousands of people of all faiths through its home and community-based and residential care programs, including long-term skilled nursing care, short-term rehabilitation, home care, nursing home alternatives, hospice, assisted living, an acute care specialty hospital and health and social services for people with Huntington's disease, HIV/AIDS, developmental disabilities, and other specialized care needs.

## Project Description

ArchCare's interdisciplinary teams use PointRight's Data Integrity Audit (DIA) as a critical step in their assessment and care planning process to ensure accuracy of the Minimum Dataset (MDS). Consistently achieving the 95th percentile or greater (Figure 1) in MDS data quality, ArchCare has a high degree of confidence in resident- and facility-level analytics based on this data.

Figure 1: ArchCare performance trend summary\*



\* The DIA percentiles provide an indication of 'good' and 'bad' performance with higher percentiles being indicative of a better performance.

ArchCare team members integrated the resident-level analytics in PointRight's RADAR® and PointRight® Pro 30®<sup>[1]</sup> into their practice, resulting in improved short-stay patient and long-stay resident outcomes and reduced rehospitalizations. In addition, they improved their identification of residents who are at end-of-life, which helped them facilitate advance care planning discussions. This has resulted in a better experience for residents who are at the end of life's journey.

Evaluating facility-level outcomes with PointRight's analytics has enabled ArchCare's teams to ensure that their clinical systems and processes are effective, and where necessary, to take action for improvement through their Quality Assurance and Performance Improvement (QAPI) program.

Integrating analytics into operations has empowered ArchCare to further its mission to provide quality care to the frail and vulnerable people they serve and to improve the quality of the lives of those individuals and their families.

## Application area

- ◆ Clinical
- ◆ Quality
- ◆ Value-Based Care

## Core services offered

ArchCare uses the following PointRight analytics products <sup>[1]</sup>:

- 1. Data Integrity Audit (DIA)**  
MDS verification tool to ensure accuracy of MDS assessments prior to CMS submission.
- 2. RADAR®**  
Resident- and population-level care management solution with descriptive and predictive analytics.
- 3. PointRight® Pro 30®**  
Rehospitalization management solution with PointRight's NQF-endorsed measure.
- 4. PointRight Quality Measures**  
Real-time calculation and analysis of CMS and PointRight-proprietary quality measures.

These products offer the following core services: Data Cleansing, Integrity Audits, Data Visualization, Data Exploration, Modelling, Decision Support, and Benchmarking/Scorecard Across Sites/Providers/Markets.

## Business Model

The business model and catalyst for the integration of clinical analytics was driven by internal and external pressures. Internal factors include resident quality of care and quality of life. External factors include the Hospital Readmission Reduction Program, Value-Based Purchasing, ACO and hospital preferred networks, and healthcare consumerism.

## Implementation Approach

ArchCare developed a framework and workflows to integrate analytics into their existing assessment and care planning process. The MDS Director is the “quarter-back of everything,” promoting teamwork and facilitating communication among interdisciplinary team members, who each review DIA feedback and resolve any MDS coding issues that relate to their area of expertise. The team is responsible for integrating RADAR® resident-level analytics into the care planning process to ensure an individualized approach to care.

Using the RADAR® Mortality measure, when a resident is identified to be at the end of life, the team uses this information to trigger a conversation about advance care planning with the resident and their family. This supports the resident and their family in making an informed decision and choices consistent with their wishes and beliefs.

The importance of this practice became clear when the team at one of the facilities was challenged with the care of a resident who had experienced multiple hospitalizations resulting from exacerbations of her chronic conditions. Concerned about the adverse impact of these hospitalizations on her quality of life, the team had recommended to the resident's daughter/healthcare decisionmaker that she consider end-of-life care planning. Despite multiple meetings, conversations between the care team and the daughter were highly emotional and were not beneficial. The daughter continued to request a hospital transfer each time the resident had a deterioration in her condition and accused the team of just wanting to let her mother die. Explaining that they had new information to share, the care team requested yet another meeting with the daughter. She was initially skeptical, but as the team showed and explained the RADAR® information to her, she became more open to an end-of-life care conversation — eventually agreeing that comfort care measures with no further hospitalizations were in her mother's best interest. By framing the conversation around objective, credible analytics, the care team and the resident's daughter achieved alignment in the approach to her care. The resident lived in the facility another nine months, with no more hospitalizations, before passing away there.

Each Friday, residents who are at high risk for hospitalization are identified through RADAR®. An individualized plan is developed for each resident, based on their specific risk factors, to ensure that they are monitored carefully over the weekend.

In collaboration with the MDS Director, Facility Administrators and Directors of Nursing regularly use facility-level analytics to identify areas for performance improvement and set targets. For example, facilities may select two quality measures to work on with increased focus and attention, which could result in even better performance.

On a quarterly basis, representatives from each facility and the ArchCare AVP of Clinical Reimbursement meet with PointRight to review outcomes, identify best practices, and collaborate on performance improvement.

PointRight analytics for key performance outcomes are integrated into multiple levels of reporting within the organization, including quality reports to management and the Board of Directors.

## Outcomes

ArchCare has experienced improved health outcomes, reduced hospitalizations, and improved resident/family experience. In addition, they have ensured that an already-strong referral pipeline from their acute care partners remains robust. Although not a stated objective, ArchCare has also seen an increase in skilled care reimbursement.

## Five-star ratings

ArchCare's five facilities applied PointRight analytics to improve Five-Star Quality Ratings and ensure short-term skilled rehab referrals from key referral sources.

- ◆ ArchCare at Terence Cardinal Cooke Healthcare Center (a 540-bed facility) achieved a 5-Star Quality rating, up from 3 stars, in six months.
- ◆ ArchCare Mary Manning Walsh Nursing Home (a 363-bed facility) moved from a 1-Star Overall to a 2-Star Overall rating within 6 months (by improving their Quality rating from 4 stars to 5), then achieved a 5-Star Overall rating two and a half years later.

Using PointRight's analytics over the past five years, all ArchCare facilities have achieved a 5-Star Overall rating at times. Currently, three facilities have a 5-Star Overall rating, four facilities have a 5-Star Quality rating, and one facility has a 4-Star Quality Rating.

## Quality measures

ArchCare has applied the PointRight Quality Measure (QM) <sup>[1]</sup> product to improve their residents' care. Using the PointRight QM product to inform their clinical practices, ArchCare has reduced the rate of urinary tract infections (UTI) in their facilities (from 2.1% to 1.1% within six months) and has consistently performed better than the national average (2.5%).

Any time a resident MDS triggers the UTI QM, as identified through the PointRight solution, the record is flagged for review by the Chief Clinical Officer (CCO) — prior to completion of the assessment and submission to CMS. The CCO ensures that the MDS is coded correctly related to McGeer criteria and Resident Assessment Instrument (RAI) instructions manual, based on the resident's medical record documentation. If needed, MDS corrections are made to ensure the QM does not trigger in error and adversely affect the facility's CMS UTI QM (which is included in the CMS Five-Star Quality Rating).

## Rehospitalization

PointRight® Pro 30® is the only all-cause, risk adjusted rehospitalization measure validated by Brown University, adopted by the American Health Care Association (AHCA), and endorsed by the National Quality Forum (NQF #2375). In PointRight® Pro 30® the predictive probability at the resident level is used to calculate the expected rate of rehospitalization for every SNF.

At the organizational level there is always room for improvement, but limited resources for making these improvements. In addition to presenting observed, expected and risk-adjusted all-payer and Medicare Fee for Service (FFS) 30-day rehospitalization rates, PointRight® Pro 30® is also provided for specific clinical cohorts like heart failure and diabetes, as well as low, medium, and high-risk group residents.

Figure 2 through Figure 5 provide the ArchCare group performance in terms of rehospitalization (PointRight® Pro 30®) as well as length of stay (LOS) until the residents' return to community. ArchCare has seen a decline in overall rehospitalizations that is mainly driven by successfully treating the low-risk patients in the five facilities.

It is important to note that you need to study your data not only on an aggregate level but also by clinical cohort or subgroups of interest. Simpson's paradox (or Simpson's reversal, Yule–Simpson effect, amalgamation paradox, or reversal paradox) is a phenomenon in probability and statistics, in which a trend appears in several different groups of data but disappears or reverses when these groups are combined. Simpson's paradox describes the misclassification caused by disproportionate variations in (1) the number of observations in a clinical cohort

(e.g., the number of patients in the high-risk category) and (2) the performance within the clinical cohort (e.g., excess rehospitalization within a high-risk group). When a large imbalance between these inputs exists (due to variations in, for example, the number of high-risk patients or coding practices), performance for the aggregate (all patients treated in the facility) can substantially misrepresent actual performance in cohorts of interest (high-risk and low-risk residents). [2]

Figure 2: Median PointRight® Pro 30® adjusted rate and return to community LOS for all-payer residents

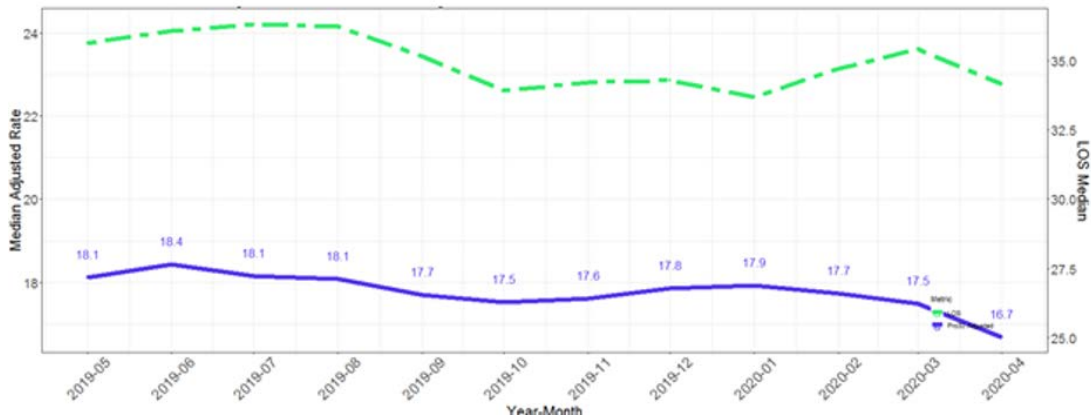


Figure 3: Median PointRight® Pro 30® adjusted rate and return to community LOS for low-risk residents

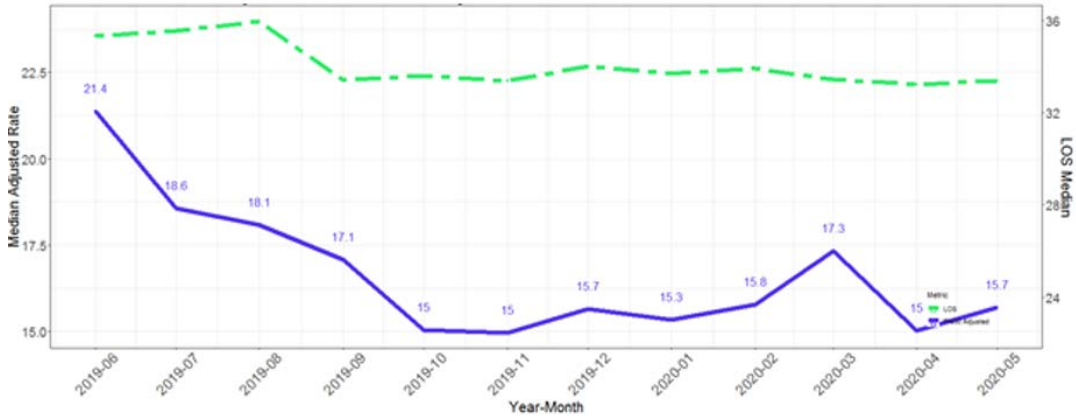


Figure 4: Median PointRight® Pro 30® adjusted rate and return to community LOS for medium-risk residents

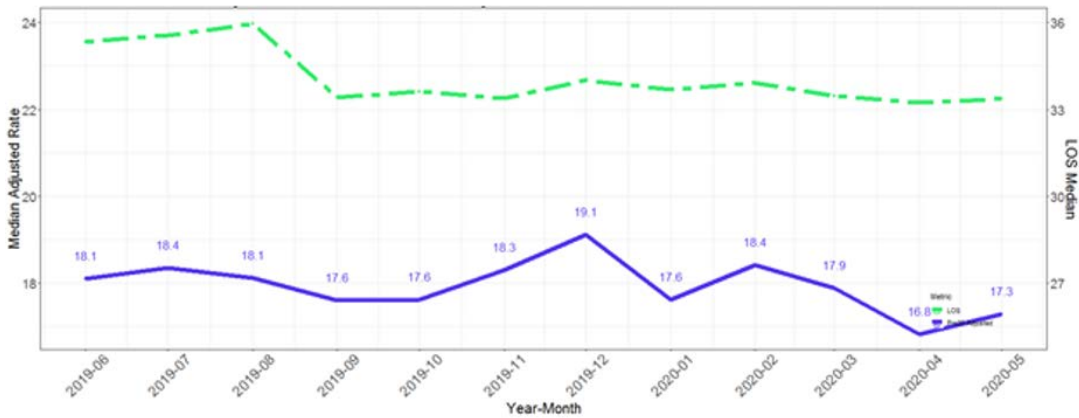
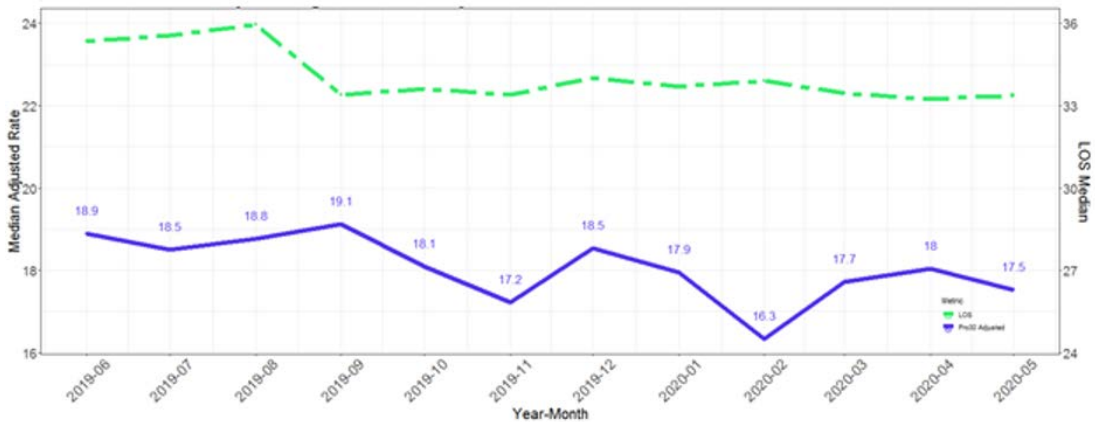


Figure 5: Median PointRight® Pro 30® adjusted rate and return to community LOS for high-risk residents



ArchCare has succeeded in improving the overall rehospitalization rate by focusing on the clinical cohorts and patient populations that had the greatest opportunity for improvement. For example, on Fridays the team identifies the residents at greatest risk for hospitalization using RADAR®. These are the residents that nursing supervisors focus on during their rounds over the weekend, to ensure that they receive the monitoring, assessment, and intervention needed to prevent hospitalization.

### Patient Driven Payment Model (PDPM) insights

DIA use is not only ensuring better data quality but it also drives increases in reimbursement. The ArchCare Group has been seeing a higher average per diem difference than they would have seen had they not used DIA. This is true even after the introduction of the Patient Driven Payment Model (PDPM) in 2019. Moreover, the average per diem difference has been increasing across time under PDPM (Table 1).

**Table 1: Average PDPM per diem difference (pre- and post-DIA)**

Year	Quarter	Number of Assessments	Average Pre-DIA Per Diem	Average Post-DIA Per Diem	Average Per Diem Difference
2019	4	1113	\$ 672.46	\$ 684.11	\$ 11.65
2020	1	1037	\$ 707.83	\$ 721.12	\$ 13.29
2020	2	861	\$ 748.27	\$ 765.55	\$ 17.28*

\* In 2020 Quarter 2, ArchCare averaged 200 skilled patients per day system wide. A difference of \$17.28 in the PDPM Medicare Part A per diem over this time period would have resulted in increased Prospective Payment System (PPS) reimbursement of approximately \$314,496 (without any per diem rate adjustments applied).

## Challenges and Pitfalls to Avoid

1. Getting distracted. There is always something that can distract you and shift your focus away from important issues. Unrelenting challenges and new priorities can take precious time and resources away from what is most important. Keep your focus on the big picture and help your staff prioritize the things that are mission critical.
2. Overlooking areas of excellence. We tend to concentrate on areas where performance is not as good as we would like, but there is more to learn from the areas where performance is strong. Analyze the areas where you are doing the best and apply lessons learned from them to areas where improvement is needed. “Don’t obsess about the failures. Instead, investigate and clone the successes.”
3. Not being realistic. Spend time with your team determining the areas you believe you can impact, given your current performance and the limited time and resources that are the operational reality for everyone. Focus on those.
4. Complacency. Once you have achieved excellence in an area, it’s easy to let it fall off your radar screen. But it is important to monitor these areas so you can intervene quickly if performance starts to slip.
5. Equating value with a dollar amount. Many providers expect a calculated “return on investment,” but the value of implementing analytics is difficult, even next-to-impossible to quantify in dollars all the time. Improved quality outcomes result in far-reaching benefits for residents, families, and staff – as well as operational efficiencies and cost savings. As Mitch Marsh, the SVP of ArchCare Residential Services points out: “Analytics unquestionably improves the quality of what we do in a variety of ways. We know that and we’re not looking for a demonstrable dollar amount.”

## Lessons Learned

1. Act on analytics that are based on accurate data; if inaccurate, data can send you down the wrong path! Do not assume that all your team members know how to code the MDS properly. MDS coding is complex and RAI definitions are not always intuitive. A robust tool to identify coding errors and inconsistencies is essential to ensure data quality and provide a learning effect that improves everyone’s working knowledge with time.
2. Ask the right questions and let the data drive you there. When one of ArchCare’s facilities had a “real-time” UTI quality measure rate that was much higher than their other facilities, despite having very similar resident populations and clinical processes, they asked “why” and looked at the accurate/corrected data until they found the answer. Residents were being triggered on the MDS due to a misunderstanding of MDS coding criteria. They were then able to do corrections and positively impact their rate before CMS calculated and publicly reported it (and before it affected their Five-Star ratings). This demonstrates the importance of analyzing data compared to relevant benchmarks, identifying “outliers,” doing root cause analysis, and acting on the information.
3. Start with the big picture and progressively drill down to make the most impact. For example, if your facility rehospitalization rate is too high, analyze performance by clinical cohort and risk group. Concentrate on the cohorts that are impacting your rate the most and can be addressed with new or revised clinical protocols and staff education. Then identify the residents in those cohorts and focus in on them — with individualized care plan interventions that address their specific risk factors based on resident-level predictive analytics.

## Advice to Share with Others

1. Data can be used as the common language when communicating and collaborating across care settings. When the quality of the data goes up, the group is more likely to adopt it as a “common language.”
2. Act on data, not opinions. Let analytics drive your root cause analysis and guide your actions. At ArchCare, analytics drive almost everything. Following this principle — and using a combination of data and discipline — has been invaluable during the COVID-19 pandemic.
3. Do not be afraid of change. Old models may have worked in the past, but healthcare organizations now have data to help them think differently and effect change.
4. Perfect is the enemy of good. You must start somewhere, so just do it. Trust your teams to know where to start — they know their residents and their facilities, and they will know where there is realistic potential for improvement. Focus on what you do at least fairly well now and build on it.
5. Choose the right analytics and the right analytics partner. Choose the right analytics partner by asking the right questions. Is data analytics a core competency? Is there deep domain expertise in data science? Do you have capabilities beyond transactional and episodic reporting? You need a predictive system built and supported by a team that has deep domain expertise in analytics, statistics, and data science so that they can explain the data, analyses results and support you in making key decisions about the current and future state of your facility. Moreover, the combination of analytics talent, health care expertise and cloud-based technology can help streamline the process of ingesting, researching and working with different highly complex datasets.
6. Do not underestimate the value of a small action. Simultaneously assess for resource gaps while tracking your network’s performance. When possible, share resources, education, expertise, and best practices. Many more people are positively affected when we share our learnings with others.

## References

[1] PointRight Analytics products:

Data Integrity Audit (DIA) audits each MDS for accuracy before submission to CMS and provides feedback from clinical, regulatory, financial, and risk management perspectives. Each MDS is checked for logical and clinical coding accuracy with recommended actions when inaccurate, incomplete, or inconsistent information

is identified. DIA views each assessment the same way a surveyor or government auditor would and provides immediate feedback to resolve identified issues.

For more information see: <https://pointright.com/products/data-integrity-audit-dia/>

RADAR® is a care management tool with resident-level descriptive and predictive analytics that identify risk for adverse events (Falls, Pressure Ulcers, Hospitalization, Mortality, Return to SNF), levels of impairment (ADL, Cognition, Mood, Pain), and discharge complexity. RADAR® includes MDS-related details for resident care planning as well as trending views of metrics over time. In addition to providing a risk score at the patient level, identify specific factors contributing to the risk. By addressing modifiable risk factors through effective care planning, risk can be managed, and adverse events can be avoided to improve patient outcomes. Use RADAR® to coordinate care and prepare for safe discharge to the community for short-stay patients and to guide care plan interventions for long-stay residents.

For more information see: <https://pointright.com/products/radar-care-management-tool/>

PointRight® Pro 30® is the only all-cause, risk adjusted rehospitalization measure validated by Brown University, adopted by the American Health Care Association (AHCA), and endorsed by the National Quality Forum (NQF #2375). In the PointRight® Pro 30® the predictive probability at the patient level is used to calculate the expected rate of rehospitalization for every SNF.

For more information see: <https://pointright.com/products/pro-30-rehospitalization/>

PointRight Quality Measures: PointRight delivers a robust QM toolkit that enables you to measure, monitor, and manage QM outcomes, while also providing comprehensive QM reporting to various stakeholders across the long-term, post-acute care continuum. This QM toolkit includes proprietary, MDS-based, real-time measures, including Short-Stay Pain, Long-Stay Pain, and the NQF-endorsed PointRight® Pro Long Stay™ [NQF #2827].

For more information see: <https://pointright.com/products/quality-measures/>

[2] Marang-van de Mheen, P.J. & Shojanian, K.G.

“Simpson’s paradox: how performance measurement can fail even with perfect risk adjustment.” *BMJ Quality & Safety*. 2014; 23: 701-705.