

HARNESSING HEALTHCARE DATA



THE VALUE OF
HEALTHCARE DATA
THROUGH A
PATIENT'S JOURNEY

Medtronic

Medicine and medical science are essential to supporting each patient in their unique healthcare journey. However, certain healthcare pathways — such as those that require time-consuming treatments — can be risky and costly. This is when data can provide imperative insights.

Thanks to technology growth and robust information ecosystems, data science is now key to helping providers make the best decisions for their patients while efficiently using time and resources. This provides value from both a quality-of-care and cost perspective.

This value has never been more important, as high costs and poor outcomes continue to plague the United States healthcare system. Healthcare spending per capita in the U.S. is greater than any other nation.¹ At \$4 trillion annually, U.S. healthcare spending is the highest in the world,² yet it produces poor health outcomes — lagging almost all developed nations in key healthcare outcomes such as life expectancy and infant mortality.³

Data science has the potential to positively influence these numbers. By using remote patient monitoring programs to gather timely patient data, compile trends, identify outliers, and compare it to population data, providers can access important insights that enable them to customize treatment plans and provide the right care at the right time.

\$4 TRILLION
ANNUAL U.S.
HEALTHCARE
SPENDING

To realize the potential of healthcare data science and the value it brings to both the patient and provider, let's look at a representative patient and the data touchpoints along the patient journey that inform her care, starting with payer-provided data.

▶ STEP 1: DATA TRANSFER

The payer — such as the insurance company — agrees to provide key healthcare data for Kate to Medtronic Care Management Services.

Examples of helpful healthcare data:

- Medical claims
- Pharmacy claims
- Patient eligibility for health plan
- Demographic insights
- Provider information

Kate's medical history and healthcare data can now be analyzed.

▶ STEP 2: RISK SCORING AND RANKING

Algorithms are applied to her patient data to provide insights on her probability for healthcare utilization and hospitalization risk, ranking these values relative to other patients with similar risk factors. This analysis also indicates whether Kate might benefit from certain healthcare pathways.



*"Hello, I'm Kate!
I'm 65 years old, retired
and love to stay active,
especially when that
means playing outside
with my grandchildren."*

KATE'S MEDICAL HISTORY:

- Anxiety
- Breast cancer with mastectomy in remission
- Chemotherapy-induced cardiotoxicity resulting in heart failure

KATE'S EXPERIENCE:

Kate's data shows she is a good match for a heart failure disease management program and she could benefit from remote patient monitoring.

STEP 3: HOME HEALTH MONITORING AND ONGOING DATA TRANSFER

A patient must agree to use and follow a remote patient monitoring program for it to provide optimum benefit. Education provided within the program supports patient engagement by encouraging the patient to provide a regular flow of valuable data to inform healthcare teams.

A remote patient monitoring platform is typically used to gather a variety of personal health information determined by a patient's healthcare team. This data is made available through a patient's routine interaction with the platform and may include symptom surveys and metric reporting.

Routine data provided may include:

- Blood pressure
- Glucose readings
- Oxygen levels
- Weight
- Condition or disease symptoms

The patient may also speak with an RN to discuss other health considerations, such as exercise, nutrition, and medication. Condition-specific symptoms are also gathered and reported, which provide timely insight into the patient's health.

All this information allows healthcare teams to note trends and red flags quickly and respond appropriately, making early intervention easier.



KATE'S EXPERIENCE:

Kate received a letter in the mail and then a phone call to explain remote patient monitoring for her heart failure. She also spoke with her doctor about the program and then decided to enroll.

Next, through the enrollment process, she learned about why she was selected for the program and how it can help her as well as how it works — including hardware and software components — so she felt familiar and comfortable interacting with the platform when it arrived.

She now uses a remote patient monitoring platform at home to transmit symptoms, weight, and blood pressure. She feels connected to her healthcare team and enjoys the educational insights that the program provides about her health and well-being.

STEP 4: CLINICIAN REVIEW AND INTERVENTION

Medtronic Care Management Services offers two options for customers: clinical monitoring software plus nurse monitoring, or software only with monitoring being the responsibility of the customer. With a wealth of data and regular insights into a patient's health, providers have ample information to make informed decisions, no matter which option is selected.

How does this work? The software turns routine patient information into actionable data, providing healthcare teams with the information needed to make informed decisions. This includes reporting, alerts, and trend insights. Essentially, it allows providers to lift the veil on patient healthcare and access the information they need to potentially intervene earlier.

VALUABLE INSIGHT BETWEEN APPOINTMENTS

If a patient sees their physician regularly — such as every 12 weeks — remote patient monitoring can help the provider identify potential problems sooner rather than waiting for the next in-person visit.



KATE'S EXPERIENCE:

The symptom and routine data she provided on her remote patient monitoring platform identified concerns regarding her heart condition. A nurse reached out to her through a phone call and discovered she wasn't taking her heart failure medication as prescribed.

During the call, Kate's nurse learned she had anxiety about the side effects of the prescription and mistrust based on a recent drug recall. These were the main reasons why she was hesitant to take her medication.

Her nurses knew this put her at risk for an acute heart condition, so they decided to take action. Some examples of what her nurse could do is provide personalized education to Kate or escalate the issue to her prescriber to discuss alternatives.



RESULT:

Kate's anxiety about her heart failure medication was a major hurdle in her care continuum. The data helped her healthcare team determine the problem and necessary interventions. Ultimately, she didn't need more drugs or a specific procedure: she needed education and to build trust about her medication program.

In the case of Kate, the value of data was two-fold: she received important counseling from a nurse that helped her feel heard and understood, plus she ultimately learned the importance of taking a potentially life-saving medication as prescribed. She decided to take her medication daily and her condition stabilized.

WHAT COULD HAVE HAPPENED:

Without the insight that Kate wasn't taking her medication regularly and finding a way to calm her anxiety, her heart condition could have worsened. Thanks to data insights and quick action, this representative patient received the appropriate intervention at the appropriate time, avoiding potentially dangerous and costly events, and therefore can continue to live a high-quality life.



CONCLUSION: HEALTHCARE DATA PROVIDES VALUE

At Medtronic, we define healthcare value as healthcare outcomes achieved, that matter to patients, relative to the cost of achieving those outcomes.^{4,5} This means affordable, personalized, high-quality care that results in a patient's health stabilizing or improving.

Access to meaningful data that facilitates early intervention helps prevent potentially unnecessary and costly pathways such as ER visits, hospital admissions, and ICU stays. However, the goal of remote patient monitoring and data analysis is not to keep patients out of the hospital or clinic. The goal is appropriate utilization of healthcare.

In conclusion, Medtronic Care Management Services' remote monitoring programs use data to improve the lives of patients while minimizing risk and costs.⁶ This approach is designed to help the patient get the right care at the right time, enabling earlier intervention and a proactive approach. This provides value because it helps save money, provides a higher quality of care, and enables healthcare organizations to achieve appropriate utilization.⁶

THE GOAL OF
REMOTE PATIENT
MONITORING IS
**APPROPRIATE
UTILIZATION OF
HEALTHCARE**

AUTHORS

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Molly joined Medtronic Care Management Services in 2019 as Senior Training & Education Specialist and brings her knowledge of education and clinical topics to provide effective training materials to Medtronic Care Management Services employees and customers. Prior to Medtronic Care Management Services, Molly has worked as a bedside nurse in adult intensive care units, as a nurse educator for undergraduate nursing students, and for a national nursing nonprofit organization whose mission is to provide resources and continuing education for nursing professors.

References

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² <https://www.advisory.com/daily-briefing/2020/04/03/health-spending>

³ From "The Value Journey of Healthcare Data" PPT presentation (Source: OECD (2017), Health at a Glance 2017: OECD Indicators, OECD Publishing, Paris, https://doi.org/10.1787/health_glance-2017-en. (Accessed on 29 August 2019)).

⁴ <https://www.medtronic.com/me-en/transforming-healthcare/perspectives-insights-series/jason-arora-value-based-healthcare-global-evolution-three-international-efforts-to-find-common-ground.html>

⁵ <https://hbr.org/2013/10/the-strategy-that-will-fix-health-care>

⁶ Five Reasons You Should Use Remote Patient Monitoring to Manage Patient Health and Recovery, <https://www.medtronic.com/us-en/healthcare-professionals/services/medtronic-care-management-services/resources-results/articles-case-studies/population-health.html>.

All patient data are representative and for illustration purposes only. Patient portrayed by a model.



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