✦NavigatingCancer

# Minimizing Hospitalizations for Cancer Patients

Modern science has profoundly altered the course of managing advanced disease. People live longer today than at any other time in history, but also spend more time in the hospital during and at the end of life.[1]

Cancer patients tend to experience unpredictable and complex medical needs that, in some instances, can only be managed through in-patient services. However, there are significant variations in rates of hospital admissions for cancer patients across institutions and regions, and these don't correlate with better health outcomes.[2] This means that some of these hospitalizations are avoidable.

## ⊞ The Toll of Unnecessary Hospitalizations

Hospitalizations are a costly expense for our healthcare system, and carry an emotional toll for cancer patients and their loved ones that cannot be calculated. The Agency for Healthcare Research and Quality (AHRQ) estimates that direct medical costs for cancer patient hospital stays in the U.S. were in excess of $30 billion in 2011.[3]

Today, healthcare costs are at an all-time high and expensive cancer therapies continue to come to market. The total annual cost of cancer care in the U.S. is projected to reach $175 billion by 2020, if our current trajectory holds.[4]

More importantly, unnecessary hospitalizations don't just fail to improve health outcomes, they can introduce treatment disruptions that make outcomes worse. For example, one recent study in cancer patients hospitalized at a single large academic medical center found 19% of those hospitalizations to be "potentially avoidable", and survival after these hospitalizations was markedly decreased relative to survival after hospitalizations that were unavoidable (90-day mortality rate of 66% vs 34%, respectively).[5]

Cancer patients on medications that can lead to serious side effects are not served particularly well by today's fee-for-service reimbursement model, in which providers are paid for seeing these patients face-to-face and are not paid for the many care coordination services that need to be performed between visits. When patients don't receive the care coordination support they need, avoidable hospitalizations

1    Gawande, Atul (2014) Being Mortal. Medicine and What Matters in the End. Metropolitan Books/Henry Holt and Company.
2    Morden NE, Chang CH...& Goodman DC (2012) "End-of-Life Care for Medicare Beneficiaries with Cancer is Highly Intensive Overall and Varies Widely" *Health Affairs*, vol 31(4)
3    ACS Cancer Facts and Figures 2015
4    March 11th, 2014: "First comprehensive report on U.S. cancer care finds patient access threatened by growing demand, physician shortages, struggling small physician practices" www.asco.org
5    Brooks GA, Abrms TA...& Schrag, D (2014) "Identification of Potentially Avoidable Hospitalizations in Patients With GI Cancer" *J Clin Oncol*, vol 32(6)

and emergency room visits become all too common. But as healthcare moves to bundled payments and cancer programs are reimbursed at a fixed price for defined episodes of care, the call to eliminate unnecessary hospitalizations and emergency room visits will only grow louder.

## The Promise of New Payment Models

The good news is that a growing number of new payment reform models are accelerating the transformation in oncology towards a more proactive, better-coordinated, patient-focused model of care. These payment models, such as the CMS initiatives under the 2010 Patient Protection and Affordable Care Act (ACA) and Chronic Care Management CPT code 99490, are not only penalizing hospitals that see too many patients readmitted too soon but also provide incentives for spending more time on non-face-to-face care coordination services.

In fact, many of the new payment models are engineered to reimburse providers for more proactive care management and measure excessive hospitalizations as a mark of poor cancer care quality. Among these are the Oncology Care Model from the Center for Medicare & Medicaid Innovation (CMMI) and the Physician Quality Reporting System (PQRS), developed by the National Quality Forum and slated to be rolled up into the Merit-Based Incentive Payment System (MIPS).

Oncology medical home programs, such as the Come Home project that started in 2012[6] and the recent collaboration between the Moffitt Cancer Center and Aetna[7], are also focused on minimizing hospitalizations and emergency room visits for cancer patients.

## The Success of Care Management and Patient Navigation Pilots

Pilots based on value-focused care management models are starting to yield positive results. One example from UnitedHealthcare aligned financial incentives with quality of cancer care by replacing fee-for-service payments for physician hospital care, hospice management and case management with a single, episode-based payment at a patient's initial visit. The result was a significant reduction in the cost of cancer care (~$40,000 per chemotherapy patient), which included a decrease in hospitalizations.[8]

Out of the five medical oncology groups that participated in the UnitedHealthcare pilot, one was an outlier for hospitalization rates. It was discovered that follow-up appointments at this group's clinic were scheduled for several weeks after a patient's initial hospital discharge, causing frequent readmissions for the same problem. The group changed their care management practice to proactively evaluate patients within 48 hours of discharge and their hospitalization rates decreased to peer levels. [8]

6    Mcaneny, BA (2012) "Come Home: A Medicare Innovation Center Project" www.cancernetwork.com
7    Apr 16,2015: "Aetna, Moffitt Cancer Center Form Oncology Medical Home" https://news.aetna.com
8    Newcomer, LN, Gould, B...Perkins, M. (2014) "Changing Physician Incentives for Affordable, Quality Cancer Care: Results of an Episode Payment Model" *J Oncol Pract,* vol 10

In another success, the "Patient Care Connect Program" at the University of Alabama at Birmingham (UAB) showed when patients get the attention they need from diagnosis to survivorship, and understand how to engage in better self-management and decision-making, they will become more actively engaged in their cancer care.[9] This $15 million pilot employed 40 nonclinical lay navigators to help cancer patients overcome barriers to care, such as transportation or scheduling challenges, or how to recognize clinical symptoms. Researchers examined outcomes for 30,589 Medicare patients paired with a UAB lay navigator and receiving cancer care from January 1, 2012 through December 31, 2014.[10] Among promising results of this pilot program was an 18% decrease in hospitalizations in the navigated patient population.

## How to Scale these Findings to Deliver Better Care to More Cancer Patients

While promising, programs like UAB's Patient Care Connect are difficult to scale to the level needed to impact our growing population of cancer patients. Over half of the people who are currently adults under the age of 65 will be diagnosed with cancer at some point in their lifetime.[11] By 2025, the incidence of cancer in the U.S. is expected to grow by 42%. In the same time span, the supply of oncologists in the U.S. is expected to grow by only 28%. Even now, one fifth of Americans live in rural areas but only one thirty-third of oncologists practice in rural areas.[12]

From the perspective of cancer programs, transforming clinic workflow to meet the requirements of these new payment models while caring for growing patient populations can be daunting. Practices are faced with the challenge of reducing costs, which means reducing avoidable hospitalizations, while at the same time increasing care coordination services. The ability to do this successfully, and in an economically sustainable fashion, will rely on effective care management technology solutions.

What are the key elements of such a technology solution?
In essence, they are the ability to:

I. Engage and educate patients through targeted materials and comprehensive care plans.

II. Proactively collect patient-reported outcomes (PROs) on symptoms and side effects, as well as psychoemotional distress, and link this data to real-time alerts for providers.

III. Combine patient-reported outcomes and clinical data within a robust population health analytics and reporting framework.

IV. Create risk-stratified strategies, and corresponding customized programs, to deliver personalized care within and across unique patient populations.

9    Betty Rocque, G, Pisu, M...Partridge, E.E. (2015) "Trends in resource utilization and costs during implementation of a lay navigation program" *J Clin Oncol*, vol 33 (suppl; abstr 6502)

10   July 10, 2015: "UAB Study on Lay Navigation Program Shows Trend Toward Cost Savings" vol 6, iss 12. www.ascopost.com

11   Ahhmad, A.S. et al (2015) "Trends in the lifetime risk of developing cancer in Great Britain" *Br J Cancer,* vol 112

12   Kirkwood, KM (2015) "State of Cancer Care in America: 2014. A Report from the American Society of Clinical Oncology" *J Oncol Pract*

A comprehensive technology solution that enables these core tenets, together with the right combination of people and processes, will lead to faster interventions, lower costs and fewer hospitalizations.

## Activating Patients through Better Education

Thanks to the proliferation and accessibility of information online, patients have become increasingly savvy consumers of healthcare. But this doesn't mean that the right information is reaching the right patients at the right time. Historically, the approach to educating patients has been hampered by a lack of well-vetted, personalized materials and ineffective distribution.

Today, electronic patient portals make it possible to deliver targeted patient education materials, so that content can be personalized according to the issues each patient is most likely to face over the course of his or her particular cancer and treatment. Patients who understand which symptoms and side effects to expect from their cancer treatments tend to be more adherent. And better adherence means better outcomes.

At Navigating Cancer, we have witnessed first-hand the correlation between the patients who receive education materials customized to their disease and treatments and the length of time those patients adhere to their treatment plans.

The right technology solution will provide patients, and their caregivers, with the information they need to make informed decisions and engage in effective self-management.

*Practices are faced with the challenge of transforming clinic workflow to meet the requirements of new payment models while at the same time caring for the nation's growing population of cancer patients. The ability to do this successfully, and in an economically sustainable fashion, will depend on effective care management technology solutions.*

## Engaging Patients through Comprehensive Care Plans

One initiative that many current payment reform models share consistently is the requirement for a comprehensive care plan. In Chronic Care Management CPT Code 99490, the scope of services specifies that the care plan be available electronically at all times, to anyone within the practice and outside the practice, as appropriate. Similarly, electronic documentation of a comprehensive, patient-centered care plan will be a key element of the upcoming Oncology Care Model.

Care plans are important not only for the transparency they provide from the provider to the patient, but also for the engagement they draw out from the patient to the provider.

Family members often want loved ones to go to the hospital, even when hospitalizations near the end of life are in conflict with a patient's preferences

regarding end-of-life care. And in the fee-for-service model in which healthcare has operated, providers are rewarded for doing more, not less.

A survey done in 2014 by a nonprofit group called the Conversation Project showed that 90% of Americans now think it's important to have the conversation with their loved ones about how aggressive they would want their care to be in the final stages of a terminal disease. But the same survey showed that only 30% of us have actually had these conversations.[13]

A comprehensive plan established at the beginning of care is a catalyst to start these conversations when patients are best able to have them; well in advance of the emotionally charged advanced stages of disease. But equally important is that what is expressed in these conversations be recorded and stored in a place where everyone involved in the patient's care can easily reference it at anytime. Readily accessible care plans will help patients, and everyone involved in their care, hit the sweet spot where costs go down and quality, of care and of life, improves.

## Collecting PROs to Enable Proactive Care

Evidence is mounting that early identification, assessment and treatment of pain and other non-life-critical issues in cancer patients results in less futile use of hospitalizations and better patient satisfaction.[14] One study investigated the characteristics of 1,275 unplanned hospital admissions due to drug-related problems in cancer patients and found that half of these were preventable.[15]

Older patients' often omit symptoms during a face-to-face consultation with providers. For example, pain and fatigue are symptoms that patients have difficulty remembering past several days and so are only accurately assessed if collected daily.[16]

Common causes for unplanned hospitalizations among elderly cancer patients are fluid and electrolyte disorders, which can be prevented through better care coordination and comorbidity management. When patients gain a user-friendly connectivity with their health care providers outside of the four walls of their clinic, they will have the opportunity to communicate these symptoms and side effects in a fashion that allows for proactive care.

But will older patients use technology to report their symptoms and side effects electronically? According to a recent report from Accenture on Patient Engagement, most (67%) of Americans age 65 and older say that accessing their medical information online is very or somewhat important [17]. Currently, approximately 85% of

13  Goodman, Ellen (July 2015) "How to talk about dying" www.opinionator.blogs.nytimes.com
14  Chen J, Ou L, Hollis SJ (2013) "A systematic review of the impact of routine collection of patient reported outcome measures on patients, providers and health organizations in an oncologic setting". *BMC Health Serv Res,* vol 2
15  Chan A, Soh D...& Chiang, J. (2014) "Characteristics of unplanned hospital admissions due to drug-related problems in cancer patients" *Supportive Care Cancer,* vol 22
16  Yeom, HE and Heidrich, SM (2013). "Relationships Between Three Beliefs as Barriers to Symptom Management and Quality of Life in Older Breast Cancer Survivors" *Oncol Nurs Forum*, vol 40
17  Silver-Surfers-Are-Catching-The-eHealth-Wave.pdf www.accenture.com

American adults own a mobile phone, and people check their phones, on average, 150 times a day. This means that most people carry their phones with them wherever they go. Taken together, these findings point to the critical role that a user-friendly mobile or web-based tool could have in facilitating the collection of PROs, even among the elderly.

## Building a Framework for Population Health Analytics

Spending for healthcare in the U.S. is unbalanced across patient populations. A subset of 5% of patients consume almost half of the total health care dollars spent.[18] And the half of the patient population that consumes less spending accounts for only 3% of total health care dollars spent. Among Medicaid-enrolled patients, 1% account for almost 25% of Medicaid spending.[19]

The first step towards addressing this imbalance is insight into risk-stratification at the level of patient populations. Cancer programs will minimize hospitalizations systematically when they have the ability to identify high-risk patients, and prioritize the time and resources to manage these patients proactively.

The identification of high-risk patients requires a comprehensive view that includes comorbidities but also psychoemotional distress screenings, medication adherence and patient-reported outcomes. Thus, a population health framework starts with registering patient cohorts based on multiple data points. These include diagnosis codes, lab results, claims data and procedure codes, as well as PROs.

To gain actionable insights from this wealth of data, providers will need technology that can integrate it into an easy-to-use dashboard and extract trends.

With this framework, providers can also begin to understand how their patient populations are doing relative to regional benchmarks, allowing for the opportunity to level discrepancies in cancer care across geographies.

## Creating Customized Care Management Programs for High-Risk Patient Populations

With population health data in hand, the next step is to develop action plans to proactively interrupt high-risk prognosis trajectories before they escalate into hospitalizations.

To do this in an economically-sustainable and scalable fashion, technology solutions will enable practices to build and implement automated programs customized to managing their high-risk patients.

For example, care management technology that includes a user-friendly way for patients to report their adherence, symptoms and side effects on a regular basis can include risk-stratified same-day alerts for providers. These alerts would notify

18    July 2012: The Concentration of Health Care Spending, NIHCM Foundation Data Brief. www.nihcm.org
19    United States Government Accountability Office Report to Congressional Requesters (2015) "A Small Share of Enrollees Consistently Accounted for a Large Share of Expenditures" www.gao.gov

providers when data reported by a patient, combined with clinical and historical data already on file, identify a patient with an elevated risk for complications. Providers can then watch that patient more carefully or contact the patient directly. Programs would then be automated to follow-up with the patient as needed.

## Refining Customized Care Management Programs for High-Risk Patient Populations

Customized care management programs will deliver a more personalized patient experience, enabling patients to feel more cared for. As these programs are refined, based on ongoing population health analytics, this personalization will expand. And for some patients, the realization that they are receiving the personalized attention they need may motivate a new level of responsiveness.

Patients can't engage when they don't know how to engage. Within the iterative process of refining risk-stratified automated care management programs, patients that need additional attention will get it, and this enhanced experience will make it increasingly easier for them to become more actively engaged themselves.

## Less Hospitalizations, Lower Costs, and Healthier Patients through Better Technology

At a time when the urgency around improving our healthcare system is widely recognized, unnecessary hospitalizations represent a failure of our care delivery model. Better technology will be instrumental to delivering better care.

Through the HITECH Act, as part of the 2009 American Recovery and Reinvestment Act, the federal government has spent more than $30 billion in EHR meaningful use incentive payments to hospitals and healthcare professionals. As of April 2015, 95% of eligible hospitals and 54% of eligible office-based physicians had demonstrated meaningful use of certified health IT.[20]

But this is just the beginning. To achieve the healthcare transformation that will lead to better outcomes and patient satisfaction at economically-sustainable costs, physician practices and hospitals will need more than the digitization of their clinic workflow; they will need technologies that truly engage patients and manage high-risk patient populations. And to realize this, current EHR systems must interoperate with these new technology solutions.

Unfortunately, the HITECH act earmarked $22 billion to incent physicians to adopt EHRs but failed to mandate that these EHRs interoperate with other technology solutions. And some EHR vendors have exploited this loophole, going as far as flat out blocking data and interoperability to further their own business goals. This activity was described in a Report on Health Information Blocking, submitted to Congress in April of this year [21]. As other stakeholders begin to surface this issue [22], the call for

20   July 2015: Office of the National Coordinator for Health Information Technology, Health IT Quick-Stats #44 and #45
21   April 2015: Report to Congress on Health Information Blocking, prepared by Office of the National Coordinator for Health Information Technology (ONC). www.healthit.gov
22   Sep 2015: "Barriers to Interoperability and Information Blocking" www.asco.org

government-mandated interoperability standards grows louder.

One day, perhaps it will be the norm for providers and insurers to use personal data and software tools to predict who is heading towards a hospitalization and intervene in advance, to avoid it.[23] A key element in realizing this vision of population health management will be interoperable technology solutions that allow patients and providers to partner together proactively, before symptoms, side effects, misinformation or non-adherence can escalate. As oncology shifts to a value-based system, cancer programs and cancer patients will only grow more aligned in this effort. And interoperability will be vital to realizing the promise that technology holds for minimizing hospitalizations, increasing patient engagement, and improving healthcare delivery on a broad scale.

Studies outside of oncology have further shown that increasing support for patient self-management and education improves health outcomes.[24] And early results from recent initiatives at prominent health systems demonstrate the power of mobile technology for reducing hospital readmissions.[25] One example is the Geisinger Monitoring Program, which enhanced patient/provider communications after discharge through telehealth technologies and recorded a 44% reduction in hospital readmissions. Another example is the Northern Arizona Healthcare system, which saw a significant decrease in hospitalizations among patients who were given access to mobile home health monitoring and care coordination software after being treated for cardiac conditions. [26]

## The Time is Now

One strategy practices can take is to assume that their current EHR vendor will eventually supply them with all of the features and functionalities necessary to successfully engage patients, capture PROs, report on the many quality measures required in value-based payment models and effectively minimize hospitalizations. Unfortunately, not all EHR vendors have a history of achieving great customer satisfaction [27], and this is widely known despite the fact that many top industry EHR vendors, like Epic, Cerner, Allscripts, eClinicalWorks, and MEDITECH, have "gag clauses" in their contracts barring providers from discussing negative aspects of their EHR experience.[28]

More importantly, we don't have time to wait for better experiences and outcomes for cancer patients. And Health and Human Services (HHS) is taking real steps to ensure that practices begin to transform today. In 2011, no Medicare payments were made through alternative payment models; by 2014, approximately 20% of payments were

23   June 2015: "Insurers use personal data to predict who will get sick" www.npr.org
24   Olivarius NF, Beck-Nielsen H…Pedersen PA (2001) "Randomised controlled trial of structured personal care of type 2 diabetes mellitus" *BMJ*, vol 323 and Effing T, Monninkhof E…Zielhuis, GA (2007) "Self-management education for patients with chronic obstructive pulmonary disease." *Cochrane Database Syst Rev*
25   Graham, J, Tomcavage, J…Stewart, WF (2012) "Postdischarge monitoring using interactive voice response system reduces 30-day readmission rates in a case-managed Medicare population" *Med Care*, vol 50
26   Sept 2015: "Health System reaps big savings with remote monitoring"  www.mhealthnews.com
27   Oct 2015: "25 quotes that show just how fed up physicians are with EHRs" www.beckershospitalreview.com
28    Sept 2015: "Doctors barred from discussing safety glitches in U.S.-funded software" www.politico.com

made this way. In January of this year, HHS Secretary Sylvia M. Burwell set goals for 30% of traditional Medicare payments to be tied to value-based payment models by the end of 2016, and 50% to be tied to such models by the end of 2018.[29] HHS also set the explicit goal of tying 85% of all traditional Medicare payments to quality or value by 2016 and 90% by 2018, through programs such as the Hospital Value Based Purchasing and the Hospital Readmissions Reduction Programs. And implementation of the Medicare Access and CHIP Reauthorization Act of 2015 (MACRA), signed into law in April of this year, poses a major opportunity to transform healthcare delivery to value through the new Merit-Based Incentive Payment System (MIPS).

Chronic Care Management from CMS went live at the beginning of this year, and CMMI's Oncology Care Model will begin in Spring 2016. These programs presuppose that practices will have the right processes and technology in place to capture and report the myriad of quality measures involved in the delivery of value-based care. Healthcare providers don't have the luxury of time to wait for current EMR vendors to upgrade their systems to begin transforming their practices.

## Where to Begin

Cancer programs can make a big impact today towards preventing unnecessary hospitalizations by providing patients and their caregivers with electronic access to critical information such as education materials and care plans, and by equipping them with enhanced means of communicating with their care team. These capabilities can be added to whatever IT a practice already has in place, so long as the practice chooses a vendor that can readily interoperate with any other EMR vendor. Practices will need to advocate to their EMR vendors that they provide the necessary data to make these systems interoperable and take steps during the contracting process to have protective language around interoperability so they aren't subject to information blocking practices.[30]

These software systems, if user-friendly and able to integrate seamlessly with current practice workflow, will immediately and significantly improve the experience for cancer patients, enabling better outcomes.

This is a great opportunity to create a more positive experience for cancer patients and their loved ones, while conserving healthcare spending in general for patients who will benefit most from hospital visits.

29  Jan 2015: "Better, Smarter Healthier: In historic announcement, HHS sets clear goals and timeline for shifting Medicare reimbursements from volume to value" www.hhs.gov
30  April 2015: Report to Congress on Health Information Blocking, prepared by Office of the National Coordinator for Health Information Technology (ONC). www.healthit.gov

## About Navigating Cancer

Navigating Cancer is the leading patient care and engagement solution for cancer programs. For patients, Navigating Cancer provides a single, comprehensive hub that operates with any electronic health record vendor. This allows patients to stay informed and engaged seamlessly in their own care across multiple clinics, caregivers and geographies. For providers, Navigating Cancer offers an agile means of satisfying current requirements for Meaningful Use, Commission on Cancer and new payment reform models.

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