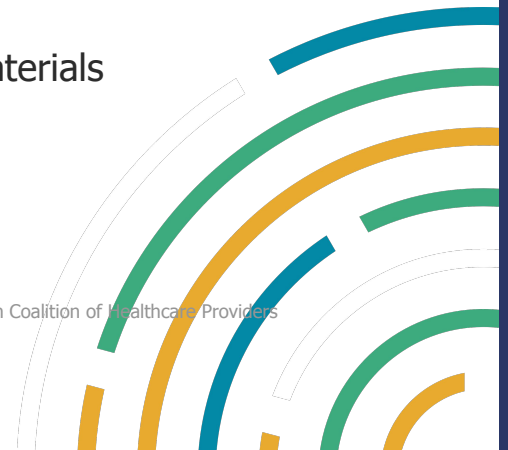
TABLE OF CONTENTS



If you come to an emergency department 85 times over the course of 18 months, maybe we're treating the wrong thing

SUSAN COOPER, MSN, Senior Vice President and Chief Integration Officer, Regional One Health

Getting started in complex care

Introduction

A primer on using data

Visualizing high-frequency utilization

Learning root cause themes

Deciding which patients to work with first

High utilizers of emergency department

High utilizers of inpatient admissions

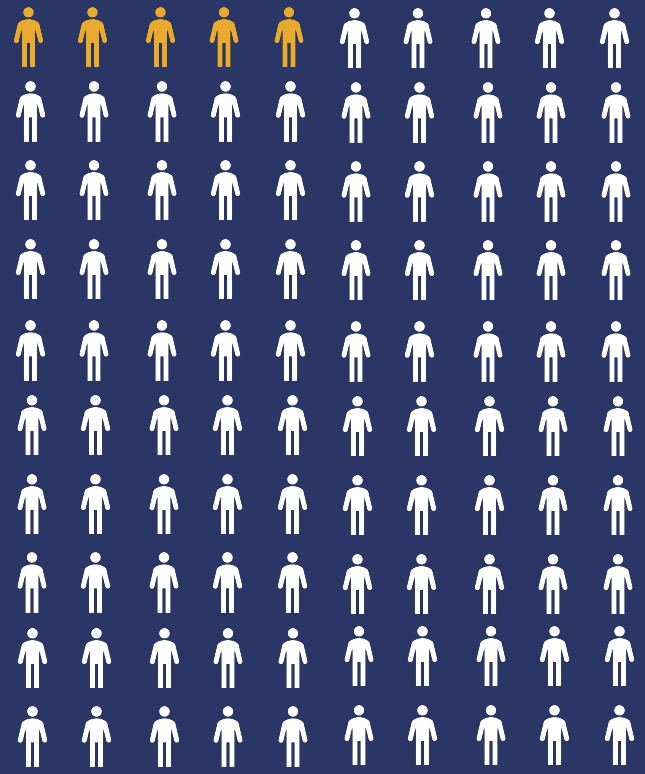
Integrating palliative care

Introduction

One of the most important foundational concepts to building the value case for complex care is effectively understanding and intentionally targeting the population you will serve. In this section you will learn different ways to use data to visualize populations and techniques for understanding their needs.

Click **here** for additional reading.

5% of the population accounts for 50% of healthcare costs

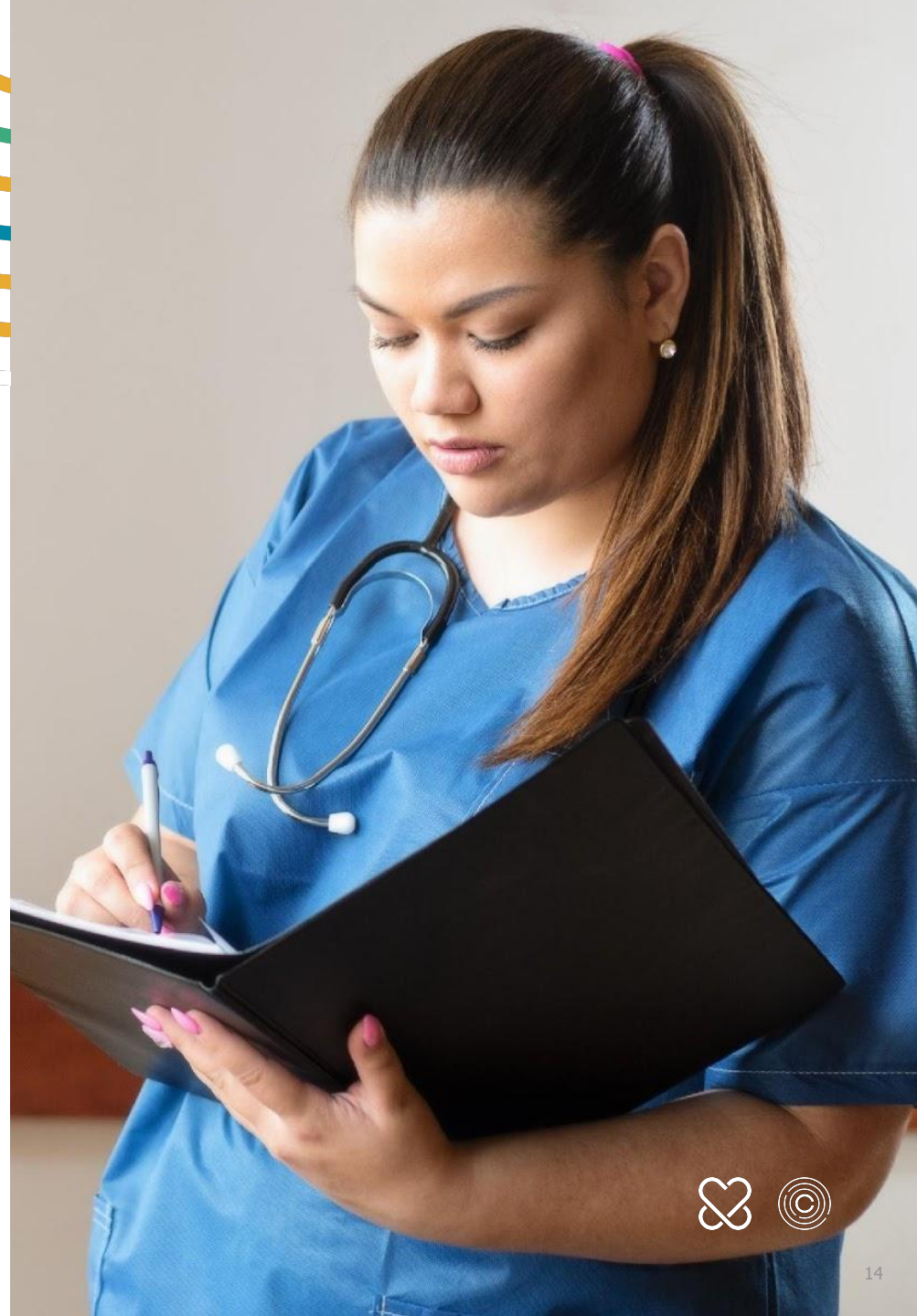


A primer on using data

Data analytic support is the holy grail when making the case for complex care. Most programs – even in large health systems – have minimal data support for identifying populations for intervention or analyzing outcomes. As you read through the next section of this toolkit and become inspired to visualize data of your population, check to see what reports are already available within your system. You may be surprised to discover data reports needed for complex care already exist. For example, do case managers in the emergency department already have an "ED Utilization Report?". Programs use the following sources to access population and outcome data:

- EHR and cost accounting systems
- Readmissions data
- **Community health needs assessments**
- Health Information Exchanges
- **Hospital association analysis**
- Claims data from payers
- ACO/Capitation data
- **Cross-sector community data**

Programs have also partnered with a motivated data or financial analyst — or even a graduate student from a local university — to do an initial data analysis. When possible, complex care programs integrate funding for data analysis into grants or budget a data analytic FTE as part of the intervention.

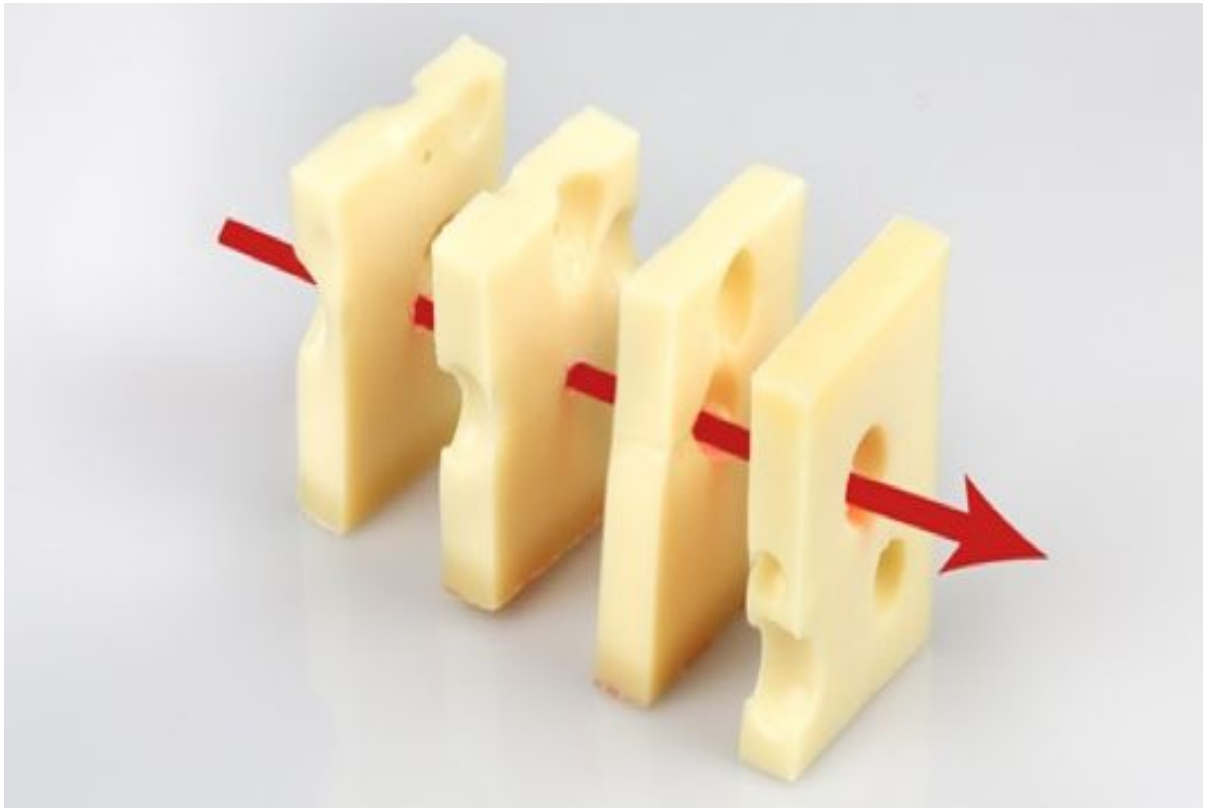


EXAMINING DATA THROUGH THE LENS OF OUTLIERS POINT US TO "SWISS CHEESE HOLES" IN THE SYSTEM

People living with complexity often become complex because all the Swiss cheese holes that exist in the system have lined up for them to fall through. Learning the stories and cases of outliers within our systems can help us understand themes of systems failures that likely exist for anyone navigating the healthcare system.

A secondary benefit of a complex care analysis — rarely leveraged in our experience — is that the review identifies process improvements that could help the entire patient population.

By identifying "Swiss cheese holes" (aka process improvements) for one case, then multiple cases, we can identify the greatest opportunities within our systems to "plug the holes" and proactively change the trajectory for individuals in the rest of the population before they become complex. Thus, impacting many more individuals than just those experiencing complexity.



Visualizing high-frequency utilization

Whether you're starting a new program, making the case for an existing one, or looking to support growth and sustainability of a complex care program, the first step is understanding the opportunity in your market.

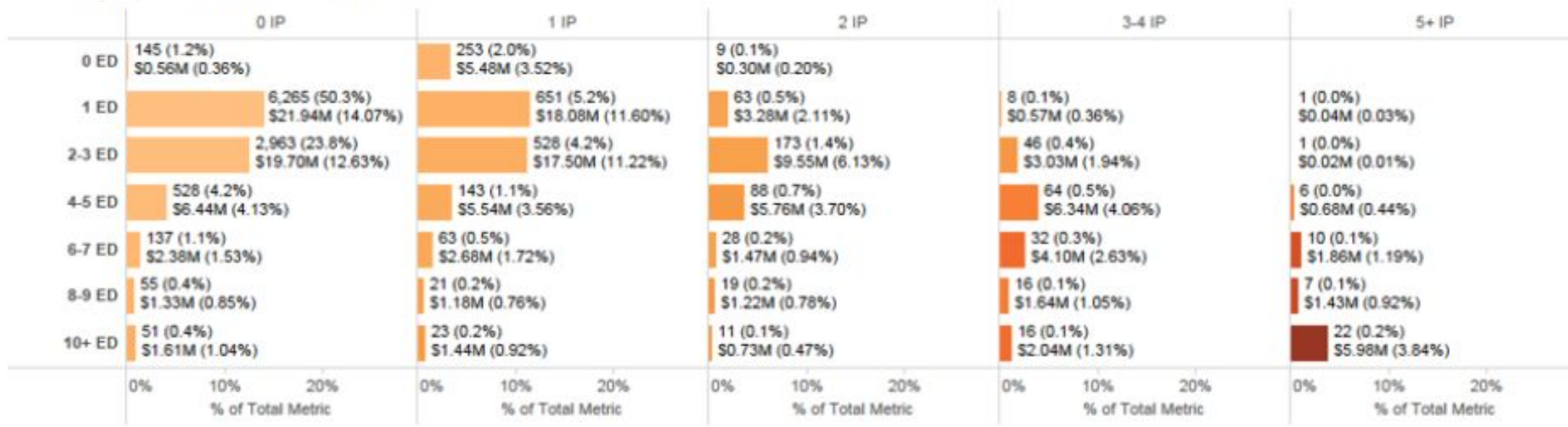
Many systems tend to start by segmenting their population by disease state, but we encourage you to start by examining your population through the lens of patient utilization. The chart on this page shows one way to visualize the population that accesses a system in a given year, as well as distribution by utilization and cost.

The individuals in the pink box are often the greatest teachers of where our systems fall short in caring for people living with complexity. By understanding the stories of the people in this segment, we gain insights into systems' Swiss cheese holes that, if fixed, can proactively impact the trajectory of the rest the other patient segments.

EMERGENCY DEPARTMENT AND INPATIENT UTILIZATION

<table>
<tr><th rowspan="2">ED visits</th><th colspan="5">Inpatient visits</th></tr>
<tr><th>0</th><th>1</th><th>2</th><th>3 to 4</th><th>5+</th></tr>
<tr><td>0</td><td colspan="2" rowspan="3">44,728 (85%) patients
• 5,210 Inpatient visits
• 63,489 ED visits
• $28,000,000 (50%) IP payment
• $25,800,000 (59%) ED payment</td><td rowspan="8">985 (2%) patients
• 1,856 IP visits
• 4,129 ED visits
• $10,000,000 (17%) IP payment
• $1,700,000 (4%) ED payments</td><td rowspan="8">503 (1%) patients
• 2,026 Inpatient Visits
• 4,144 ED Visits
• $10,900,000 (20%) in IP payment
• $1,700,000 (4%) in ED payment</td></tr>
<tr><td>1</td></tr>
<tr><td>2 to 3</td></tr>
<tr><td>4 to 5</td><td rowspan="4">4,961 (9%) patients
• 28,447 ED visits
• $11,500,000 (27%) in ED payment</td><td rowspan="4">1,563 (3%) patients
• 1,239 IP visits
• 6,962 ED visits
• $6,700,000 (18%) in IP payment
• $2,800,000 (6%) in ED payment</td></tr>
<tr><td>6 to 7</td></tr>
<tr><td>8 to 9</td></tr>
<tr><td>10 +</td></tr>
</table>

ANOTHER EXAMPLE OF VISUALIZING POPULATION UTILIZATION FREQUENCY



WHAT IS POSSIBLE WITH SOPHISTICATED DATA

NYC Health+Hospitals uses sophisticated population health analytics to score individual risk through combinations of data that include prior utilization and cost, pharmacy, clinical diagnoses, and demographics. The goal is to track clusters of the population over time to understand opportunities for system-wide process improvement that address root causes. A recent webinar describing this approach **Using Population Health Strategies to Tailor care for Individuals with Complex Needs** can be found on the Better Care Playbook.

NYC HEALTH+ HOSPITALS | POPULATION HEALTH

Review the latest **toolkit from NYC Health+Hospitals**

Learning root cause themes

HOW TO START WITHOUT SOPHISTICATED DATA SUPPORT

It's also possible to start a complex care program and gain an understanding of your population without data analytic support. Many programs are under-resourced and have created lists of the top 100 clients (by cost and by utilization) seen by their organization or partner organizations. Staff then analyze their characteristics and root causes of utilization to differentiate targeting of a specific population. Programs with minimal resources also ask providers and community agencies to identify their top 20 complex and vulnerable members, and a similar assessment and root cause analysis is completed to identify opportunities

Completing this type of analysis will help you identify individuals in your population who are experiencing the most systems gaps. Recreating the analysis on an annual basis will also reveal changes in the population over time or identify new subpopulations on which to intervene.

Client Initials: (removed)
Age: 44

Please fill in the boxes below based on any information you know about the individual you're working with:	
Medical	**BH and Substance Use Disorder**

• Skin and blood infections related to IV drug use
• Needs 6 weeks on IV antibiotic treatment in supervised facility
  ○ Hospital started him on methadone maintenance therapy
  ○ Schedule to see Psychiatry as well to discuss mental health treatment options
	• Opioid use disorder
	• Bipolar disorder
	• Not currently on medication, in treatment or associated with a program
	• High risk for overdose
	• Limited access to clean needles and supplies

Social	**Systems**
• Experiencing homelessness • Disconnected from immediate family, but in contact with best friend • Lost visitation privileges with his daughter • Lost identification • Not receiving any income • Has unresolved court/legal issues • Owes back child support • Significant history of emotional trauma in childhood – father died of an overdose	• Hospital unable to discharge for his IV antibiotic therapy, subacute facility will not accept him because of drug use history • Hospital staff has confrontational relationship with him – labeled "high risk" and "non-compliant" • Inpatient hospital unit unable to manage his personality and significant psychosocial needs. • No medical respite service in area

CONTINUING WITH MINIMAL DATA SUPPORT: FIND THEMES AMONGST INDIVIDUAL ROOT CAUSES

Once you've gathered enough individual root cause cases, a tracker like this one shows an example of how to collate multiple individual cases to better understand themes amongst the individual cases.

Whatever method you decide to use to analyze themes, it is important to look across common systemic barriers patients may face within medical, social, behavioral, and system domains.

PATIENT IDENTIFICATION			DEMOGRAPHIC VARIABLES					NUMBER OF ENCOUNTERS 12 months prior to intervention				ROOT CAUSE DIAGNOSES Diagnoses driving access				SOCIAL ISSUES DRIVING ACCESS							
MRN Number	Patient Name	DOB	Age	Gender	Insurance	Zip Code	Race	ED/UC	IP/OBS	OP (clinic)	Length of stay days	ICD 10s for inpatient admissions	Chief complaint for ED visits	Behavioral health diagnosis?	Substance use disorder diagnosis?	Lack of primary care?	Lack of housing?	Food insecurity?	Transportation issues?	Legal issues?	Safety issues?	Social isolation?	Disabilities?

ROOT CAUSE ANALYSIS TOOL

Deciding who to work with first

New programs often make the mistake of attempting to work with people who have the highest visit frequency in the healthcare system without regard to the underlying clinical or social needs. The rationale is appealing: if we can reduce the utilization of just three of the people with over 100 visits each year, we will improve costs. But if you are unable to impact the root cause(s), you cannot expect success.

Translating individual root causes to more broadly impactable systems change requires, among other things, clinical experience and judgment. Performing root cause case reviews can allow you to identify individuals with similar characteristics whose utilization is far higher than expected. When we see common themes linked to high frequency of utilization, it's an indicator that a gap exists within the system. For example, if people living with homelessness and substance use disorder appear as common visitors of the emergency department, it's likely that gaps exist in housing and substance use treatment within your broader community ecosystem.

By starting with root causes that can be appropriately addressed for an individual, you'll have a dramatic impact on the patient's overall clinical health and utilization. Over time, the processes you develop to help one person can translate into sustainable, scalable, process improvements that help whole groups of people with similar needs.

High utilizers of the emergency department

Individuals who frequent the emergency room often cross the intersection of physical, behavioral and social complexity. Anecdotally, after working with many health systems on strategies to address their populations, those who average 100 visits in a year include subpopulations of people experiencing chronic homelessness, long-term substance use combined with age over 50 and complex life circumstances. The group is historically extremely underserved, and deserving of a new approach to care. For success in the population, you will need integrated behavioral health and substance use disorder treatment in your model and a partnership for accessing housing with a harm reduction approach.

The other complexity you will likely encounter in people who visit the ED in the triple-digits annually is complex behavioral health, personality disorders, diagnoses like Munchausen's, and issues where the hospital has become a safe place for meeting other needs.

Success will require behavioral health services, partnerships across systems in your community, a long-term intervention, and organizational support for setting boundaries and sharing plans of care across settings. Staff will require dedicated training to shift techniques and mindsets of how to create these cross-system partnerships and sustainably support long-term process improvements for community care.

When deciding to work with people who frequent the ED, it's helpful to start with a target of 10 to 20 visits in the previous year. You can serve those with less utilization, but if your threshold of visits is too low, you may be accessing people who had an acute episode that resolved by itself, and it will be hard to show the business case for the population. If you choose higher numbers of visits, you may tap into a population that requires resources and long-term intervention that your program may not be adequately funded for at its onset.

High utilizers of inpatient admissions

Tracking inpatient utilization can be a helpful way to target a high needs population. Two areas to watch out for with this metric are setting the bar too low and not using a triage process for types of admissions.

If you set the entry point too low (less than three inpatient admissions in a year), you may be tapping into a subpopulation with an acute event that resolved on its own. It's difficult to show a financial return for your program if the utilization or cost wasn't high from the beginning.

Consider the root cause and your ability to impact utilization and cost. Some programs exclude cancer patients or dialysis patients because expected utilization and cost may be high for these populations. While there is opportunity to improve quality and decrease cost in these populations, you will need organizational support and partnerships with specialists to make a significant difference.

Recent resources from the Better Care Playbook and publications from Anna Davis, et al. give an excellent foundation to inform your choice of a population of focus.

- **Defining complex patient populations: Implications for population size, composition, utilization, and costs**
- **Identifying populations with complex needs: Variation in approaches Used to select complex patient populations**
- **Using population identification strategies to tailor care for individuals with complex needs**

Integrating palliative care

One common mistake complex care programs make is not considering the **prognosis** of the client and their appropriateness for hospice or palliative care. High inpatient utilization or cost can indicate a person is declining with a chronic disease. This can be missed between systems and from admission to admission. Your program may be well-positioned to serve people at the end of life. It's important to consider what kind of care they wish to receive and the decisions they need to make. The hospice insurance benefit provides a wide range of services at minimal cost to patients and families. Palliative care teams are deeply knowledgeable in proactive symptom management and complex decision-making that comes along with decline from a chronic disease. Your program will have a difficult time making the business case if you take on clients that are best served by another field with comprehensive services and insurance coverage.

Key takeaways

- Use data to visualize utilization across the system as a starting point and an annual evaluation point
- Evaluate root causes of utilization to identify subpopulations to serve.
- Individuals with similar characteristics who also have high frequency often point to systems failures that can benefit from process improvement
- Use this analysis to identify potential inclusion and exclusion criteria for who will be served by your program