

Complex Care at NYC H+H

Operational Guide to Identify, Understand, and Treat High-Need Patients

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NYC
HEALTH+
HOSPITALS

POPULATION
HEALTH

What is Complex Care?

Complex care seeks to improve the health and well-being of a relatively small, heterogeneous group of individuals who repeatedly cycle through multiple healthcare, social service, and other systems but do not derive lasting benefit from those interactions.

Complex Care seeks to be:

- **Person-Centered:** Individuals' goals and preferences guide all aspects of care.
- **Equitable:** Addresses systemic issues like poverty and racism.
- **Cross-Sector:** Breaks down silos; encourages collaboration to create change.
- **Team-Based:** Interprofessional, non-traditional, and inclusive teams.
- **Data Driven:** Timely, cross-sector data to effectively meet needs and evaluate success.

Overview of this Operational Guide

This guide features open-source implementation tools which could be customized, and used to support other health system's efforts to identify, understand, and treat patients with complex needs.

This guide provides step-by-step guidance on:

- 1) **Risk scoring and stratification:** using data and analytics to identify patients with complex needs;
- 2) **Segmentation:** combining analytics with clinical insight to understand patients with complex needs; and
- 3) **Targeting:** tailoring care models to fit needs and behaviors of patients with complex needs.

The contents of this guide are arranged in order of the above topics; each section includes a general description, as well as specific examples and lessons from NYC Health + Hospitals' efforts to implement this framework.

NYC Health + Hospitals Overview

- Largest public health care system in the United States—provide essential inpatient, outpatient, and home based services to more than 1.2 million New Yorkers annually. ~300,000 uninsured
- System comprised of 11 hospitals, 5 skilled nursing facilities, 74 community clinics (Gotham Health)
- ~500,000 MetroPlus members (H+H-owned health plan; NYC public option)
- ~48% of NYC's mental health inpatient admissions; 46% of alcohol/detox inpatient admissions take place within Health + Hospitals
- Diverse patient population, with many new immigrants
- *Tens of thousands of patients without a home*
- *Thousands of patients considered high-need*
- *Hundreds of patients who spent more days in the hospital than out of it in the past year*



Admissions ED Visits Clinic Visits

1.2 Million Patients

~225,000 Admissions

1 Million+ Emergency Room Visits

4.5 Million+ Clinic Visits

>200 Languages



= 50K

Mission is to help all of our patients, without exception, live the healthiest lives possible.⁴

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Define the Population

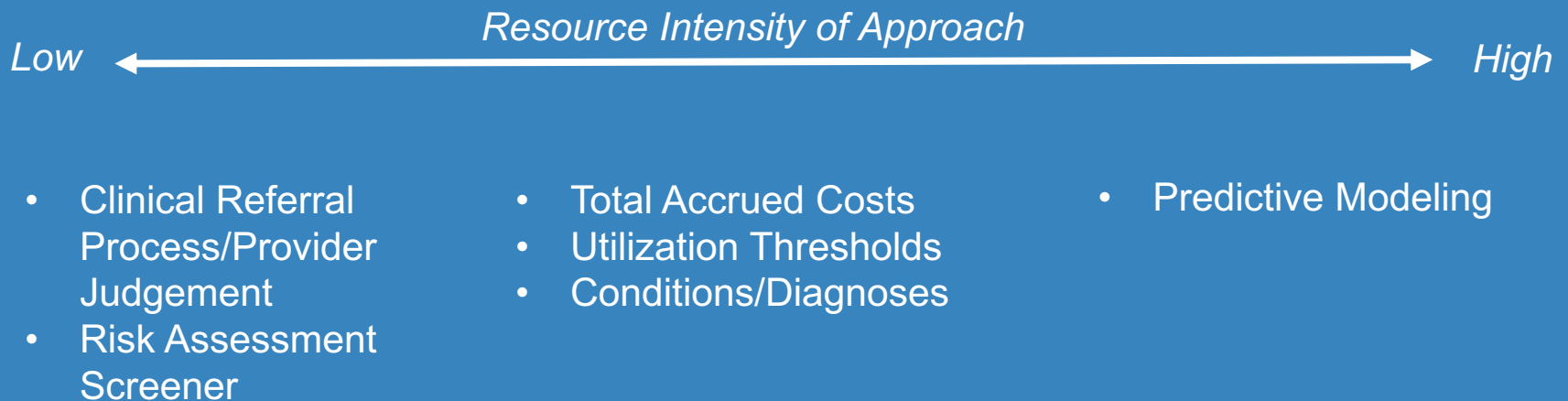
There is currently no consensus on the characteristics of high need patients, but there are a number of behaviors and characteristics commonly associated with a high need population.

- The following characteristics are shared across “high-need” descriptions¹, and could be used to inform your own definition:
 - 1) Total accrued health care costs
 - 2) Intensity of care utilized for a given period of time
 - 3) Functional limitations
- Other, commonly² occurring descriptions, which can help inform your work:
 - Multiple chronic health conditions
 - Complex social and behavioral needs
 - Account for, or at risk of, disproportionate rates of hospital admissions and ED visits
 - High costs
 - Poor health outcomes

Source: Long, P., M. Abrams, A. Milstein, G. Anderson, K. Lewis Apton, M. Lund Dahlberg, and D. Whicher, Editors. 2017. Effective Care for High-Need Patients: Opportunities for Improving Outcomes, Value, and Health. Washington, DC: National Academy of Medicine.

Risk Score the Population

Once you have an established definition, there are multiple ways to identify patients who meet that description. Below shows various approaches that have been used to risk score patient populations; these approaches vary in their intensity of resources required.



Risk Score the Population: *Clinical Referral and Risk Assessment Screeners*

- Pros:

- Technology infrastructure needed may be minimal or already exist in EHR
- Iterative; test and adapt process over time
- Process owned by providers; adapt to each facility needs
- Low resource intensity approach
- May be real time process

- Cons:

- Requires robust provider training and refresher programs
- Outcomes measurement challenging due to wide variability
- May not reach population seeking care in non-traditional settings or small subset of true high needs population
- Access issues may prevent referral converting to engagement
- May be tied only to specific chronic conditions; not a whole person approach

Resources: Patient Screeners

Below are helpful, open-source resources to screen for risk and patient needs in healthcare settings.

- SIREN's Screening Tools for Identifying and Addressing Social Needs in Health Care Settings: <https://sirennetwork.ucsf.edu/tools-resources/screening-tools>
- Health Lead's Resource Library for addressing social needs and implementing programs: <https://healthleadsusa.org/resource-library/health-leads-tools/>
- Arizona Self-Sufficiency Matrix
- National Association of Community Health Centers Protocol for Responding to and Assessing Patients' Assets, Risks, and Experiences (PRAPARE): <http://www.nachc.org/research-and-data/prapare/>
- Praed Foundation Oregon Family Strengths and Needs Assessment Tool

Risk Score the Population: *Accrued Costs, Utilization Thresholds, Conditions/Diagnoses*

- Pros:

- Definition for threshold can be established and automate a flag or review process
- Can take into account multiple data sources
- Less variability in outcomes measurement
- Iterative; test and adapt process over time

- Cons:

- Moderate resource intensity; requires data analytics and outcomes monitoring
- May be tied only to specific chronic conditions or dollar values; not a whole person approach
- May not reach population seeking care in non-traditional settings or small subset of true high needs population
- Access issues may prevent referral converting to engagement
- May not be real time process

Risk Score the Population: *Predictive Modeling*

- Pros:

- Whole population approach; used widely in industries outside of healthcare to inform managerial decisions.
- Can take into account multiple data sources.
- Less variability in outcomes measurement in comparison to other risk scoring methods that depend more on individual judgement.
- Iterative; test and adapt the model over time.

- Cons:

- High resource intensity; requires data analytics and outcomes monitoring capacity internally or a significant budget to contract with analytics consultants or commercially available products.
- System may lack good quality data, data from specific touchpoints relevant to predictive model, or data over a significant period of time.
- Updates to model inputs needed over time; underlying assumptions need to be examined at a regular interval.

H+H Selected Approach: *Predictive Modeling*

Predictive modeling allows for proactive population risk scoring, which could be used to identify people who will generate the majority of costs or service utilization in the future or are at highest risk for poor health outcomes.

Unlike methods which measure current utilization or costs alone, predictive models weigh a number of variables, to produce a holistic assessment of risk, including the following key factors:

- Demographics
- Behavioral health conditions
- Socioeconomic status
- All service utilization; utilization in acute settings
- Chronic medical conditions

NYC H+H selected this approach because it evaluates the whole population and includes people who do not seek care in traditional settings.

Example: H+H Leadership Engagement

Health system leadership (c-suite) engagement and buy-in is critical to advancing the needs of people with complex needs.

Engaged leadership can:

- Allocate new funding to obtain resources,
- Re-allocate existing resources like staff or space,
- Support the creation of strategic partnerships with community based organizations, and
- Manage organizational change, such as training programs.

At H+H, we were able to obtain broad buy in, including from finance leadership, to target the top 5% of patients by demonstrating this population drove 50% of admissions and 25% of ED visits through our predictive risk model.

The Care Management Department under the Office of Population Health convened a series of workgroups to develop strategy and an implementation plan to effectively target these patients.

The predictive modeling approach was not just operationally useful, but also a way to generate leadership engagement, by demonstrating the linked clinical and financial imperatives.

Example: H+H Leadership Engagement

This work was communicated to H+H leadership at several key venues:

- System service-line leadership councils, such as the Ambulatory Care Leadership Council
- Facility (individual H+H hospital) leadership meetings
- System (all H+H hospitals and other facilities) leadership meetings

This work was operationalized through:

- Epic enhancements, including a longitudinal plan of care for all high risk patients.
- Hiring and training key staff at each facility, including high risk social workers.
- A proactive “risk list” telephonic outreach program.
- A reactive risk program, meeting patients when they went to acute settings.
- Universal screening for social needs for all high risk patients.
- Targeted complex care programs, including the “Primary Care Safety Net” program at Bellevue Hospital Center.

Tool: Open Access, H+H Developed Predictive Modeling

- NYC Health and Hospitals developed a payor-agnostic risk model for super-utilization using administrative and clinical data. This did not require advanced EHR functionality or proprietary claim-based rules, making it timely and affordable for our system.
- Access H+H's nonproprietary, open source predictive model here:
<https://www.ncbi.nlm.nih.gov/pmc/article/s/PMC5910357/>

An All-Payer Risk Model for Super-Utilization in a Large Safety Net System

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INTRODUCTION

Identifying patients at high risk for super-utilization of inpatient and emergency services—and proactively managing their care—are key strategies for healthcare systems aiming to improve population health and control costs. Traditional claims-based risk scores are inadequate for uninsured patients and patients with insurance churn, and many safety net systems do not have an electronic health record (EHR) capable of advanced analytics.

As the largest safety net system in the country, NYC Health + Hospitals serves a high-need population, including thousands of patients with multiple, interlinked medical, behavioral health, and social issues. More than half of the system's patients had an emergency room (ER) visit in the past year. Seventeen percent had two or more visits, and 250 patients averaged at least a day a week in one of our emergency rooms. NYC Health + Hospitals also provides half of all uninsured emergency and inpatient care for New Yorkers, including more than 80% of uninsured non-emergency services.¹ To be successful, risk prediction strategies must encompass NYC Health + Hospitals' entire patient population.

METHODS

Our objective was to develop a payer-agnostic risk model for super-utilization using administrative and clinical data from the largest safety net system in the USA. We selected adults that visited an NYC Health + Hospitals acute care, community health center, or skilled nursing facility in 2014 (index year) and were not designated pregnant or actively incarcerated during the study period. Patients were randomly assigned to a development (80%) or validation (20%) cohort, using SAS Enterprise Guide 7.11 (SAS Institute). Internal administrative data provided utilization, demographic and scheduling data, and diagnoses came from clinical data. Our primary outcome was super-utilization within our system during 2015 (prediction year), defined as ≥ 10 days in inpatient care or the emergency room. To identify candidate variables, we aligned available data elements to key factors in the literature and clinical

guidelines.² Stepwise selection identified the final logistic model and generated algorithmic weights; model discrimination was assessed using the c-statistic. Our large sample size precluded the Hosmer-Lemeshow test.³ We converted weights to a risk algorithm using methods described by Sullivan et al.⁴ Risk score performance was assessed on the validation set using positive predictive value for 2015 super-utilization among the top 1% of 2014 patients (high risk). Figure was generated using Tableau 10.2 (Tableau Software).

RESULTS

We retained 643,475 NYC Health + Hospitals patients in the development cohort, of which 45.8% were males, 33.9% were enrolled in Medicaid at their most recent visit in 2014, and

Table 1 Payer-Agnostic Risk Score from a 2014/2015 Safety Net Cohort

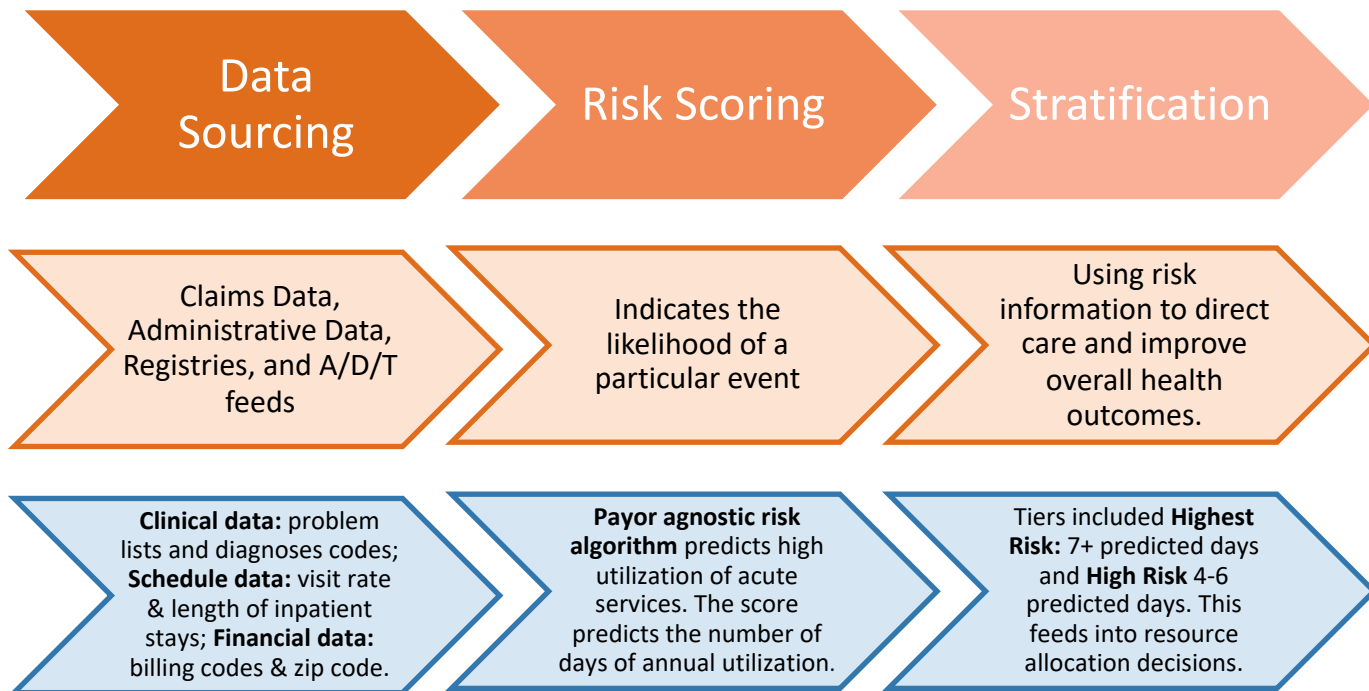
Variable	Value	Risk points
ED visits in 2014	1-2 visits	2.4
	3-4 visits	5.7
	5+ visits	10.3
	1 visit	6.7
Inpatient visits in 2014	2 visits	8.2
	3 visits	9.1
	4+ visits	11.3
	≥ 10 inpatient/ED days in 2014	3.9
Marital status category	Single, never married	1.9
	Separated, widowed, and divorced	3.1
	Male	1.7
	Female	2.6
Age category	45-64	2.6
	65-80	6.1
	≥ 81	9.4
	Diagnosis flags	4.2
Diagnosis flags	Alcohol disorders	7.7
	Schizophrenia	1.7
	Mood disorders	1.4
	Heart disease	2.6
	Substance disorders	5.6
	Chronic kidney disease	1.7
	Asthma	1.1
	Diabetes	5.6
	Sickle cell	1.0
	≥ 2 missed outpatient medicine clinic visits	1.8
Zip changes	1-2 zip changes	2.3
	3+ zip changes	1.0
	1-2 payer changes	1.4
	3-4 payer changes	2.0

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Risk Stratify the Population

Risk stratification enables providers to identify the right level of care and services for distinct subgroups of people. It is the process of assigning a risk status to a people and then using this information to direct care and improve overall health outcomes.



Tips: H+H Process to Orient Front-Line Providers to Risk Stratification

1) Create tailored patient lists based on your established definition

These lists could be generated using utilization thresholds, specific diagnoses, costs, or predictive risk scoring. We recommend testing different formats with a group of front-end user for feedback.

Sharing information within the existing electronic health record or other shared IT platform through a dashboard or report is a helpful way to get information to providers; minimizing the need to go to multiple sources for information.

2) Establish an assignment or attribution approach

At H+H, attribution is based on plurality of visits (which facility was most frequently visited). Primary care provider lists were generated based on registration data on PCP assignment in the electronic health record. Facility lists were also generated, but are less targeted than PCP lists.

3) Develop materials to orient your front-line staff to risk lists

H+H developed a brief PDF guide to provide context and give suggestions on how to best incorporate lists into existing workflows. It distributed this guide through leadership councils to front line staff. Another approach is to supplement lists with in person or on demand video⁸ training.

II. Understanding People with Complex Needs

- A. Segmentation
- B. Example: Early Data Driven Segmentation at H+H
- C. Example: Qualitative Segmentation at H+H
- D. Example: Application of Segmentation Approach at H+H

Segmentation

Segmentation is a market research method whereby individuals in a large group are further divided into smaller buckets based on commonality, in an attempt to gain insight and target appropriate resources.

Demographic Segmentation: Group people by gender, age, ethnicity, income, education level, geography, and other physical or situational characteristics.

Behavioral Segmentation: Grouping people by their behavior, for example, adherence to medications or utilization patterns of medical care via claims data.

Psychographic Segmentation: Grouping people by shared values, belief principles, emotions, personality, interests, and lifestyle.

Less Intensive

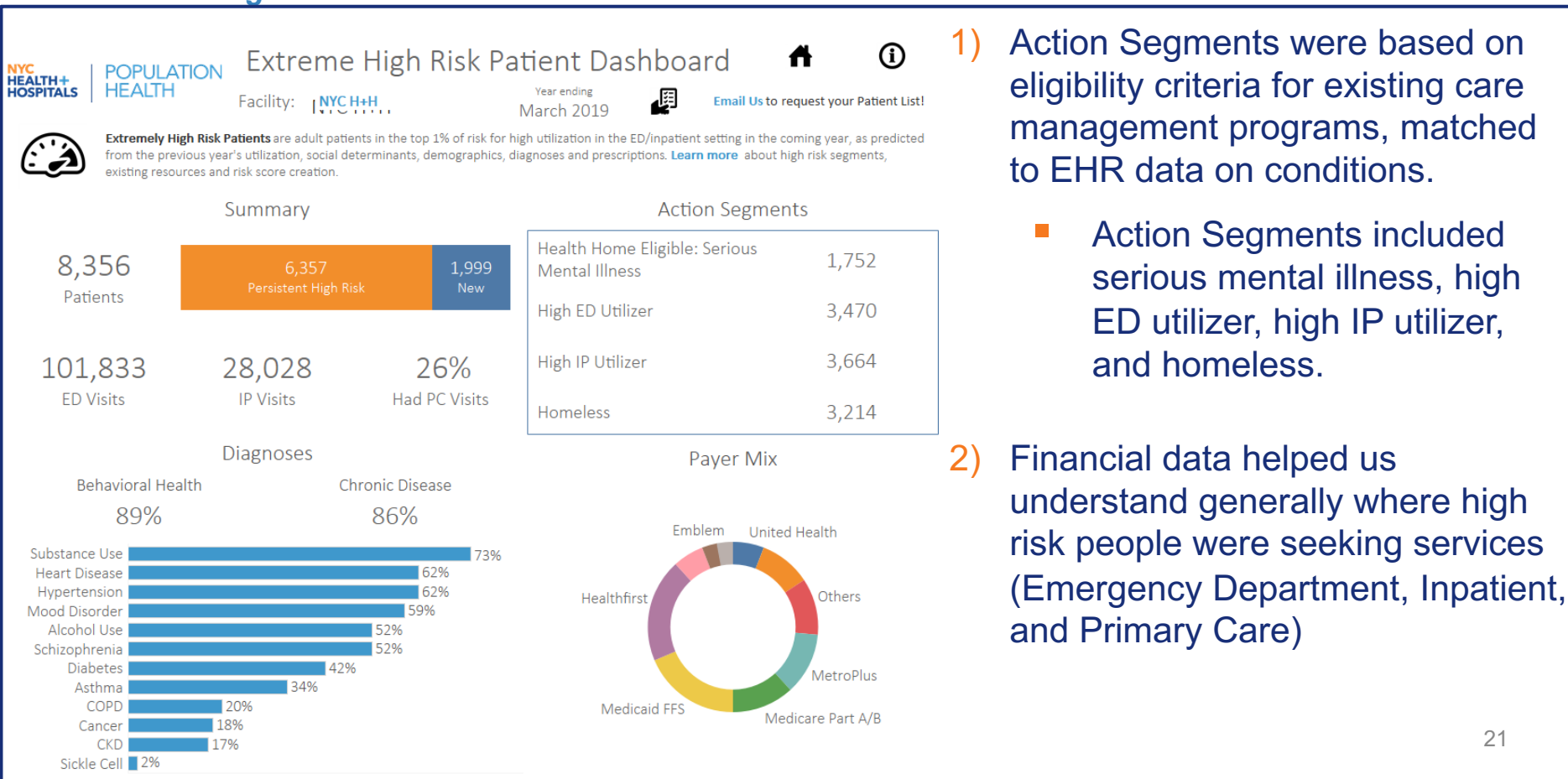


More Intensive

Any segmentation approach should be based on a combination of qualitative and quantitative data.

Example: Early Data Driven Segmentation at H+H

Our first approach to segmentation was designed to make use of existing resources, identifying cohorts of high-need people who were eligible, and appropriate for, our existing programs and services. This approach overlooked people whose needs extended beyond our existing services; more holistic segmentation was needed.



1) Action Segments were based on eligibility criteria for existing care management programs, matched to EHR data on conditions.

- Action Segments included serious mental illness, high ED utilizer, high IP utilizer, and homeless.

2) Financial data helped us understand generally where high risk people were seeking services (Emergency Department, Inpatient, and Primary Care)

Tool: Qualitative Segmentation

We engaged a cohort of 22 providers across the NYC Health + Hospitals enterprise to conduct focus groups and develop a more holistic segmentation approach. We also conducted a series of 15 individual interviews to refine this approach, and develop the below holistic segments.

The toolkits in the Appendix detail our approach and are intended for replication. This segmentation tool may also be used “out of the box” at other health systems.

Critical point in time

Mixed medical and behavioral health needs with acute utilization driven by recent life event

- Recent onset, illness exacerbation
- Change in health, lifestyle, environment, social status
- High ED (psych, CD, and medical), low IP, some ambulatory
- “Undertreated,” potentially undiagnosed

Capable, but conflicted

Primarily medical needs, with utilization driven by preference and perception

- Primary care sensitive conditions
- “Avoidable” utilization
- Patient preference/beliefs/values not aligned with existing ambulatory care offerings

Struggling to self-manage

Mixed behavioral and medical health needs, compounded by limited ability to live independently

- Mixed BH and medical complexity
- Functional limitations, DME and skilled nursing needs
- High IP admissions, outpatient MH and geriatrics utilization, polypharmacy

Disconnected by disparity

Mostly medical needs, potentially underlying SUD, with significant social risk as barrier to aftercare

- Appropriate ED/IP utilization
- Unable to follow-up with aftercare
- Social risk (uninsured, undocumented)
- Conditions worsen, result in readmissions and revisits in ED

Seeking relief from serious illness

High disease burden, mostly medical, but also serious, persistent mental illness, with limited insight into prognosis

- Advancing illnesses, palliative care needs for symptom management
- High IP admissions, ED visits, and specialty

Basic needs for better health

Significant behavioral health, with some chronic medical conditions, but lacking basic resources to get well

- Lacking basic fundamentals: housing, social support, food security
- Health outcomes limited by resources

Example: Application of Segmentation Approach at H+H

- Training Tool for Front-Line Staff: New York City Health + Hospitals is developing training tools around understanding patients with complex needs for a Community Health Worker program, based on the segmentation tool.
 - The qualitative segmentation is used to illustrate diverse needs of patients CHWs may encounter and suggest ways for CHWs to tailor their care to meet those needs as part of their patient-centered care plan.
 - Patient stories, personas, or visuals can illuminate the characteristics of each segment, and provide examples of ways to meet their needs at an individual or system level.
 - Assignment of individuals to a primary or secondary segment can help providers better understand the patient's holistic needs; this assignment may change over time and is not meant to be static.

III. Treating People with Complex Needs

A. Complex Care Models

- Enhanced Medical Home
- Home and Community
- Transitional Care
- Matching Care Models to Segments

B. Tool: Workflow Considerations

C. NYC H+H Pilot: Intensive Outpatient Primary Care At Bellevue Hospital Center

- Primary Care Safety Net Clinic Team
- Primary Care Safety Net Clinic Services
- Tool: NYC Health + Hospitals Multidisciplinary Case Conference
- Tips: Replicating a Pilot Program for Patients with Complex Needs

Complex Care Models

Complex Care models for high risk patients rely on a diversified approach tailored to the particular clinical realities of each target population, or segment. Knowing which patients are amenable to each model will help prioritize and optimize investments in this area. Existing complex care models tend to fall into a few broad, non-mutually exclusive categories based on service area:

A. Enhanced Medical Home

- Defined by the use of supplemental (embedded, standalone, centralized) health-related services which enhance, or reconfigure, traditional primary care
- Employs a team-based approach, with a provider and at least one other person

B. Home and Community

- Cross-disciplinary models which engage or focus on social risk interventions and behavioral health services
- Offers medical care and functional assistance

C. Transitional Care

- Facilitates safe, efficient transitions from hospital to the next site of care
- Usually nurse led, includes patient education in self-care, coaching patients and caregivers, home visits, and monitoring of patient.

A. Enhanced Medical Home

1. Intensive Primary Care

- **Intensivist:** Dedicated clinics exclusively serving a select group of patients; patients are assigned to a high-risk team with a reduced panel size, made up of physicians, LCSWs, care coordinators, RNs, sometimes a pharmacist or dietician.
- **Distributed Wrap Around:** PCPs maintain existing panels, with case management/care coordination offered exclusively to high risk patients. Resources are either embedded in practice or centralized.

2. Reverse Co-Location

- Primary care provider (PCP, PA, NP, RN) out-stationed part- or fulltime in a psychiatric specialty setting to monitor physical health of patients. Seeks to improve health care for persons with SMI generally, and who are at increased risk for diabetes, obesity, and high cholesterol due to the use of some second-generation antipsychotic medications.

Sources: "Using The Intensive Outpatient Care Program To Lower Costs And Improve Care For High-Cost Patients, " Health Affairs Blog, February 2, 2016.

"Evolving Models of Behavioral Health Integration in Primary Care, " Milbank Memorial Fund, 2010. <https://www.milbank.org/wp-content/uploads/2016/04/EvolvingCare.pdf>

B. Home and Community

1. Assertive Community Treatment (ACT)

- Offers treatment, rehabilitation, and support services, using a person-centered, recovery-based approach, to individuals that have been diagnosed with serious mental illness (SMI).
- Multidisciplinary treatment team of 10-12 staff members serving ~100 patients (case loads 10:1); provide 24-hour, individualized, open-ended, life-long continuity of care in the client's home or community.
 - Treatment team includes psychiatrist, psychiatric RN, employment specialists, substance abuse specialists, and additional mental health professionals.
- Developed over 30 years ago; most commonly used among homeless populations, and has demonstrated effectiveness in patients with high behavioral and physical health needs. ACT has been consistently associated with significant improvements in psychiatric symptoms, substance use, hospitalization and stable housing.

C. Transitional Care

1. Hospital at Home

- Nursing, physician, and other services as guided by a prescribed protocol are delivered in home after a patient is discharged from the ED.

2. Acute Care for Elders

- Aims to avoid functional decline and improve discharge readiness among older adults by adapting the physical environment to meet patient's needs.
- Holds daily interdisciplinary team conferences, using nurse-initiated guidelines for preventive and restorative care.
- Starts discharge planning at admission and actively includes family members in planning.

3. Transitions Coaching

- Advanced practice nurse (APN) serves as “transitions coach,” teaching the patient and caregiver skills needed to promote cross-site continuity of care. Coaching begins in the hospital and continues for 30 days after discharge.

Matching Care Models to Segments

Care Model	Proposed Segment Match	Explanation
Intensive Primary Care	Struggling to Self Manage	Mixed medical and behavioral needs. Limited ability to live independently; need for intensive services like nursing, pharmacy.
	Disconnected by Disparity	Medical needs are primary driver. Inability to follow up with aftercare + high social risks; high need for intensive services embedded in care and easily accessible.
Reverse Co-Location	Basic Needs for Better Health	Driven by significant behavioral health needs; followed by chronic medical conditions. Lack basic resources to get well. Primary care embedded in psychiatric specialty setting is appropriate for this population.
Assertive Community Treatment (ACT)	Basic Needs for Better Health	Driven by significant behavioral health needs; followed by chronic medical conditions. Lack basic resources to get well. ACT associated with significant improvements in psychiatric symptoms, substance use, hospitalization, and stable housing.
Hospital at Home	Critical Point in Time	Recent exacerbation of illness; potentially undertreated and underdiagnosed with high ED utilization. Model focuses on transition from ED to home, and maintaining stability.
	Seeking Relief from Serious Illness	Advancing illness and palliative care needs may require home based care.
Acute Care for Elders	Struggling to Self Manage	Mixed behavioral and medical needs. Limited ability to live independently; need for intensive services like nursing, pharmacy. Model aims to avoid functional decline and promotes family care planning.
Transitions Coaching	Capable, but Conflicted	Acute care utilization may be avoidable and driven by patient beliefs, preference, and values. Coaching provided in hospital and for 30 days post discharge; emphasis on patient activation, self-management, and connection to longitudinal care.

Tool: Workflow Considerations in Complex Care, Identified by Provider Focus Groups

Patient Targeting

- Stratify based on patient level data and prior utilization to identify highest needs.
- Prioritize interventions that influence basic needs.
- Partner with community based organizations.

Care Coordination & Navigation

- Implement 24/7 patient call lines and non-traditional practice hours.
- Utilize web-based health informational technology registries.

Transition Management

- Provide timely outpatient follow-up post discharge.
- Medication management, in the patient's home if possible.

Face-to-Face Contact

- Frequent patient/provider contact; can include clinician, case manager, CHW, and social worker.
- Build trusting, mutually respectful relationship.

Multidisciplinary Teams

- Implement interdisciplinary case conferencing.
- Build staffing models around analysis of patient mix/characteristics.
- Utilize motivational interviewing, health coaching, trauma informed care, health literacy, and de-escalation skills.

Self Management & Coaching

- Patient, family, and caregiver participation in goal setting and care plan development.

NYC H+H Pilot: Intensive Outpatient Primary Care At Bellevue Hospital Center

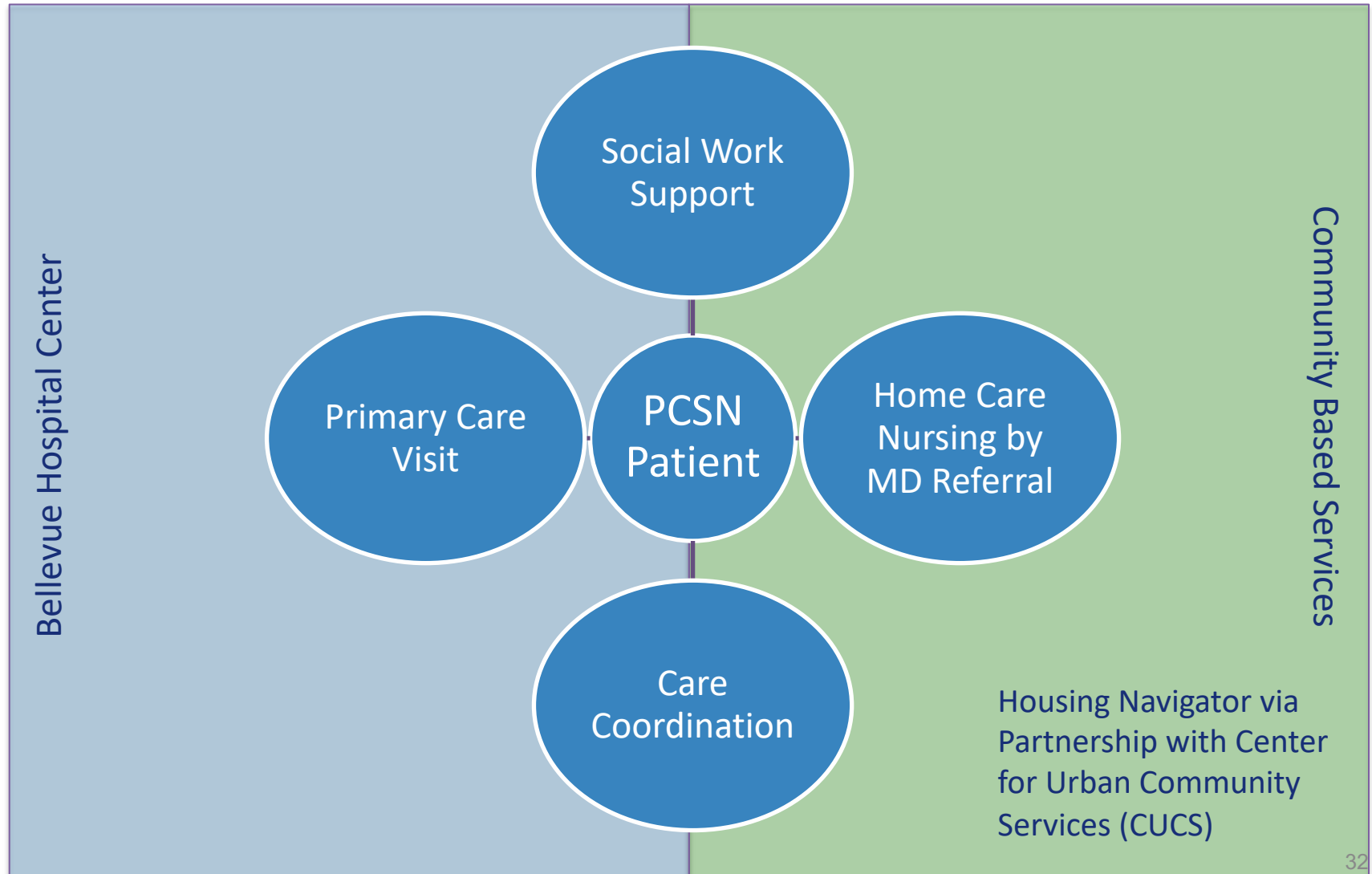
Clinic Objectives:

1. To effectively engage homeless patients with complex barriers to primary care.
2. To provide dignified, trauma-informed care focused on patient-oriented care goals while addressing addiction, mental health, and chronic disease.
3. To implement an interdisciplinary care team model in a safety-net health care system combining primary care, social work, care coordination, and nursing.

Key Clinic Elements:

1. Multidisciplinary team based care
2. Behavioral and addiction services (buprenorphine-waivered internal medicine physicians)
3. Patient-centered care planning
4. Intensive, in-person outreach and referral engagement
5. Connections to local community based organizations; embedded housing navigation services from a community based organization that specializes in services for people experiencing homelessness.

Primary Care Safety Net Clinic Services



Primary Care Safety Net Clinic Team

Team Role	Responsibilities
Primary Care Physician	Certified in substance use treatment; creates patient centered care plan; connects to ambulatory care specialty providers; and treats primary care needs.
Social Worker	Conducts outreach; follows up after acute events; connects to community based resources; and creates social needs care plan.
Care Coordinator	Conducts outreach; follows up after acute events; ensures patients have appointments; and liaises between patient and providers on care plans.
Home Care Nurse	Provides chronic disease monitoring and education, medication management, wound care, and other nursing needs identified by PCP treated wherever each patient calls home.
Physician Champion	Provides oversight for all team members; builds relationships with external organizations in complex care; and conducts regular operational and team meetings.

Tool: NYC Health + Hospitals Multidisciplinary Case Conference

Each month, a social worker, care coordinator, and home care nurse meet with a primary care physician to review their active patient roster for the Primary Care Safety Net Clinic at Bellevue Hospital Center. Due to timing of a new electronic health record system rollout, the care team did not have a shared IT platform but still needed to communicate about shared patients. The multidisciplinary case conference was developed as a monthly touchpoint to address this business need.

This is a sample Excel template saved in secure shared drive to guide the multidisciplinary case conference:

Name	MRN	Care Coordination/Social Work/Home Care Nursing/Medical Updates	Follow Up Needed	Future Home Visits	Recent Emergency or Inpatient Visits	High Risk Patient?	Ramp Down or Graduation?
Patient 1	12345	Discharged from previous health home. Diabetes getting under control through weekly visit to clinic and plant based diet.	Should be our health home patient, enroll at next visit.		ED on 2/1/19 for medication refill	Yes- Medically complex w/ high # ED visits.	No
Patient 2	54321	Formerly street homeless. Now lives in shelter in Bronx. Walked in for respiratory issue last weds, told to come again for follow up on Friday and no showed.	Needs home care RN for wound. Call patient to reschedule primary care appt.	RN for wound care to be scheduled		No	No

Tips: Replicating a Pilot Program for Patients with Complex Needs

- Conduct a needs assessment to determine what subpopulations may not have existing resources or lack sufficient resources within the health system or community.
 - Bellevue Pilot: A combination of facility stakeholder interest and data analysis identified a need to create a medical home for high risk patients experiencing homelessness at Bellevue.
- Identify existing resources that may be underutilized or in the process of being phased out.
 - Bellevue Pilot: Part of the team (care coordinator and social worker) were available because their previous programs were being phased out; the H+H-owned Community Care provided these staff to be embedded in the pilot clinic.
- Start small and iterate based on experience.
 - Bellevue Pilot: The program started with 3 morning clinic sessions; gradually ramped up to 5 sessions after 7 months. The team conducts monthly, all-hands operational meetings to discuss workflow, review data, and adjust processes as the team grows. Communicate experience and data to leadership to promote their buy-in.

Appendix

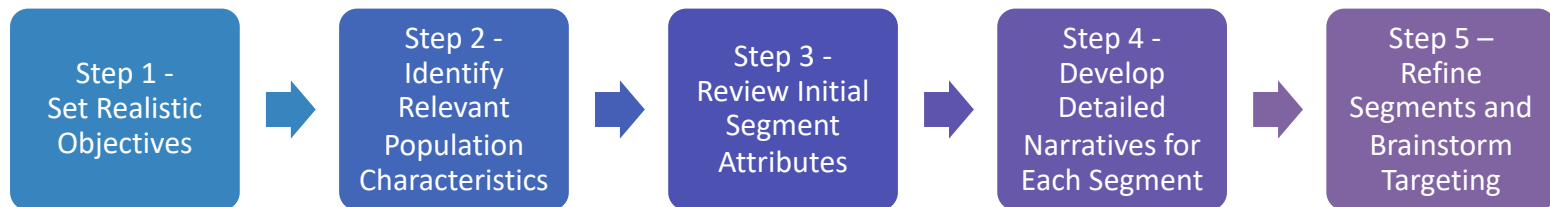
- I. Provider Focus Group Toolkit
- II. Provider Interview Toolkit

These sections detail the focus group and interview process New York City Health + Hospitals developed to create a more holistic segmentation approach to patients with complex needs, which was presented earlier in this guide. The segmentation can be used “out of the box” or customized to other system’s unique patient populations.

H+H encourages other health systems to use these toolkits to engage front-line providers in complex care or other issues relevant to their health systems.

I. Provider Focus Group Toolkit

Four monthly focus groups were conducted with a group of 22 NYC Health + Hospitals providers to develop high-risk patient segments.





Step 1 – Set Realistic Objectives

1. Identify your resources, including:

- Staff Capacity
- Available timeframe for process
- Types of provider networks
- Systematic vs. specific knowledge of providers, based on their roles.

2. Set objectives that align with your resources.

- The objective of the process needs to align with your available resources. Start with a broad list of questions, and narrow down based on what is realistic.

H+H's Resources:

- ✓ *A group of 22 clinical staff from across H+H who had experience with and understanding of patients with complex needs; selected for diverse perspectives on the topic.*

H+H's Objectives:

- ✓ *Focus groups were designed to understand common characteristics of patients with complex needs; define and refine segments; and discuss ideas for targeting effectively.*



Step 2 – Identify Relevant Population Characteristics

- 1. Introduce concept of patients with complex needs and brainstorm characteristics.**
 - Common factors could include: demographics, social risk, health status type and number of conditions, behaviors, and attitudes.
 - Aim for quantity of ideas in initial exercises; refine down to the most meaningful ideas later in the process.
- 2. Consider developing a participant worksheet template or using theme poster boards to capture the group's thoughts.**
- 3. Utilize a framework to help sort through meaningful information and develop an initial group of segments.**
 - H+H used the Measureable, Accessible, Substantial, & Actionable framework to guide participants in which characteristics could be combined to form a segment.

Tool: Participant Worksheet on Patient Characteristic Brainstorming

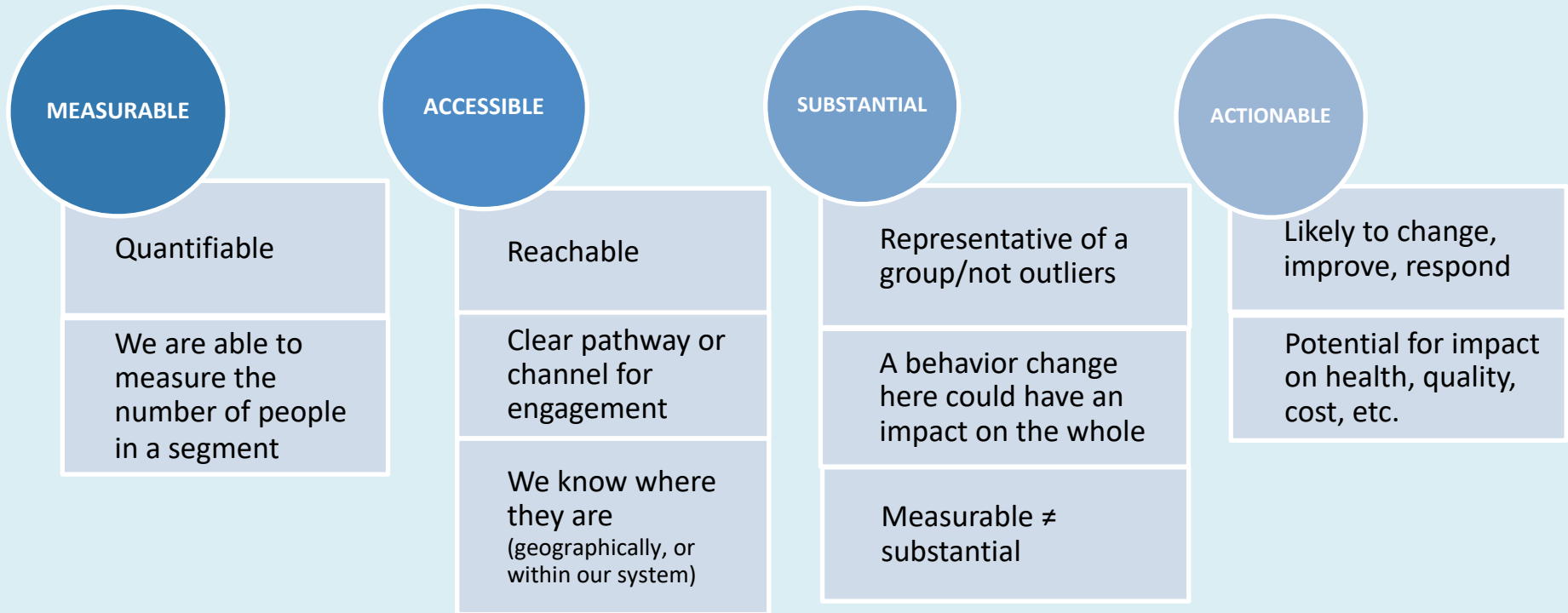
List all the characteristics you think may be relevant to our high-risk population. This exercise favors quantity over quality, so try and identify as many characteristics as possible.

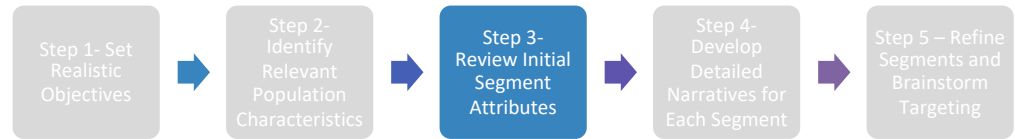
Demographics	Social Risk	Health Status	Behaviors	Attitudes
<i>Which physical and situational characteristics are common?</i>	<i>What are the community, environmental, political and economic risk factors that impact a person's ability to stay healthy?</i>	<i>Describe factors that influence health and well-being. Which are the most common types and number of conditions?</i>	<i>What are the behaviors or practices related to a specific product or service. Could also include descriptions of health literacy and ability to self manage.</i>	<i>What are the beliefs or values related to a particular service or product?</i>

Example: Initial Themes from NYC Health + Hospitals Focus Group

Health Status		Demographics		Social Risk	
Diagnosis	Substance Use Disorders	Age	Young Adults	Housing	Homeless
	Kidney Failure and ESRD		Middle Aged		Shelter Dwelling
	Heart Failure		Elderly		Stable Housing
	Chronic Diseases	Behavior		Social	No family support
	Serious Mental Illness	Willingness/ Amenability	Medication adherence	Isolation	No Social Support
	Asthma/COPD		Treatment adherence	SES	Low SES
	Depression		Appointment adherence	Legal	Undocumented
	Anxiety		Refusal of services	Attitude	
Complexity	Comorbidity		Utilization Patterns	Lost contact	Beliefs
	Dialysis	Appropriate		Values	Denial
	Advancing Illness/End of Life	Primary Care seeking in ED			De-prioritization of health
	Illness Burden	Multiple/vulnerable transitions			Competing priorities (job, family)
	Uncontrolled chronic diseases	Post-acute follow-up		Perceptio n	Rejected
Disease Stage	Change in cognition	Unable to navigate system	Overlooked		
	Newly diagnosed	Healthcare navigation	Preference		Needs not met
	Under/undiagnosed			Self- Management Ability	Health Literacy
Medication Fill/Refill	Access on-demand				
Coping Skills	Flexible scheduling				
ADLs					

Tool: Framework for Identifying Significant Characteristics





Step 3 – Review Initial Segment Attributes

1. **Develop a succinct, high level description of each patient segment.**
2. **Identify specific examples of where and how patients “enter” the segment.**
 - Think of life transitions and changes in medical, social, or behavioral needs that are common to the group.
 - What is the primary driver of patient need?
3. **Identify medical, social, and behavioral health commonalities for the segment group.**
 - What types of conditions would be included on the patient’s electronic health record?
 - What behaviors and attitudes may be present?
 - What types of environments and communities may this group be part of?

Example: Initial Segments from NYC Health+ Hospital Provider Focus Group Themes

Recent onset,
exacerbated
illness

Multiple chronic
conditions,
preventable ED/IP

Homebound
Elderly/Long-term
Care

Vulnerable
transitions of care

Advancing Illness

Disengaged,
unmotivated,
disconnected

Engaged,
motivated, unmet
need

Justice involved

Complex, multi-
morbidity

Example: H+H's Initial Attributes for a Segment

Critical point in time patients are those who experience a sudden change in health, environmental condition, or lifestyle which triggers or exacerbates an underlying, unmet medical and/or behavioral health need.

Examples of critical points in time include:

- Individuals discharged from correctional setting
- Recent trauma
- Relapse, increased substance use
- Change in housing
- New diagnosis

Diagnoses and symptoms for this group might include:

- Depression
- Anxiety
- Other mood disorders
- Suicidal ideation, intentional self-inflicted injury
- Pain, back pain, abdominal pain, chest pain
- Withdrawal
- Poisoning by psychotropic agents

These individuals may have frequent interactions with emergency medical, psychiatry and chemical dependency services (mostly ED, Psych ED, detox, but minimal IP), but limited follow-up in outpatient.



Step 4 – Develop Detailed Narratives for Each Segment

1. Building upon the descriptions created in the previous step, review the language with a holistic lens.
 - Is this a patient friendly label? Is it easy to understand based on your experiences?
 - Does this capture the diversity of patient experiences?
2. Prompt feedback on distinctions between the each segment.
 - What is distinct in utilization patterns across each group?
 - How are they different from each other overall, and what may be redundant?



Step 5 – Refine Segments and Brainstorm Targeting

1. Present the refined segments in a dashboard format, showing the high-level description of each.
2. Prepare an activity for the group to brainstorm the actionability of each segment through the targeting of interventions.
 - Ask each participant to present a patient story for a segment from their experience as providers. The story should encompass the patient's lives outside of the healthcare system and within the context of the healthcare system.
 - Using an inventory of care management approaches or facility-specific resources (staff or program), have participants identify which resources would be most appropriate to care for a patient within a segment.
 - Create an open ended worksheet or whiteboarding exercise to identify ways to engage people in each segment and treat them (without the use of an inventory of care management approaches or facility-specific resources).

Tool: Refined Segments Dashboard; Developed by H+H Focus Groups

Critical point in time

Mixed medical and behavioral health needs with acute utilization driven by recent life event

- Recent onset, illness exacerbation
- Change in health, lifestyle, environment, social status
- High ED (psych, CD, and medical), low IP, some ambulatory
- “Undertreated,” potentially undiagnosed

Capable, but conflicted

Primarily medical needs, with utilization driven by preference and perception

- Primary care sensitive conditions
- “Avoidable” utilization
- Patient preference/beliefs/values not aligned with existing ambulatory care offerings

Struggling to self-manage

Mixed behavioral and medical health needs, compounded by limited ability to live independently

- Mixed BH and medical complexity
- Functional limitations, DME and skilled nursing needs
- High IP admissions, outpatient MH and geriatrics utilization, polypharmacy

Disconnected by disparity

Mostly medical needs, potentially underlying SUD, with significant social risk as barrier to aftercare

- Appropriate ED/IP utilization
- Unable to follow-up with aftercare
- Social risk (uninsured, undocumented)
- Conditions worsen, result in readmissions and revisits in ED

Seeking relief from serious illness

High disease burden, mostly medical, but also serious, persistent mental illness, with limited insight into prognosis

- Advancing illnesses, palliative care needs for symptom management
- High IP admissions, ED visits, and specialty

Basic needs for better health

Significant behavioral health, with some chronic medical conditions, but lacking basic resources to get well

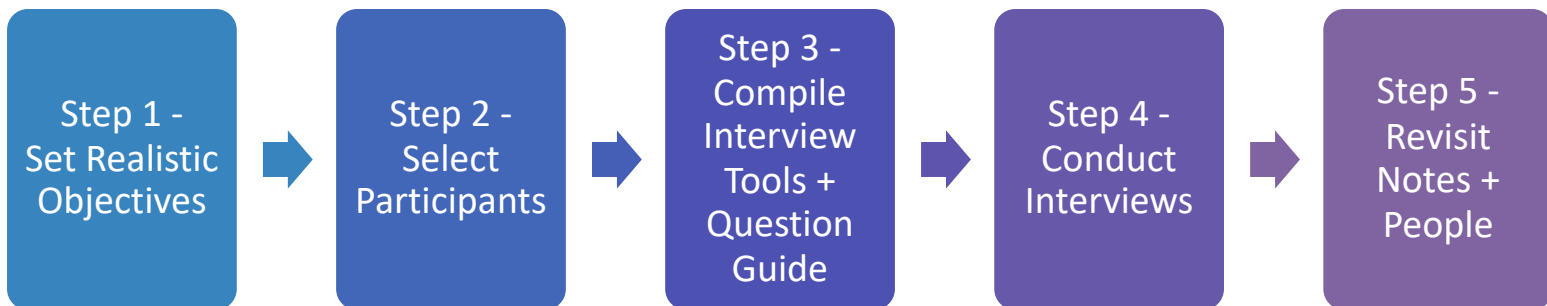
- Lacking basic fundamentals: housing, social support, food security
- Health outcomes limited by resources

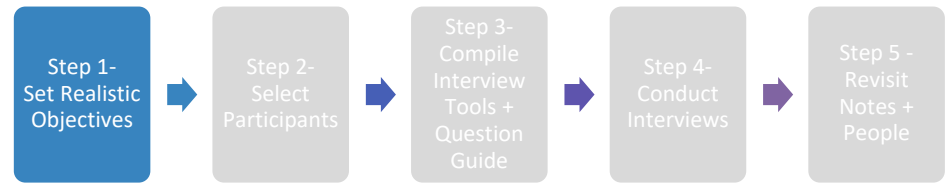
Tool: Open-Ended Targeting Brainstorming Worksheet

	How might we reach them?	How might we care for them?
Critical point in time		
Capable, but conflicted		
Struggling to self-manage		
Disconnected by disparity		
Seeking relief from serious illness		
Basic needs for better health		

II. Provider Interview Toolkit

Following the conclusion of provider focus groups, a series of interviews were conducted with providers to further refine the segmentation approach.





Step 1 – Set Realistic Objectives

1. Identify your resources, including:

- Staff Capacity
- Available timeframe for process
- Types of provider networks
- Systematic vs. specific knowledge of providers, based on their roles.

2. Set objectives that align with your resources.

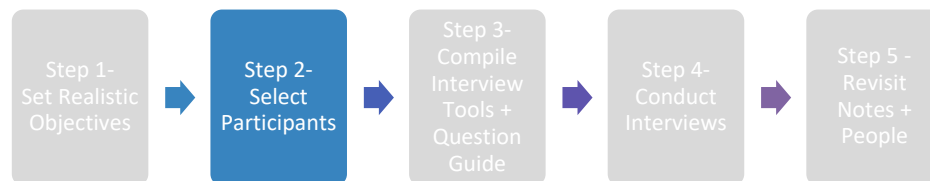
- The objective of the process needs to align with your available resources. Start with a broad list of questions, and narrow down based on what is realistic.

H+H's Resources:

- ✓ *Over a 3 month period, one staff member conducted 15 interviews with providers new to the segmentation in a mix of roles across 4 NYC boroughs.*

H+H's Objectives:

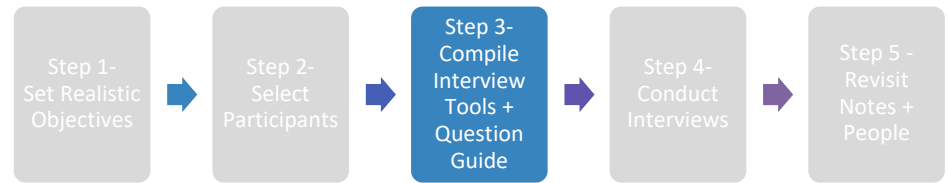
- ✓ *Interviews were designed to provide a “gut check” on segmentation + targeted review of high risk patient lists.*



Step 2 – Select for Diverse Perspectives

1. Consider factors that would increase diversity of perspectives, including:

- Geographic location of facility
- Type of facility
- Service line within facility
- Type of provider specialty and/or degree type
- Length of Provider employment + depth of experience in facility
- Provider racial + ethnic diversity
- Patient racial + ethnic + socio-economic diversity
- Presence of many patients defined as high risk/complex
- Other factors relevant to objectives set



Step 3 – Compile Interview Tools + Guide

1. Create high risk patient lists for discussion

- Create high risk patient lists to guide discussion; can use simple definition like a utilization threshold.
- Include key information like patient name, DOB, and MRN for chart review.
- Provide list copies to interviewees.

2. Develop an interview guide

- Open ended questions only – avoid yes/no answers.
- Center questions around the defined objective.
- Consider what should be highly structured vs. what can be open ended.

Tool: Sample High Risk Patient List Format

Predicted Days Acute Utilization	Name	MRN	DOB	Medicaid ID	Attributed Facility	Last PC Date	Last Facility Date	Last Visit Type	Risk Drivers	Primary Segment Assignment	Notes Primary Segment Assignment
25	Doe, Jane	12345	1/1/1900	12345	Bellevue Hospital	3/1/19	3/15/19	ED	End stage renal disease; isolated from family; visit transportation problem	Seeking relief from serious illness	Primary medical complications result in acute care

1. Pre- Interview: Data Prepared in Advance of Discussion

2. During Interview: Provider Assessment of Patient

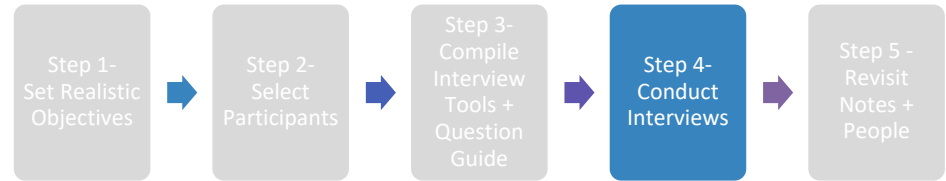
Tool: Sample Interview Guide

General Questions on Complex Patients:

1. What are the factors that contribute to risk of acute care utilization?
2. In your experience, what are effective ways to address these patient's needs? Why? What are some ways that have not been effective in addressing patient's needs and why?
3. What are the key elements of a successful program at your facility to address complex patients' needs?
4. How do you interact with high risk patients as a [professional role]?

Questions on Patient Lists:

1. Please review this list and flag patients you recognize as high risk.
2. What are the drivers of this individual patient's risk? Please include social, behavioral, and medical drivers as applicable.
3. Given those risks, what segment/profile does this individual patient fit into? Why does this patient fit this segment? Is there a secondary or tertiary segment that may also describe some aspect of this patient?
4. What types of services or programs do you feel would reduce this individual patient's risk? Is that true for other patients in this segment/profile?



Step 4 – Conduct Interviews

1. Handle logistics + communicate them in advance

- Confirm the time + location.
- Bring any needed technology or materials.

2. Take notes effectively

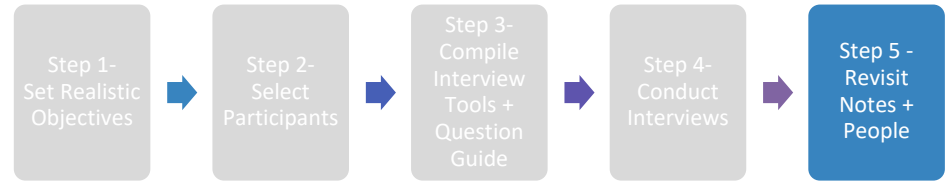
- Consider recording the interview.
- Develop a standard template to record notes.
- Transcribe notes as soon as possible after the interview.

3. Use listening + relationship skills well

- Order matters: Begin the interview with friendly conversation and set up the purpose to establish good rapport. Ask harder questions later in the interview.
- Be prepared to reframe questions as needed.
- Use follow up questions, “Can you give an example?” to dive more deeply.
- Send a thank you note to the interviewees within 24 hours.

Resources: Conducting Interviews

1. “Qualitative Interview Tipsheet” Duke University, Initiative on Survey Methodology. Available from: <https://dism.ssri.duke.edu/survey-help/tipsheets/tipsheet-qualitative-interviews>
2. “Strategies for Qualitative Interviews” Harvard University, Department of Sociology. Available from: https://sociology.fas.harvard.edu/files/sociology/files/interview_strategies.pdf
3. “7 Steps for Conducting a Successful Expert Interview” Medium. Available from: <https://medium.com/@deepbench/conducting-expert-interviews-heres-everything-you-need-to-know-90534cf5418d>



Step 5 – Revisit Notes + People as Needed

1. Refine interview notes into themes

- Utilize sticky notes or a whiteboard to summarize compelling thoughts from each interview.
- From high level interview notes, begin to group similar ideas into broader themes.
- Themes can include segment specific observations, operational considerations, patient needs, insights on gaps in care, etc.

2. Revisit participants for follow up conversation

- Refined notes can help illuminate the need for further conversation where there are knowledge gaps.
- Providers may also express interest in having a follow up conversation– this is a great way to keep them engaged.

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