SUPPLEMENTAL MATERIAL

Interview guide for health system leaders

Background:

1. What is your role at [x organization]? (Title, responsibilities)
2. For how long have you been at that position?
3. What prior healthcare leadership experience do you have?

Defining Preventable and Impactable High Utilizers

1. How do you or your organization define patients that are high cost/high need?
   Probe: is it based on cost, number/type of services

2. When you think about these high cost, high need patients, are there particular categories of patients that come to mind?

3. The researchers for this study identified several categories of patients that we think of as high cost and high need. Please give us your thoughts on each of the following groups:

   Probe: Categories we a priori define

4. How do you define "preventable" high utilization?
   Probe: Do any of the patient categories we discussed seem to capture preventable high cost/high need patients?
   Are there any groups of preventable high cost/high need patients that we have missed?

5. Of the preventable high cost high need patients, who do you think are most impactable (ie targeted interventions can actually reduce the level of unnecessary utilization) and why? Who are least impactable and why?

6. If you could prioritize which of these groups to focus getting data on, which would you and why?

7. When you think about high cost/high need patients, are there any recurrent questions that plague you?
   Probe: What are the biggest uncertainties?

Organizational Identification and Management of Preventable High Utilizers

8. How, if at all, does your organization currently identify and track high cost/high need patients?

        Probe: What data sources or software products do you currently use?
            Who gets this information?

            What does your organization do with the information on high cost/high need patients?

9. Which interventions are most successful at identifying and addressing high cost/high need patients? What are the biggest challenges?

Predictive Models

For the next part of the interview, we want to focus on ways that healthcare systems can better predict and track patients who are high cost/high need, with the goal of being able to better target them for interventions such as care management.

10. Does your organization currently develop any models to predict patients who are likely to be high cost/high need patients in the future?

        If yes: how are these models developed?
            Which features of these models are currently most beneficial?
            How could these models be improved?

        If no: What, if any characteristics, would such a model have to have in order to be useful to your organization?

11. Imagine you had a regular report with information about high cost/high need patients. What information would you want included?

12. We are trying to figure out which characteristics for a predictive model are most important. I am going to present you with a list of characteristics and some definitions. Please rank them from most to least important: (provide index cards).
    a. Accuracy
    b. Generalizability
    c. Portability
    d. Robustness of prediction
    e. Feasibility
    f. Usability

        g. Interpretability

Probe: Why did you chose this order?

What, if any, characteristics were not included that should be?

Dissemination

13. One of the goals of this project is to develop a way of generating predictive models on high cost/high need patients that could be shared and utilized by organizations across the country. How do you think information on this type of project should be disseminated more broadly to health systems?

Focus group discussion guide for front-line physicians

Background:

4. What is your role at [x organization]? (Title, clinical responsibilities, other responsibilities?)
5. For how long have you been at that position?
6. What prior healthcare experience if any do you have?

Defining Preventable and Impactable High Utilizers

14. How do you define patients that are "high cost/high need?"

Ie: patients who cost the system the most, patients that use the most services…

15. When you think about high cost/high need patients are there particular categories of patients that come to mind?

16. The researchers for this study identified several categories of patients that we think of as high cost/high need patients. Please give us your thoughts on each of the following groups:

        Probe: Categories we a priori define

17. How do you define "preventable" high utilization of healthcare services?
        Probe: Do any of the patient categories we discussed seem to capture preventable high cost/high need patients?
            Are there any categories that we missed?

18. Of the preventable high cost/high need patients, who do you think are most impactable (ie targeted interventions can actually reduce the level of unnecessary utilization) and why? Who are least impactable and why?

19. If you could prioritize which of these groups to focus interventions on, which would you and why?

Interventions

For the next part of the interview, we want to focus on ways that healthcare systems can better care for patients who are high cost/high need, with the goal of being able to better target them for interventions such as care management. We want to gather your thoughts on interventions that might be useful for this group of patients, as well as information that might be useful to you as a provider caring for some high cost/high need patients.

20. As a clinician, do you get any data on which of your patients are high cost/high need patients (in other words, frequent users of the healthcare system)?

>>> If yes: In what format? How useful is this information? How could it be improved?
>>> If no: what type of data would be useful to you?

21. Which interventions do you, or other members of your team utilize to address high cost/high need?
>>> Probe: What is most successful?
>>> What are the biggest challenges?

22. If you could receive information that predicted which of your patients were likely to be high cost/high need patients in the future, how helpful would it be to use as a practicing clinician?
>>> Probe: What type of information would you want included?

23. We are trying to figure out which characteristics for a predictive model are most important. I am going to present you with a list of characteristics and some definitions. Please rank them from most to least important as a group (provide index cards).
    a. Accuracy
    b. Generalizability
    c. Portability
    d. Robustness of prediction
    e. Feasibility
    f. Usability

       g. Interpretability

    Probe: Why did you chose this order?

        What, if any, characteristics were not included that should be?

Dissemination

24. Should health systems prioritize getting information about high cost/high need patients to front line physicians (why or why not?)

    Probe: If yes, how should this information be delivered?

Focus group discussion guide for HNHC patients and their caregivers

1. Think about yourself, or friends or family members, who have to go to the doctor, or the hospital, or the emergency room frequently. What are the factors or conditions that you think contribute to the need to get services often?
         Probe: visiting the emergency room
         Probe: getting admitted to the hospital

2. What do you think could be done to help reduce how often these people have to go to different doctors, the emergency room, or the hospital?
   a. Are there things outside the healthcare system that could help?

3. We came up with several groups of patients that based on records seek care most frequently and who we think could be helped. Please give us your thoughts on each one.

4. Are there any other patient groups you would add?

5. Are there any that you think we should focus efforts on and why?

6. Are there any you think that we should not focus on and why not?