Hospital at Home: Patient Eligibility, Referrals, and Intake

Patient Evaluation

Having a pool of patients to consider for Hospital at Home (HaH) is just the first step. Next comes the process of determining their eligibility. At least one HaH clinical team member must evaluate a patient before he or she can be admitted. In general, patients eligible for care in a HaH program are sick enough to require hospitalization but meet previously validated medical eligibility criteria to ensure that the program is safe and appropriate for them. The inclusion criteria listed below include a specific set of eight acute medical conditions that can be treated successfully via home-based acute care. These criteria do not exclude patients with multiple chronic conditions.

Also, patients must live in a stable residence that meets their needs for safety, shelter, and basic utilities. And they must reside within a specified distance of the hospital offering the HaH program, which will vary depending on the region. Reasonable boundaries might be defined by a perimeter that is roughly a 30- to 60-minute commute from the hospital.

Inclusion and Exclusion Criteria

Specific inclusion and exclusion criteria are described below for Hospital at Home (not for Mount Sinai's Observation at Home variant):

Administrative Inclusion/Exclusion Criteria	
Patient meets ALL of the following INCLUSION criteria:	Patient must meet **ALL** of the four inclusion criteria to be considered for treatment in HaH
1. Patient lives in the community	Patient must live in the community and not in a nursing home or shelter. If they live in a single room occupancy facility (SRO) they must have under 3 persons share a bathroom and the location of the bathroom must be accessible to the patient given their current functional status.
2. Patient lives in HaH catchment area	Patient must live within the predefined HaH geographic catchment area (determined by each HaH adopter) or be willing to stay with a friend or relative in the catchment area.

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3. Meets age requirement	Patient must meet the age requirement for the HaH program. This will vary depending on the models adapted.
4. Meets insurance eligibility	Patient must meet the insurance eligibility of the program.
And does not meet ANY of the following exclusion criteria:	To remain eligible for HaH treatment, the patient must **not** meet ANY of the exclusion criteria. The presence of any single administrative exclusion criteria means the patient should be treated in the traditional acute hospital setting.
5. Homeless person	Exclude if the patient does not have his or her own home or apartment with fixed address and cannot go to a fixed address for the 30 days of the program.
6. Unsafe or inappropriate house	Exclude patient if the home lacks heating system, electricity, or telephone, or is structurally unsound or unsafe (see safety questionnaire) unless they can move to a place with those resources.
7. Active drug abuse	Because the HAH program cannot send a patient with known active drug abuse home with an IV, all active drug use patients are excluded.
8. Methadone program	Except patients on a weekly dose that has already been dispensed and is readily available at home, the expected stay in the acute portion of the program needs to be evaluated according to the methadone schedule.
9. Patient requiring around-the-clock (ATC) home health aide who does not already have one in place or cannot hire one immediately	Patients needing ATC care need to have that already established or hire immediately. The HaH program is unable to provide ATC custodial care.

General inclusion/Exclusion Criteria for Hospitalization at Home (HaH)	
10. Patient requires acute hospital admission for a HaH acceptable condition	Patient is judged by a physician or NP to require acute hospital admission for a HaH acceptable illness. That is, if there were no HaH program, the patient would be admitted to the hospital and not sent home from the ED, clinic, or physician office with outpatient treatment or outpatient treatment supplemented by usual home care services.
And does not meet ANY of the following exclusion criteria:	To remain eligible for HaH treatment, the patient must <u>not</u> meet ANY of the clinical exclusion criteria. The presence of any single exclusion criteria means the patient should be treated in the traditional acute hospital setting.
EXCLUSIONS FOR ANY OF THE TARGET DIAGNOSES:	
11. Patient requires critical care unit admission	Exclude patient if critical care unit admission is required.
12. Hypoxemia with oxygen saturation < 90% or PO_2 < 60 mm Hg uncorrected with < 6 liters per minute oxygen supplementation by nasal cannula	Exclude patient if the O_2 saturation is less than 90% or PO_2 < 60 on arterial blood gas after initial treatment and cannot be corrected with oxygen delivered by nasal cannula at a rate of $\leq$ 6 liters/minute. Exclude patient if requires noninvasive positive pressure ventilation for respiratory distress.
13. Bronchodilator (nebulizer) treatments required every 2 hours or more frequently	Exclude patient if patient requires nebulizer treatments at an interval of every 2 hours or more frequently.
14. Arterial blood gas measurements required	Exclude patient if patient requires ongoing arterial blood gas measurements.

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15. Acute illness requiring hospital admission independent of target diagnosis, except for Congestive Heart Failure (CHF), Chronic Obstructive Pulmonary Disease (COPD), Hypertension (HTN), hyperglycemia, asthma, deep venous thrombosis (DVT) and or community acquired pneumonia (CAP)	Exclude patient if there is a concomitant acute illness that cannot be managed in the home (seizure/cerebrovascular accident-focal deficit). For example, a patient with CHF who also has gastrointestinal (GI) bleeding would be excluded because the patient would have been admitted for the GI bleed even if he or she didn't have CHF. However, a patient with CHF who also has one of the other conditions that can be treated in HaH, such as COPD or CAP, is not to be excluded.
16. Associated with ischemic chest pain or other symptoms strongly suggestive of ischemia or myocardial infarction (MI)	Exclude patient if he or she is experiencing angina or ischemic-type chest pain with EKG evidence of ischemia or chest pain suggestive of ischemia of significant duration without ischemic EKG changes. If patient has negative troponins in emergency room and the chest pain is then not thought to be ischemic, the patient may be treated in HaH.
17. Hyperglycemia with ketoacidosis: serum ketones+, serum bicarbonate < 20 meq / L or pH < 7.30)	Exclude patient if he or she requires treatment for diabetic ketoacidosis (DKA).
18. Septic shock	Hypotension not restored (SBP > 90) by < 2-3 liters oral or intravenous replacement.
19. Hypotension: systolic blood pressure < 90 mm Hg (unless baseline)	Exclude patient if the systolic blood pressure is < 90 mm HG after treatment in the ED or clinic site and this blood pressure is not the patient's baseline blood pressure.
20. Dialysis-dependent patients	Exclude if patient goes out to a dialysis center and receives hemodialysis (i.e., home hemodialysis and peritoneal dialysis will be considered).
21. Expected terminal event, except for someone receiving palliative care as part of the HaH program (see below)	Exclude patient if it is planned or highly anticipated that he or she will die during his or her hospital stay unless the patient is receiving palliative care as part of the HaH program (see criteria below).
22. Associated with marked altered mental status	Exclude patient if he or she exhibits a marked altered mental status, unless a member of the HaH team suspects the cause is a treatable condition in the home.

23. Severe immunosuppression (AIDS, neutropenia, organ transplant with immunosuppressive therapy, chemotherapy or cytotoxic drug use, multiple myeloma, lymphoma)	Severe immunosuppression NOT automatically excluded. All of these cases need to be discussed with the corresponding inpatient or outpatient transplant or oncology team.
24. Patients needing acute or subacute rehab post-discharge from Hospital at Home	Due to insurance regulations where HaH is considered an outpatient program and patients are unable to go from outpatient to acute or subacute rehab in many insurance programs, patients needing them are excluded. (As insurance barriers change, this exclusion can be removed.)
25. Patient's only access is a central line	Patient must be treated with a peripheral, midline or port.
26. Discretionary judgment on the part of the medical provider	An otherwise eligible patient may be excluded for reasons not otherwise specified if the HaH provider believes that patient would be at significant risk.

Diagnosis #1. Congestive Heart Failure (CHF) EXCLUSIONS in HaH:/Observation at Home (ObsaH)	
27. Associated with hemodynamic instability	Exclude patients with hemodynamic instability, including severe arrhythmias, symptomatic bradycardia/tachycardia, HR < 40, and HR > 120.
28. Associated with known or suspected severe valvular disease of aortic or mitral valve	Exclude patient if CHF associated with aortic stenosis with valve area known to be in critical range or associated with gradient > 40 mm or severe mitral stenosis. Echocardiogram need not be obtained solely to screen for severe valvular disease to exclude patient from HaH care if clinical suspicion is low.
29. Suspected pulmonary embolism and a CHF exacerbation at the same time	Exclude patient if he or she is suspected of having a pulmonary embolism and the diagnosis of pulmonary embolism cannot be excluded before admission.

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Diagnosis #2. Cellulitis EXCLUSIONS in HaH/ObsaH:	
30. Associated with significant peripheral vascular disease, fasciitis, or osteomyelitis	Exclude patient if there is suspicion for conditions that may require significant inpatient diagnostic workup or surgical intervention, including necrotizing soft tissue infections, osteomyelitis, compartment syndrome, abscess, or extensive tissue damage possibly requiring grafting.
31. Orbital cellulitis	Exclude patient if cellulitis is in the orbital area.
Diagnosis #3. Hyperglycemia (DM) EXCLUSIONS in HaH /ObsaH:	
All exclusions under general	
Diagnosis #4. Deep Vein Thrombosis (DVT) EXCLUSIONS/ Pulmonary Embolism (PE) EXCLUSIONS in HaH/Obs:	
32. BMI > 40 kg/m² or weight > 120 kg	
33. Platelet count < 100 K	Or significant drop from baseline.
34. Uncontrolled HTN ≥ 200/120	Systolic ≥ 200 OR diastolic ≥ 120.
35. Elevated risk of bleeding: active peptic ulcer disease, recurrent and recent epistaxis, hemophilia or other bleeding disorder, varices	Patients are excluded that have an elevated risk of bleeding such as active peptic ulcer disease, hemophilia, or varices.
36. Active bleed: hematemesis, hematochezia, melena, gross hematuria	Patients are excluded if they have active bleed: hematemesis, hematochezia, melena, gross hematuria.
37. Surgery or spinal anesthesia within 7 days	Within 7 days prior to presentation to ED.
38. Limb-threatening thrombosis	
39. IVC filter placement planned	
40. Acute or decompensated hepatic failure	

41. Patient already on and compliant with anticoagulation	
42. End stage renal disease	
43. Thrombolysis /embolectomy needed	
44. CVA within one month or intracranial aneurysm	
45. Decompensated right heart failure	By echocardiogram or by exam: edema significantly above baseline, anasarca, and hepatomegaly. If patient is clinically stable and there is low suspicion for decompensated right heart failure, echocardiogram need not be obtained. Known history of Cor pulmonale or pulmonary hypertension should raise suspicion for possible decompensated right heart failure but are not themselves exclusion criteria.

Diagnosis # 5. Urinary Tract Infection (UTI) EXCLUSIONS in HaH/Obs:	
46. Obstruction not relieved by indwelling urinary catheter	Evidence of new hydronephrosis, ureteral obstruction on imaging requiring urgent intervention, concern for post-renal AKI that is not improving (note: do not need to wait for AKI to improve if obstruction seems to have been relieved).
47. Alternate source of infection	Exclude if the source of infection is unclear or if there are multiple sources of infection/sepsis.
Diagnosis # 6. Asthma/COPD EXCLUSIONS in HaH/ObsaH	
48. Intubation for respiratory failure in last 10 years	Patients excluded who have had intubation for respiratory failure in the last 10 years, unless clinically judged that patient can be managed at home.
49. Evidence of concomitant illness that requires a diagnostic work up or treatment that cannot be done at home	For example, cavitating lesion, cancer, tuberculosis.

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Diagnosis # 7. PNEUMONIA EXCLUSIONS in HaH/ObsaH	
50. Concern for post-obstructive pneumonia	Exclude patients if there is a concern for post-obstructive pneumonia.
51. Evidence of concomitant illness that requires a diagnostic workup or treatment that cannot be done at home	For example, cavitating lesion, cancer, or tuberculosis.

Observation at Home Inclusion Criteria
Admitting for any condition that can be admitted to HaH but the expected LOS is 1 day — all inclusion and exclusion criteria for HaH general and specific Dx-related apply.

Admission

If a HaH team member concludes that a patient qualifies for an admission, he or she must designate the proper admission category: Hospitalization at Home, or Observation at Home. A full description of these admission categories can be found in Chapter 2 of Mount Sinai's Hospital at Home Implementation Manual.

A full acute admission triggers a cascade of events involving a number of stakeholders. Here are the key activities that take place:

1. **Informed Consent.** The accepted patient and caregiver must be oriented to HaH. A team member delivers a folder with program literature and verbally provides a full explanation of the program, its objectives, capabilities, and limitations. He or she also confirms the patient's address and phone number. This counseling and the patient and/or a family member's acceptance constitute informed consent of the patient to participate in the HaH program and must be documented in the patient's medical record.

2. **Notification and Final Preadmission Activities.** The admitting provider alerts the HaH Administrative Assistant (AA) who runs the check list with the provider. The admitting provider is responsible for contacting the primary team and bed board to obtain/give pertinent information for the admission. At the same time, the admitting provider must determine if further testing is necessary prior to ED discharge and, if so, place the appropriate order in the EMR system. Finally, he or she must determine a time and method for patient transport to home and communicate this information to the program AA and the emergency department RN or PA. The admitting provider must also document that the patient has been approached and has been accepted into the program and any pertinent details such as leaving the IV in place, how to reach the HaH office and time patient is expected to leave the location they were admitted from.

3. **ED Discharge and HaH Admission.** The admitting provider from the HaH team writes an admission note, indicating that the patient is being admitted to HaH and writes admission orders, including specific instructions for infusion and wound care if needed.

He or she then notifies the ED RN or the ED PA of patient discharge, noting the status of the infusion. Depending on the system in place, the ED provider writes an ED discharge order, or potentially the HaH provider can do this order. Finally, the patient signs the ED discharge summary paperwork, which is given to the ED RN or the ED PA.

4. **Medical Orders and Ancillary Services.** The admitting provider inputs the medical orders, which includes acute care orders and consult, medications, and other treatments. Prescriptions for medications are electronically prescribed to the hospital pharmacy and picked up by the program staff. Prescriptions for durable medical equipment are then printed and given to the HaH program AA. In New York State, because of transporting regulations, any controlled medication must be prescribed to the patient's local pharmacy for the family to pick up or for the pharmacy to deliver to the home. Finally, the provider orders any necessary home labs and imaging for the following day and routes those orders to the AA.

5. **Transport and Transition.** When not already at his or her residence, a HaH or ObsaH patient is transported home from the hospital usually in an ambulance, but on some occasions, the patient is stable enough to travel with a car service, usually accompanied by a family member or caregiver. Usually a nurse meets the patient in his or her home within a few hours, providing appropriate medications, supplies and equipment and staying as long as medically necessary. On some occasions, when the patient is discharged later in the day and is stable and does not have any medications orders for same day, a same day visit is not needed.

Lesson Learned

As the program evolved, the admission process had to be modified multiple times to adapt to new circumstances and protocols. While the original exclusion criteria list was very strict, time showed that under the right circumstances it was possible to care for more acutely ill patients safely at home. With the exception of the hard exclusions discussed, determining the appropriateness for home admission became mostly a matter of clinical judgment. This allowed the program to expand beyond the initially targeted diagnoses and patient population.

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