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PERSPECTIVE

Pyramid of Discharge Needs: A Simple Framework on Discharge Planning for Medical Students and Residents

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Abstract

Medical students and residents often have difficulty with discharge planning and determining appropriate post-hospitalization level of care. As the discharge planning process can be complex, physicians in-training often do not engage until late into the hospitalization or near day of discharge. This paper offers a simple pyramid construct that categorizes common discharge needs into 4 areas or tiers. As the topic of discharge planning is not formally taught in medical education, most trainees learn through experience and by trial and error. Using a simple pyramid and a basic flow chart to guide students and residents, the discharge planning process can be introduced as soon as possible during the hospitalization.

Keywords: Discharge planning, Medical education, Safe discharge

1. Introduction

Hospital discharge planning is a process where the inpatient care team and patients determine the type of care the patient would need after leaving the hospital. Discharge planning is aimed to reduce future readmissions, promote patient safety, and facilitate post-hospital transition of care. Anticipating and screening discharge needs are vital to the patient's overall care, as social determinants and environmental factors have significant impact on the patient's treatment. The complexity and importance of discharge planning was recently exemplified by the COVID-19 pandemic, as services and resources became limited. Successful discharge planning reduces the overall health system's burden.[1] Each patient's discharge needs is unique and planning can be complex, and often includes the patient, family members, caregivers, physical and occupational therapists, case managers, social workers, nurses, and physicians.

Discharge planning is particularly challenging for medical students and residents, as there is no widespread standard education or curriculum for teaching interprofessional care planning relating to post-hospitalization level of care. One study found that 11% of discharges had errors in discharge instructions or discharge medications, while 28% of discharges required additional education.[2] Trainees often mainly focus on the acuity of the medical conditions and would need assistance in navigating care in the context of their social circumstances. In this context, a better understanding of discharge care planning would allow students and residents to know the roles of other health professional team members, and better resource utilization that meets the patient's discharge needs. This paper introduces a simple construct represented as a pyramid to help guide trainees to identify and categorize a patient's discharge needs. This paper can be used as a primer for students, residents, and other physicians in-training.

2. Pyramid of discharge needs

The simplicity of a pyramid visually assists trainees to conceptualize certain needs that will be

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addressed to establish a safely planned discharge (Fig. 1). The absence of any component within a level could lead to potential unsafe discharge and possible readmission or re-presentation to the hospital. This is not to say that one level is more significant or more difficult to address. In general, the bottom tiers are considered as patient-centered (addressing living needs), whereas the higher tiers are more navigation-centered (maintaining access to healthcare).

Bottom Tier: Basic Physical Needs. The bottom tier describes the most basic needs for a patient, which includes food and water security, secure and safe housing, and essential utility services. These needs are the most essential and fundamental to basic living. For example, food and water insecurity puts the patient at higher risk for malnutrition and dehydration, susceptible to medical complications. Lack of electricity and heating in the context of weather conditions must not be forgotten. Patients who use noninvasive or continuous positive pressure ventilation require electricity to power those devices which is essential to their health. The needs on this level most likely make discharge to their home unsafe and therefore the patient may need facility discharge, temporary housing, or residence at another family member's home.

Second Tier: Basic Living Needs. The second tier describes patient safety related to their ability to care for themselves or to receive basic care. Activities of daily living (ADL) describe these needs such as toileting, feeding, ambulating, and grooming. This tier is most applicable to patients with disabilities and patients of advanced age. In most cases, additional support by family members or aides is necessary for patients to return home, and home care services with close outpatient follow up is prudent to reduce the risk of readmission. Typically, these patients are near complete dependence on the caregiver, and would require 24 h supervision or living with a caregiver. Furthermore, durable medical equipment, such as walking assist devices, commode, shower bench, and same-floor rooming design would maximize patient safety to return home. If these needs cannot be addressed in a timely fashion, the patient can consider alternative housing or facility placement until home arrangements can be made.

Third Tier: Healthcare Needs. Barriers and gaps to healthcare access expose the patient to potential future admissions and hospitalizations. There are numerous reasons for this: financial, physical, and mental. Patients without insurance or with inadequate medical coverage would have difficulty with outpatient follow up visits. Similarly, patients without drug coverage would need to pay out-of-pocket for essential medications. Medication samples or discount coupons would benefit these patients short term, together with providing resources for medication grants or additional coverage for long term benefits. Physical barriers may include long wait time for appointments, long travel distance/time to a clinic, and lack of reliable transportation. In most instances, if possible, home visits would benefit these patients. More recently, telemedicine encounters are now more common in lieu of physical in office encounters. Telemedicine would also address some of these physical barriers to health care. Mental barriers involve psychiatric or behavioral health problems such as preoccupation with drugs or alcohol use. Patients with mental health conditions need to seek psychiatric therapy/treatment in concordance with medical treatment. Drug and alcohol rehabilitation and recovery plan

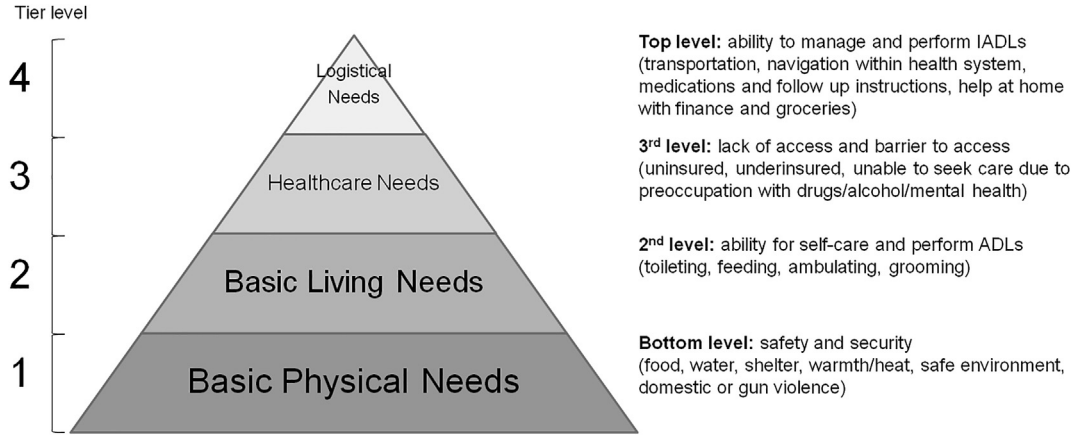

Fig. 1. Simple pyramidal representation of possible discharge needs for home. These needs are categorized into four tier levels. Bottom levels are more patient-centered, where as the tops levels are navigation-centered.

must be discussed at every encounter, as every missed opportunity can further isolate the patient from getting appropriate and necessary care. Care coordination and communication between inpatient and outpatient providers regarding subspecialty referrals, laboratory monitoring, and medications changes/additions would further bridge the care gap for patients at risk of readmission. Lastly, medication counseling and anticipatory guidance should be provided to both the patient and their caretakers verbally in their preferred language and by writing in a clear and easy-to-understand fashion. This would undoubtedly benefit non-English speaking patients and other vulnerable patients. For example, education on potential medication adverse effects to the elderly is prudent, specifically with hypoglycemic agents, anticoagulants/antiplatelets, and medications with sedating effect.

Top Tier: Logistical needs. This tier focuses on instrumental activities of daily living (IADL) and additional support at home. This is particularly important to the elderly patients or those with mild cognitive deficits. These patients can typically care for themselves independently or semi-independently, with a caregiver or an aide visiting for several hours per day. A caregiver or an aide should be the responsible party to ensure these needs are met, such as providing transportation to appointments, arranging clinic appointments, and managing their medications. In addition, discharge instructions, necessary follow up appointments, and medication changes should be given directly to the primary caregiver verbally and in writing for clarity. Community resources and appropriate counseling should be provided to the caregiver to reduce caregiver fatigue. The main role of the caregiver is to maintain the patient's health by helping with connection to and navigation within the health system.

This pyramid can screen most patients' discharge needs and can assists clinicians in-training with initiating discharge planning on admission. Fig. 2 illustrates a basic flow chart that includes assessing for home needs and also explicitly lists comorbidities that can indicates higher complexity for discharge. A simple flow chart can provide trainees a basic framework of how to approach discharge planning that is appropriate to their level.

3. Discussion/conclusion

By grouping and categorizing our patients' needs, it helps clinicians frame the treatment tailored to the patient. For example, if patient lacks insurance, then their medications need to be ensured to be affordable prior to discharge. If the patient has poor health literacy, who will be the person to help the patient navigate through medications and appointments? The needs described with this pyramid addresses majority of concerns encountered during a hospitalization. These needs can be screened early into the hospitalization, and discharge planning should start as soon as possible. Furthermore, the needs

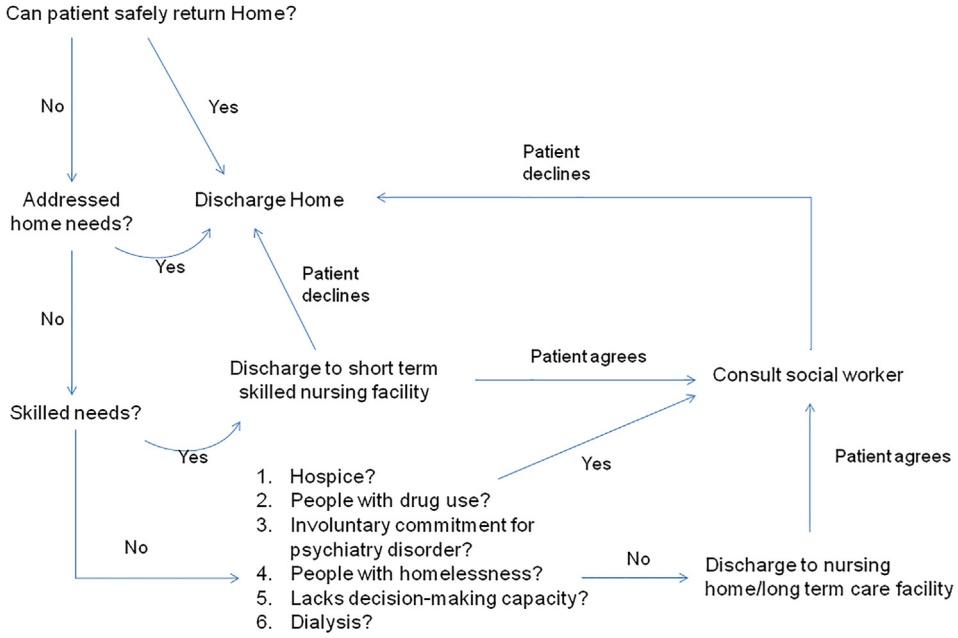

Fig. 2. Basic flow chart to illustrate decision making process.

described in this pyramid can also be extrapolated to the outpatient setting, beyond a hospitalization.

This pyramidal construct has several advantages. **1.** It is easy to understand and can be an easy tool to use in medical education and clinical practice. **2.** It provides a concrete yet dynamic structure. Each level has distinct concepts yet patients can fit into one or more levels. **3.** It puts emphasis on the inpatient care team to start the process of anticipating patient's discharge needs early in the hospitalization. **4.** The organization of the pyramid is patient-focused rather than disease-focused. It is not meant to correlate to readmission risk, as individual patient's risk for readmission is confounded by their own medical comorbidity and complexity. For example, one should not conclude patients with Tier 4 needs are the least likely for readmissions, or vice versa. The disadvantage is that some of the discharge needs are interconnected across different levels and the pyramid would not be able to fully capture the social complexity in those cases. Of course, some patients' discharge needs may not fall within the scope of this pyramid. For example, a patient with psychosis, homelessness and lacking insurance, will have multiple barriers that are intricately connected. The pyramid as it is currently will not suffice in describing that particular convoluted scenario, but this will only occur for a minority of patients. Thus, this type of simple construct can be a readily available tool for trainees and early career physicians to expedite safe discharge planning.

The current state of the medical education system does not include formal training or teaching regarding high quality discharge care and discharge planning. Residents and students recognize the value and importance of discharge planning and post hospitalization discharge planning but are mainly "learning by doing" and are underprepared for patient care in this aspect.[3] Some institutions have created workshops and training sessions for students, engaging them in interdisciplinary and interprofessional education.[4–6] The model introduced in this paper can serve as a primer to medical students and residents. The pyramid described here provides a simple and broad tool to identify potential discharge needs.

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Conflict of interest

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