SPECIAL ARTICLE

# In Search of the Perfect Discharge: A Framework for High-Quality Hospital Discharges

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Pediatric hospital discharge processes across the United States are rife with inadequacies. More than 5.8 million US pediatric hospital discharges are completed yearly,[1] and many children and their families experience problematic discharge processes. Deficiencies in discharge processes include detrimental variations in care[2,3]; miscommunication among care team members, including families and outpatient pediatricians[2,4]; fragmented care transitions[5–7]; and non–patient-centered discharge communication.[8] These system failures are associated with more errors,[6,9,10] hospitalization beyond medical necessity,[3] increased health care costs,[3] increased readmissions,[11,12] increased wait times,[13] and decreased patient satisfaction.[14,15] In an effort to address these challenges on a national scale, The Joint Commission, the Centers for Medicare & Medicaid Services, and other national organizations have encouraged legislation to improve hospital discharge quality.[16–19]

Before we can begin to improve hospital discharges, we must first start with a standard definition. Several authors have attempted to define hospital discharge. In this article, we present 2 interpretations that we believe bring an inclusive, macrolevel perspective, thereby supporting broader and more thorough improvement. Waring et al[20] defined discharge as "the point at which inpatient hospital care ends, with ongoing care transferred to other primary, community or domestic environments. Reflecting this, hospital discharge is not an end point, but rather one of multiple transitions within the patient's care journey." Berry et al[21] added, "rather than existing simply as a transient clinical event that occurs as the child and family leave the hospital, the pediatric discharge process is best conceptualized . . . as a set of care processes to be executed throughout the child's full hospital course." We use these definitions to guide the present discussion of high-quality discharge processes. These definitions establish the understanding that discharge has extensive impacts throughout the care continuum and allow for a comprehensive application of quality definitions.

Health care experts have devised a variety of interventions to address the gaps in discharge process quality, many of which are described here, but no single strategy exists that wholly optimizes discharge. A more comprehensive approach to discharge process improvement will require elements of various strategies to be used together. In 2001, the Institute of Medicine (now the National Academy of Medicine [NAM]) Committee on the Quality of Health Care in America released

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*Crossing the Quality Chasm*, a report addressing the array of health care quality problems evident in modern American medicine.[22] The committee declared that health care should be safe, efficient, effective, timely, patient centered, and equitable (Table 1). The quality domain framework constructed by NAM has been used to inform nearly 2 decades of improvement efforts but has not previously been applied holistically to discharge processes. In the current article, we present an inpatient-focused framework to define high-quality discharge processes using the NAM quality domains, explain how discharge processes connect to the system-wide delivery of high-quality care, and synthesize solutions relevant to the individual NAM domains. We also present our concept of "the discharge bridge," describing how discharge processes holistically connect hospital care with all other modes of care delivery and how the adherence to high-quality discharge practices can carry patients across this bridge.

## FRAMEWORK FOR INCORPORATING NAM QUALITY DOMAINS INTO DISCHARGE PROCESSES

### Safe: Avoiding Harm to Patients From the Care That Is Intended to Help Them

Safe discharge processes may prevent errors of omission and commission during care transitions.[22] Errors are common during and after hospital discharge, and they are often preventable.[5] Checklists are a successful component of patient safety, with broad applications across health care for avoiding errors, and are used as a standardized approach to safety on the basis of foundational principles in human factors engineering.[23,24] Incomplete discharge processes can significantly increase the risk of postdischarge adverse events; thus, the discharge process is an ideal candidate for improvement with checklists.[5]

Discharge checklists are associated with fewer unmet needs after discharge, and published checklists were created using expert consensus and evidence-based practices associated with improvements in outcomes.[25,26] Soong et al[26] proposed a checklist of safe discharge practices for adult hospital patients that included 7 categories with guidance on when particular tasks should occur. Although this list was made with adult patients in mind, it could be modified for local pediatric needs. Additionally, the Society of Hospital Medicine adapted Project BOOST (Better Outcomes by Optimizing Safe Transitions) for the pediatric population and renamed it Pedi-BOOST. The authors provided a series of checklists, including general assessments of socioeconomic, behavioral, cultural, linguistic, and educational barriers to safe discharge; risk assessments of medical and holistic complexity; and recommendations regarding responses to barriers and systems to delineate task responsibility.[27] Checklists similar to those of Soong et al and Pedi-BOOST can be used to deliver care to individual patients and to inform system-wide policies on hospital best practices. These checklists can be incorporated into the electronic health record (EHR) to improve reliability and expanded as needed. Any such improvement must be designed with human factors engineering principles in mind to effectively balance potential benefits with potential drawbacks, such as unnecessary detail or time burdens.

Although the checklist itself is valuable, it has limitations, and a multidisciplinary approach to the exploration of local barriers likely contributes to successful implementation. Checklists are a safety net in the discharge process and do not intrinsically lead to the growth of systems required to track or prevent safety events. They should not be considered comprehensive or as a replacement for clinical judgment, especially in the case of patients with medical complexity.[28] In their landmark study on surgical safety checklists, Haynes et al[24] noted that the implementation of checklists often requires significant systems changes and that their success is not exclusively due to the avoidance of omission errors alone. The checklist itself will not improve care; it is a tool that invites the discovery of barriers to safety while supporting adherence to safety principles and procedures going forward. This exploration of barriers can inform the creation of new processes, show areas of weakness in current processes, and encourage process standardization. This exploration may be particularly effective for patients with medical complexity for whom polypharmacy and medication reconciliation are essential during transitions of care.[29]

### Efficient: Avoiding Waste, Including Waste of Equipment, Supplies, Ideas, and Energy

Efficient discharge processes avoid the unnecessary use of limited resources across the spectrum of care.[22] Srivastava et al[3] found that unnecessary delays in hospital discharge make up 8.9% of total hospital costs and 9% of pediatric hospital

**TABLE 1** NAM Quality Domains

| Domain | Description |
|---|---|
| Safe | Avoiding harm to patients from the care that is intended to help them |
| Efficient | Avoiding waste, including waste of equipment, supplies, ideas, and energy |
| Effective | Providing services based on scientific knowledge to all who could benefit and refraining from providing services to those not likely to benefit (avoiding underuse and overuse, respectively) |
| Timely | Reducing waits and sometimes harmful delays for both those who receive and those who give care |
| Patient centered | Providing care that is respectful of and responsive to individual patient preferences, needs, and values and ensuring that patient values guide all clinical decisions |
| Equitable | Providing care that does not vary in quality because of personal characteristics such as gender, ethnicity, geographic location, and socioeconomic status |

Adapted from Institute of Medicine (US) Committee on Quality of Health Care in America. *Crossing the Quality Chasm: A New Health System for the 21st Century*. Washington, DC: National Academies Press; 2001.

days. Initiation of discharge planning on admission can shorten length of stay (LOS) and thus improve efficiency.[14] Although early initiation of discharge planning can be implemented in a variety of ways, we will discuss the roles of clinical pathways, discharge criteria, and collaboration with case managers.

In the context of improving discharge processes, both clinical pathways and discharge criteria can support efficient discharge planning. Ideally, this planning begins immediately after admission with a focus on what must be achieved to facilitate discharge and to identify barriers and necessary steps along the way. Clinical pathways have a decades-long history of reducing variability in care and LOS, leading to more streamlined and efficient care.[30,31] More recently, objective, patient-specific criteria describing medical readiness for discharge, with a supportive EHR infrastructure, have been built upon this work by using diagnosis-specific medical benchmarks to indicate discharge readiness.[2,32] When discharge criteria are combined with classic clinical pathways, the care team, patients, and families gain a high-level understanding of hospital trajectory, which allows them to anticipate hospital courses and supports the reduction of unnecessary practice variation and LOS.

Researchers have found that early use of multidisciplinary rounds with case managers to address postdischarge needs can shorten overall LOS.[33] Additionally, they have shown that starting individualized discharge planning by investigating specific patient needs on admission can reduce overall LOS.[14] If barriers to discharge, such as delayed arrangement of medical equipment, home nursing, or medications, are addressed early in an admission, patients may not need to wait for these issues to be resolved once they are medically ready for discharge.

Although initiating early discharge planning can reduce practice variation and LOS, an additional benefit is that the entire care team is encouraged to focus on discharge and its barriers throughout the admission. By focusing on discharge, care teams can establish shared expectations with families for discharge goals.[21,26] Because family expectations are an often-cited reason for delay, engagement with families early in the admission is important for creating a shared outlook on discharge trajectory.[34,35] When discharge planning is well executed and the discharge itself is efficient, patients do not experience diminished quality or safety of care.[36]

## Effective: Providing Services Based on Scientific Knowledge to All Who Could Benefit and Refraining From Providing Services to Those Not Likely to Benefit

Effective discharge processes support the continuation of recommended care after discharge.[22] The American Academy of Pediatrics published guidelines on the notification of primary care physicians (PCPs) regarding their patients' status upon hospital discharge to facilitate effective handoffs and care transitions.[37] Despite these guidelines, verbal communication between clinicians and PCPs is infrequent,[7,38] the availability of discharge summaries is low,[7] and the quality of discharge summaries and handoffs varies.[39] Additionally, the majority of adult patients cannot recall what medications they are on, what their medications are for, the side effects associated with their medications, or their own diagnoses.[10] Thus, it is unsurprising that significant portions of patients experience medical errors because of discontinuity from inpatient to outpatient settings[6] and that the availability of discharge summaries at outpatient follow-up visits is associated with lower rates of readmission.[40] Patients, their families, and their PCPs must understand hospital management decisions and postdischarge responsibilities to obtain the best possible outcomes after discharge.

Families often describe the difficulty of processing new information during the hospital-to-home transition, emphasizing the need to improve communication methods with patients and families when building effective discharge processes.[41] The teach-back method of communication is a useful tool for improving the quality of discharge education with a focus on closing the loop between clinicians and patients to increase patients' understanding of the disease information communicated to them. Teach-back communication occurs when clinicians ask patients to repeat back key aspects of their care (eg, "Can you tell me how you will take these medications?") to ensure understanding.[11] Teach-back communication is used to explore and confirm a person's understanding, not to test knowledge, and to provide personalized education without under- or overexplaining topics.[11] This method is associated with improvements in medication adherence, patient self-management, and lower rates of readmission and can be used to teach families about diagnoses, appointments, and medications.[11,12,18]

Clinicians must also improve their communication processes with PCPs by focusing on the content, method, and timeliness of information delivery. Tension between the priorities of PCPs and hospitalists is driven in part by a lack of standardization of the method of and indications for communication, and PCPs have emphasized the importance of accurate and timely discharge communication from clinicians in delivering high-quality patient care.[39,42] Several research groups across the country have succeeded in improving discharge communication through quality improvement (QI) methods with multidisciplinary collaboration and process standardization.[38,43,44] Common individual-level key drivers that contributed to communication improvement among these groups included timely and individualized feedback for hospital-based clinicians, financial incentives, support from leadership and their multidisciplinary team, and stakeholder buy-in. Common system-level key drivers that contributed to communication improvement among these groups were process automation with EHR integration, communication process standardization, assignment of discharge communication responsibility, and data transparency. Although 1 group used a national, multidisciplinary QI collaborative with local champions, the others reported benefits from instituting local QI projects.[44] Future

researchers might explore various communication approaches, including direct PCP discussion, EHR messaging, and virtual conferencing. By partnering with both families and their PCPs to teach how to best manage the child's health after discharge, we create greater opportunities to ensure successful completion of treatment plans.

## Timely: Reducing Waits and Sometimes Harmful Delays for Both Those Who Receive and Those Who Give Care

Timely discharge processes prevent delays in care delivery, allowing more patients to receive the care they need quickly.[22] Sluggish discharge processes have downstream effects throughout the hospital system, reducing hospital capacity and increasing wait times for patients in the hospital and those awaiting transfer from outside hospitals.[13,15,45–47] Late afternoon discharge of patients who were medically ready for discharge in the morning creates bottlenecks early in the day for patients in the emergency department and the postanesthesia care unit, for those awaiting transfer from outside hospitals,[13,15,45–47] and for those who need admission early in the day.[48] The discovery of barriers to morning discharge, sometimes driven by the implementation of time-of-day discharge goals, is fundamental to shifting the traditional late-afternoon discharge to a morning discharge for patients who are medically ready and can reduce ambulance diversion, emergency department wait times and boarding, and postanesthesia care unit wait times. Time-of-day discharge goals are associated with increased hospital capacity and reduced LOS.[13,15,45,47,49,50]

The focus of improvement efforts should be on patients who could have been discharged earlier in the day but stayed for nonclinical reasons.[47,51] If organizations choose to implement time-of-day discharge goals, the pursuit must be balanced with the understanding that there are clinical cases where it is inappropriate to discharge patients in the morning, that medical readiness is always required, and that evening discharges are sometimes examples of timely care.

Pediatric clinicians are well acquainted with scenarios where a patient is not ready for discharge until evening, such as infants admitted with fever awaiting negative culture results or slowly improving oral intake in a patient with dehydration. These patients are not the focus of time-of-day discharge initiatives, and improvement efforts should instead concentrate on ways to facilitate early morning discharges in appropriate patients, not simply to set a deadline. Any incentivization of clinicians to discharge patients early in the morning must not inadvertently encourage clinicians to keep patients hospitalized for another night to satisfy the early discharge metric. Improvement efforts should instead be aimed at eliminating barriers to discharging patients as soon as they are medically ready.

The successful exploration of barriers to timely morning discharge depends on barrier assessments and multidisciplinary stakeholder involvement. Time-of-day discharge or discharge when medically ready goals are not inherently valuable in themselves; value comes from the associated investigation into barriers and implementation of workflow changes that come while instituting the goal. Because every hospital system is unique, timely discharge implementation must begin with investigation of the barriers to achieving this goal. Such an investigation can be done informally, using guidance based on stakeholder experience,[52] or formally, using Lean health care management,[47,50] process mapping, and Ishikawa (fishbone) diagrams.[34] Multidisciplinary communication is a frequent reason for discharge delay,[34,35,53] and successful interventions typically have a component that focuses on care team member communication.[47,50,51,54] Researchers have found particular success with standardized multidisciplinary huddles throughout the day with physicians, nurses, social workers, and case managers collaborating to identify potential early discharge patients. Afternoon huddles build a unified view of the clinical status of the patient and promote early recognition of the action items needed to facilitate early discharge on the next day.[47,50,51,54]

Other significant barriers to timely discharge include delayed discharge order entry and an unplanned approach to the order that patients are seen on rounds.[47,50,51,55] Groups that rounded on early discharge patients first and encouraged discharge order entry during rounds showed improvement in early discharge rates.[47,50,51,55] Overnight teams may be able to facilitate early discharge by beginning discharge preparation during their shift. These workflow changes can be encouraged at an institutional level through provider education, feedback, and incentivization.

## Patient Centered: Providing Care That Is Respectful of and Responsive to Individual Patient Preferences, Needs, and Values and Ensuring That Patient Values Guide All Clinical Decisions

Patient-centered discharge processes support the provision of empathetic, individualized, trauma-informed care.[22] Patients and their caregivers often describe hospitalization as "a fog," where the emotional toll of hospitalization and the communication practices of clinicians lead to difficulty with processing information.[41] In discussing care transitions, when clinicians do not use compassionate and empathic language, anticipate home needs, or plan for discharge collaboratively, caregivers felt that their care was unsafe and that they were deserted by the health care system.[56] In 1993, Gerteis et al[57] outlined several dimensions of patient-centered care that were then adapted by NAM in *Crossing the Quality Chasm*.[22] These dimensions include information sharing, communication between patient and clinician, and patient education, as well as respect for patients' values, preferences, and expressed needs. At the core of patient centeredness is the clinician's responsiveness to the patient's individual personhood and the patient's understanding that the health care team cares for him or her as a person.[56]

To provide patient-centered discharge care, clinicians must engage patients and their families in the discharge planning process with compassion and empathy. The end of the inpatient hospitalization concludes an intense and sometimes emotionally traumatic experience, and particular attention should be paid to addressing this emotionally traumatic experience, and particular attention should be paid to addressing this trauma throughout the hospital course. Marsac et al[58] discussed a variety of tools to support pediatric health systems in providing trauma-informed care. At the core of trauma-informed care is the acknowledgement of the presence of emotional trauma in health care and its impact on children and families and the promotion of methods of reducing the trauma of receiving care. Patients and their families possess varying preferences on communication styles and shared decision-making, and clinicians must seek to understand these preferences so that they can deliver care in accordance with them. Additionally, clinicians must seek out and incorporate their patient's values so decisions can be made together with the family. For example, some parents of children with complex chronic conditions prefer to complete the last portion of the healing process at home compared with others who would rather stay in the hospital. Patients and their families can have varying preferences regarding the style of discharge teaching, forms of communication, and level of involvement in the process. As such, clinicians may benefit from collaborative communication techniques, where a common set of goals and a complete understanding of differing perspectives among patients and clinicians are established.[59] Feudtner[59] wrote that collaborative communication "aims to be produced or conducted by two or more parties working together," and that it "emphasizes the relationships between people, viewing interpersonal communication and relationships as inexorably entwined."

## Equitable: Providing Care That Does Not Vary in Quality Because of Personal Characteristics, Such as Gender, Ethnicity, Geographic Location, and Socioeconomic Status

Equitable discharge processes support all patients, regardless of their background or individual needs.[22] The concept of health equity has evolved since NAM released *Crossing the Quality Chasm*, and several authors have suggested their own contemporary views on the definition of health equity. Braveman et al[60] explained that "health equity means that everyone has a fair and just opportunity to be as healthy as possible" and that "equity is not the same as equality. To equalize opportunities, those with worse health and fewer resources need more efforts expended to improve their health." Current efforts in health equity are focusing on moving beyond simply providing consistent care regardless of the background of a patient and recognizing that equalizing the quality of care provided may require different approaches and levels of support for different patients. Intersectionality, diverse cultural backgrounds, and social determinants of health can be unique barriers to the delivery of high-quality care that may require varied approaches by clinicians.[61] Directed self-reflection and exploration of implicit biases are often prerequisites to clinicians providing equitable care. To provide equitable care, clinicians must rely on their patient-centered communication and the discovery of patient needs, backgrounds, and desired outcomes of care.

In the context of hospital discharge, equitable care is individualized to patient and family needs. Both patient- and family-level characteristics, such as language proficiency, health literacy, or socioeconomic status, and community characteristics, such as the availability of transportation, can have an influence on the success of discharge. Equitable care is provided when discharge information is communicated in a way that patients and their families can understand and when the socioeconomic postdischarge situations of patients are accounted for. For example, low health literacy is associated with higher mortality, higher rates of hospitalization, and poorer self-management skills for chronic disease.[62] Families with limited English proficiency often receive discharge instructions in the wrong language and less counseling on safety at discharge.[63,64] Additionally, low health literacy is associated with adherence errors after discharge communication.[65] To address these issues, clinicians must ensure that their discharge information is understandable by individual patients. Because comprehension is connected to readability, an appropriate reading level in the family's preferred language for discharge instructions can support understanding.[66] Equitable care emphasizes that different patients and families may require different interventions to achieve their desired outcomes.

Clinicians must also incorporate the lives of their patients outside the hospital into planning for a high-quality discharge. Unreliable transportation is associated with lower rates of PCP follow-up and filling of medications, and patients often describe medication cost and appointment copays as barriers to discharge plan adherence.[67–69] Although hospital-based clinicians may find supporting patients in overcoming these barriers challenging, no progress can be made without first learning that these barriers exist. Pedi-BOOST includes standardized screeners focused on elucidating these barriers and how to overcome them.[27] Social workers and case managers are experts in these areas and can provide invaluable input. Common strategies that support patients include transportation assistance, food vouchers, medication price warnings, and arrangement for follow-up with physicians near the patient's home. Clinicians must actively seek out information regarding the lives of their patients outside the hospital to equitably care for patients who require more assistance (Fig 1).

## The Discharge Bridge

There is a tendency to classify discharge processes exclusively as hospital based in

the dichotomy between inpatient and outpatient care. However, we argue that hospital discharge exists as its own entity, bridging hospital care and any other mode of care delivery (Fig 2). The road over the metaphoric discharge bridge begins deep from within the shores of the inpatient stay and continues across the shores of post–inpatient care, just as discharge processes start when a patient is admitted to the hospital and affect care long after they leave. All the preparation that was done while in the hospital carries the patient and family over the tumultuous waters between the hospitalization and the post–acute care shorelines and on to the next destination in their care journey (Fig 2).

Discharge is generally the ideal conclusion to most hospital stays, and the entire hospitalization should be focused on achieving this goal. The incorporation of the various high-quality discharge processes outlined in our framework build the columns, support beams, and guardrails that help to safely carry a patient and family across the bridge. Because discharge processes have such a broad reach, with extensive effects downstream, they have an effect on the quality of care delivered throughout the care continuum. By applying the NAM domains in the context of discharge, clinicians appreciate how the bridge is built, what makes it sturdy, and how to approach efforts to strengthen it.

With this framework, our goal is to describe a holistic mental model of discharge that defines high-quality discharge processes based on the NAM domains and acknowledges discharge as a unique aspect of the care continuum. But much remains to be done. We have described some current initiatives, but for each domain, substantial gaps exist in the literature regarding the clinical, social, and economic impacts of specific interventions.

The perfect discharge is safe, efficient, effective, timely, patient centered, and equitable, and these individual and overlapping components support the delivery of high-quality care throughout the health system. By using this framework, clinicians can more comprehensively assess their current practices and focus their improvement efforts. This global approach to discharge process improvement relies on integrating the most effective solutions while understanding the application of quality definitions to discharge. To align discharge care with our definitions of high-quality hospital discharge, we must examine the greater context of our patients' lives alongside the entire care continuum. The perfect discharge simultaneously addresses patient, hospital, and societal needs as patients cross the discharge bridge toward better health.

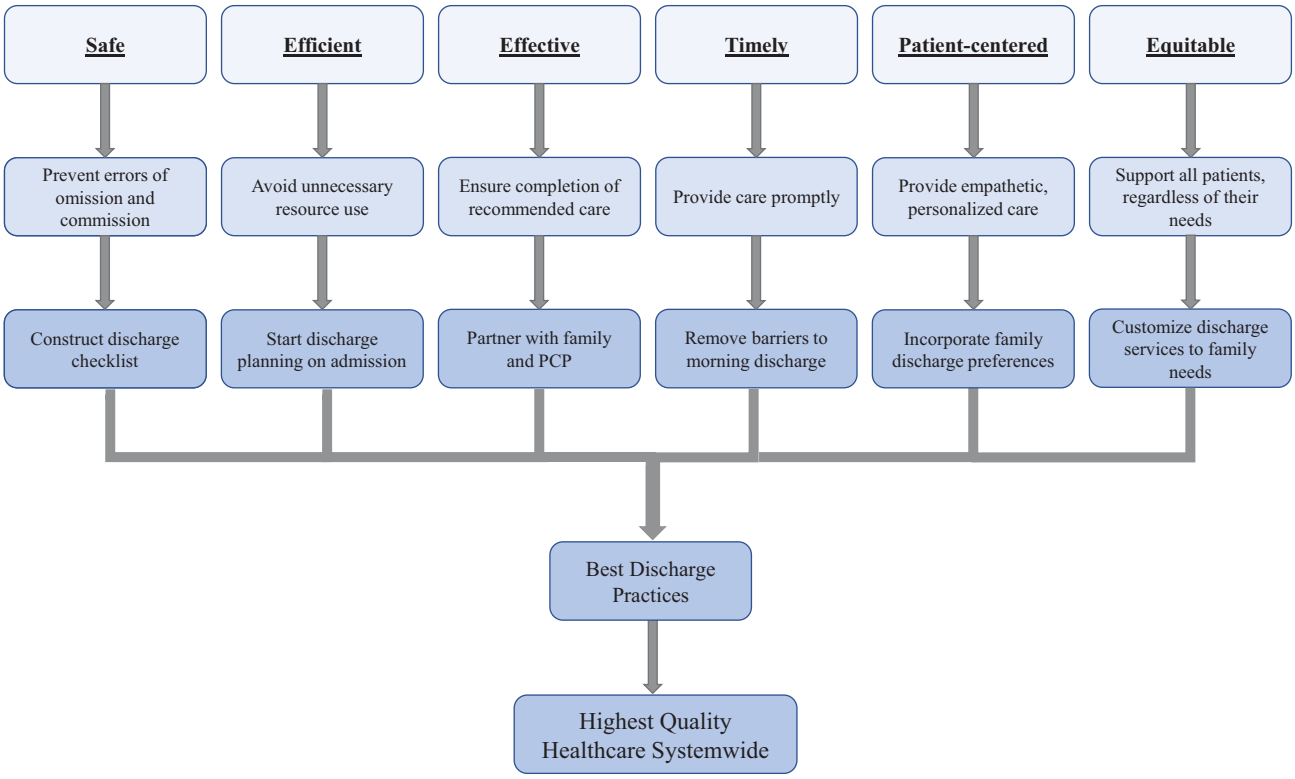


**FIGURE 1** Summary of high-quality discharge definitions and processes.

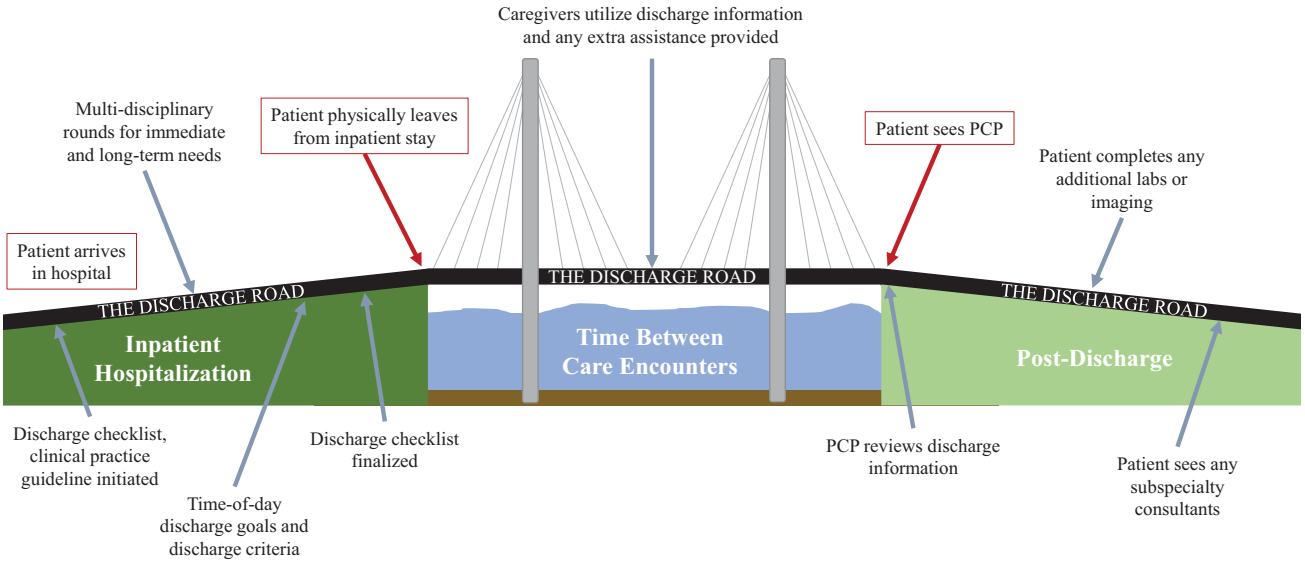


**FIGURE 2** The discharge bridge.

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