Intensive Discharge Planning Algorithm

Featured Practice from The Discharge Strategy Handbook

- Using Evidence to Develop a Simple Filter
- Calculating Score Using Hospital EMR
- Avoiding Waste Days with Early Notification
Our Firm in Brief

<table>
<thead>
<tr>
<th>RESEARCH AND INSIGHTS</th>
<th>PERFORMANCE TECHNOLOGIES</th>
<th>CONSULTING AND MANAGEMENT</th>
<th>TALENT DEVELOPMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Memberships Offering Strategic Guidance and Actionable Insights</strong></td>
<td><strong>Global Peer Collaboratives Powered by Web-Based Analytic Platforms</strong></td>
<td><strong>Seasoned, Hands-On Support and Practice Management Services</strong></td>
<td><strong>Partnering to Drive Workforce Impact and Engagement</strong></td>
</tr>
<tr>
<td>• Dedicated to the most pressing issues and concerns in health care</td>
<td>• Millions of admissions flow through our technology platforms</td>
<td>• Years of “operator” experience in hospital and doctor surgeries</td>
<td>• Impacted the achievement of 76,000+ executives, doctors, clinical leaders, and managers</td>
</tr>
<tr>
<td>• 300+ industry experts on call</td>
<td>• Over 1.5 million user sessions annually</td>
<td>• Principal practice areas: hospital-doctor alignment, care transformation, surgery department optimisation</td>
<td>• 17,000+ outcomes-driven workshops tailored to partners’ specific needs</td>
</tr>
<tr>
<td>• 200+ customisable forecasting and decision-support tools</td>
<td>• Key challenges addressed: surgical efficiency, supply costs, and emergency department efficiency</td>
<td>• Range of engagements from strategy/diagnostic to best practice installation to interim management</td>
<td><strong>Survey Solutions</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Customised strategies for improving employee and doctor engagement</td>
</tr>
</tbody>
</table>

| 3,600+ | 2,200+ | 1,500+ |
| Hospitals and health care organisations in our membership | Health care professionals employed | Hospitals using our performance technologies |

| 165,000+ | $500+ | 1,300+ | 6,200+ |
| health care leaders served globally | million in realised value per year | engagements completed | employee-led improvement projects |
Executive Summary

The efficiency imperative
Under pressure to provide high-value care while treating rapidly growing volumes of patients, hospitals must create virtual capacity by reducing average length of stay. Despite government and media focus on the hospital front door, improving discharge efficiency is the most leveraged way to create capacity: when patients who are medically fit for discharge linger in beds, this undermines any other efficiency improvements in the hospital.

Creating capacity by eliminating end-of-stay delays
Most hospitals take a reactive approach to discharge, postponing tasks until patients are medically ready to leave. Clinical staff understandably prioritise clinical care tasks over discharge tasks, and capacity shortages and poor relationships between acute and post-acute providers make securing post-acute care services difficult, exacerbating discharge delays. These tandem challenges create a sense of futility among clinicians and hospital leaders alike, leading many to accept discharge delays as inevitable.

This study outlines five critical areas of intervention to avoid discharge delays by creating an infrastructure to proactively plan and execute timely transitions.

1. Ensuring discharge date prediction
To make effective discharge plans, the first requirement is a goal: a predicted date of discharge that the whole care team, patients, and families can work towards. Hospital leaders must embed accountability for early date prediction into hospital workflow.

2. Forecasting post-acute needs and destination
Planning post-acute care for patients who require it is the next essential step. This requires input from numerous stakeholders—doctors, nurses, clinicians, patients and families—early in the patient stay, while targeting limited assessment and planning resources only to patient with complex discharge needs.

3. Installing proactive preparation for discharge
With an effective planning process in place, organisations must implement process changes that ensure proactive execution of discharge plans. To realise this goal, hospitals will need to build an infrastructure that embeds discharge tasks into daily care routines.

4. Coordinating end of stay process
Not all discharge tasks can be completed in advance, so hospitals must develop processes to identify and prioritise, last-minute, essential tasks by shifting responsibility to staff with free capacity.

5. Leveraging post-acute capacity to avoid delays
Finally, hospitals must act to avoid delays due to external providers, by developing collaborative relationships with sub-acute and primary care or by independently managing new capacity.
About The Discharge Strategy Handbook

Creating Capacity by Eliminating End-of-Stay Delays

An effective discharge infrastructure must include two components: early planning and strong processes to ensure that discharge preparation tasks are completed. We have divided our work into these two main sections.

To improve, leaders must first ensure that patients receive a predicted date of discharge early and consistently. Second, any necessary planning for post-acute care needs must be made early in the patient’s stay. Third, when possible discharge tasks must be completed in advance. Fourth, tasks that cannot be proactively completed in advance must be appropriately prioritised.

Although the greatest opportunities for most lie within the walls of the hospital, some organisations will find that despite their best efforts internally they still face delays due to external factors. In the final section, we present tactics from organisations that have found innovative ways to avoid these delays.

This excerpt profiles Practice #3, “Intensive Planning Need Algorithm” from Column 2, “Forecast Post-Acute Needs and Destination”.

<table>
<thead>
<tr>
<th>Planning for Discharge Early</th>
<th>Embedding an Infrastructure to Execute Discharge Plans</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1</strong></td>
<td><strong>3</strong></td>
</tr>
<tr>
<td>Ensure Reliable Discharge Date Prediction</td>
<td>Install Proactive Preparation for Discharge</td>
</tr>
<tr>
<td>• Practice #1: Low-Acuity Standard Discharge Date</td>
<td>• Practice #7: Workflow-Centred Journey Boards</td>
</tr>
<tr>
<td>• Practice #2: Accountable Date Prediction</td>
<td>• Practice #8: Staff-Designed Scripted Multidisciplinary Rounds</td>
</tr>
<tr>
<td><strong>2</strong></td>
<td><strong>4</strong></td>
</tr>
<tr>
<td>Forecast Post-Acute Needs and Destination</td>
<td>Coordinate End-of-Stay Processes</td>
</tr>
<tr>
<td>• Practice #3: Intensive Planning Need Algorithm</td>
<td>• Practice #12: Night Shift Task Organiser</td>
</tr>
<tr>
<td>• Practice #4: Comprehensive Caregiver Assessment</td>
<td>• Practice #13: Localised Nurse-Led Discharge Rollout</td>
</tr>
<tr>
<td>• Practice #5: Barrier-Eliminating Discharge Plans</td>
<td>• Practice #14: Financially Accountable Transfer Agreement</td>
</tr>
<tr>
<td>• Practice #6: Specialised Planning for Specialised Care</td>
<td>• Practice #15: Hospital-Hotel Care Partnership</td>
</tr>
</tbody>
</table>

Beyond the Hospital:

Leveraging Post-Acute Capacity to Avoid Delays

• Practice #14: Financially Accountable Transfer Agreement
• Practice #15: Hospital-Hotel Care Partnership
• Practice #16: Hospital Driven Outreach and Collaboration
• Practice #17: Co-located Decision Making
• Practice #18: Integrated Acute-Post-Acute Management
• Practice #19: Home-Centred Demand Management
Forecast Post-Acute Needs and Destination
Practice #3: Intensive Planning Need Algorithm

- Using Evidence to Develop a Simple Filter
- Calculating Score Using Hospital EMR
- Avoiding Waste Days with Early Notification
Limited Time Requires a Targeted Approach

Given the realities of limited hospital resources and staff time, conducting detailed discharge planning for every patient is not possible, and for many patients it is not necessary. However, more complex patients do require more intensive planning to ensure a safe discharge.

How can a hospital ensure that patients requiring intensive discharge planning are adequately served without squandering resources on unnecessary assessments?

Challenge: Lack of Time

**Limited Time Requires a Targeted Approach**

Intensive Discharge Planning Impossible for All Patients

**Targeted Discharge Planning Approach**

**Routine Discharge Planning**
- For noncomplex patients without need for post-acute care
- Discharge planning coordinated by bedside nurses with doctors and clinical nurse specialists

**Admitted Patients**

**Intensive Discharge Planning**
- For complex patients, e.g., frail elderly, who require further in-depth assessment to identify care needs
- Discharge planning involves additional personnel including case managers, social workers and community care providers

**Wide Variation in Risk Tolerance Results in Inconsistent Care**

“There’s a spectrum of risk tolerance that health care workers have. One individual might tolerate more risk, and say, ‘this patient looks healthy, his wife is sitting at the bedside and I think he’ll probably do fine’, and other people might say, ‘just to be safe, let’s call in the discharge planner to have them take a look at him’.”

*Diane Holland, Ph.D., Nurse Scientist
Mayo Clinic*

Source: Advisory Board interviews and analysis.
Practice #3: Intensive Planning Need Algorithm

Using Evidence to Develop a Simple Filter

The Mayo Clinic developed a time-saving method to standardise referrals for specialised discharge planning. Their goal was to ensure high-risk patients received needed services while minimising unnecessary assessments.

Recognising that variations in clinician risk tolerance resulted in uneven discharge planning practices, a clinician working group developed a standard screening process for intensive discharge planning referrals. The group used existing literature to evaluate patient variables such as age, comorbidities, cognitive status, and admission in the past year. Their analysis found that only four such variables were statistically significant predictors of patient need for intensive discharge planning.

Statistically Significant Variables to Identify Discharge Planning Needs

- Disability
- Lives Alone
- Walking Limitation
- Age

Case in Brief: Mayo Clinic

- Two-hospital health system in Rochester, Minnesota, US with total of 1,951 beds
- Evaluated 24 patient variables to identify those that are statistically significant in predicting patient need for non-routine discharge planning
- Based on results, developed Early Screen for Discharge Planning score to identify need for intensive planning services upon admission
- Scores range from zero to 23 points; score 10 or above indicates need for intensive discharge planning services with a sensitivity of 75.2% and specificity of 78.5%
- Algorithm embedded into hospitals’ EMR in 2009
- LOS for intensive discharge planning patients decreased by 20% following algorithm implementation

1) Sensitivity measures the proportion of patients who need specialised discharge planning that are correctly identified by the tool.
2) Specificity measures the proportion of patients who do not need specialised discharge planning that are correctly identified by the tool.
3) Electronic Medical Record.
4) Length of Stay.
Patient Receives Risk Score Upon Admission

Using a regression analysis of the four statistically significant variables, the clinician working group developed the Early Screen for Discharge Planning Algorithm. The algorithm calculates a patient score of between zero and 23. A score above 10 indicates the need for intensive discharge planning.

The algorithm is easy to use and enables busy nurses to conduct a quick assessment on admission and, if necessary, refer the patient for intensive discharge planning immediately.

A Simple Calculation Leads to Reliable Assessment

Early Screen for Discharge Planning Algorithm

<table>
<thead>
<tr>
<th>Variable</th>
<th>Scoring Algorithm Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td></td>
</tr>
<tr>
<td>18-44</td>
<td>0</td>
</tr>
<tr>
<td>45-64</td>
<td>4</td>
</tr>
<tr>
<td>65-79</td>
<td>6</td>
</tr>
<tr>
<td>80+</td>
<td>8</td>
</tr>
<tr>
<td>Disability</td>
<td></td>
</tr>
<tr>
<td>No significant disability</td>
<td>0</td>
</tr>
<tr>
<td>Slight disability</td>
<td>3</td>
</tr>
<tr>
<td>Moderate or greater disability</td>
<td>9</td>
</tr>
<tr>
<td>Prior living status</td>
<td></td>
</tr>
<tr>
<td>With others</td>
<td>0</td>
</tr>
<tr>
<td>Lived alone</td>
<td>3</td>
</tr>
<tr>
<td>Lived in facility</td>
<td>0</td>
</tr>
<tr>
<td>Self-reported walking limitation</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>0</td>
</tr>
<tr>
<td>Yes</td>
<td>3</td>
</tr>
</tbody>
</table>

Profile of Nancy

- 67 years old
- Moderate or greater disability
- Lives alone
- Self-reports walking limitation

Nancy’s risk score; indicates need for referral to discharge planning specialist

For complete version of Mayo Clinic’s Early Screen for Discharge Planning Algorithm, please see appendix, p.153

Source: Advisory Board interviews and analysis.
The Mayo Clinic first developed the algorithm in 2006. In 2009, to further simplify the process, the algorithm was embedded into Mayo’s electronic medical records system.

Calculating Score Using Hospital EMR

Early Screen for Discharge Planning

- Walking Limitation
  - Result: 
  - Comment: 
  - Does pt have any difficulty walking by self?

- Age
  - Result: 
  - Comment: 
  - (Note: Age pre-filled by LastWord)

- Ability Return Current Living
  - Result: 
  - Comment: 
  - Ability to return to previous environment

Early DC Plan Score:

****10 points or more – refer for comprehensive discharge planning assessment

Additional information for nurses embedded into EMR form

Save
Cancel

Info explaining each option for the Rankin Score is available on a Help Screen here

For further screenshots of Mayo Clinic's Early Screen for Discharge Planning Tool and Rankin Disability Score, please see appendix p.153


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Since the implementation of the Early Screen for Discharge Planning Algorithm, the Mayo Clinic has seen a 20% decrease in length of stay for complex patients that are referred for intensive discharge planning. With a more targeted, standardised approach, clinicians have been able to more accurately predict patients’ discharge needs. Likewise, the intensive discharge planning team has seen an increase in early referrals, enabling them to proactively make arrangements for post-acute care.

Critically, the assessment has also reduced the time wasted on unnecessary assessments, while maintaining staff confidence that all patients are receiving safe and appropriate discharge planning.

### Early Notification Avoids Wasted Days

<table>
<thead>
<tr>
<th></th>
<th>Before Intervention</th>
<th>After Intervention</th>
<th>20% decrease</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average LOS(^1)</td>
<td>8.0</td>
<td>6.4</td>
<td></td>
</tr>
</tbody>
</table>

\(^1\) Length of stay.

"When arranging for post-acute services you have to start the implementation phase early. Facility placements, making the proper home health care choice...is very difficult to do well without taking some time...Now the discharge planners and social workers [have time to] develop a plan A and a plan B, because they’ve been alerted to pay attention to this person.”

**Early Notification Essential**

Screening is just one step in a process…it directs you to people you should pay attention to, but without...attempting to standardise the process and the implementation, it’s still going to be difficult to understand that the discharge planning process alone can be tied to outcomes.”

*Diane Holland, Ph.D., Nurse Scientist, Mayo Clinic*

Collected Best Practices for Creating Capacity

2013 Clinical Operations Board Survey on Transitions
Discharge benchmarks surveyed from the Clinical Operations Board global membership

Next Generation Capacity Management
Collaborating for Clinically Appropriate, Efficient Inpatient Throughput

Improving Provider Communication and Patient Transitions
Hospital-Based Best Practices

Hub of the Enterprise
Transforming the Emergency Department’s Role in Delivering Agile and Coordinated Care

The High Performance Operating Theatre
Elevating Efficiency Through Strategic Theatre Management

Seamless Care Transitions
The Hospital’s Role in Avoiding Unnecessary Readmissions

The Highly Productive Cardiovascular Enterprise
Imperatives for Operating at Optimal Efficiency to Safeguard Margins

Elevating Interdepartmental Workflow
Best Practices for Optimising Emergency and Inpatient Throughput in Radiology

To learn more about these resources and the practices featured in this study, please contact Meg Herring at herringm@advisory.com or +1 202-266-6377.