How Are We Doing? Evaluating Hospital at Home Quality and Safety

David Levine, MD, MPH, MA | Brigham and Women’s Hospital

Webinar
February 23, 2021
We appreciate the generous support of

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ZOOM Webinar Housekeeping

• Please submit your questions via the Q&A option.

• Due to the large audience for today’s webinar, everyone has been placed on mute.

• If you have any technical issues, please contact Gabrielle Schiller (gabrielle.schiller@mssm.edu) or send her a message via the Zoom chat feature.

• Slides and webinar recording will be available at HaHUsersGroup.org and the TA Center.
Al Siu, MD, MSPH
Director, Mount Sinai at Home

Professor and Chair Emeritus of the Brookdale Department of Geriatrics and Palliative Medicine at the Icahn School of Medicine at Mount Sinai

Geriatric Research, Education, and Clinical Center (GRECC) at the James J. Peters Veterans Affairs (VA) Medical Center
Web: hahusersgroup.org
Tw: @hahusersgroup
TA Center (beta): www.capc.org/
strategies/acute-hospital-home
The HaH Users Group Webinar Series

- The Hospital At Home Model and the CMS Acute Hospital Care At Home Waiver
- Building Support for Your Hospital at Home Program: Issues in Strategic Engagement
- Who’s In, Who’s Out? Deciding Which Patients Are Right for Your Hospital at Home Program
- Tech Matters: Building the Right Digital Platform for Your Hospital at Home Program
- Efficient, Effective, Excellent: Issues in Hospital at Home Logistics and Operations
- On Time, Every Time: Delivering Hospital at Home Ancillary Services
- How Are We Doing? Evaluating Hospital at Home Quality and Safety

See Events at HaHUsersGroup.org or the Users Group TA Center for more information…
Today’s Webinar

How Are We Doing?
Evaluating Hospital at Home Quality and Safety
David Levine, MD MPH MA
Medical Director for Strategy and Innovation,
Brigham Health Home Hospital
Assistant Professor of Medicine, Harvard Medical School
Disclosures

David Levine: PI-initiated grants from Biofourmis and IBM
Agenda

- Defining Principles
- Measures
- How To Track
- How To Evaluate
- HaH National Data
Defining Principles on What to Measure
Parachute jumping may not carry major trauma when jumping from aircraft

Robert W Yeh1, Jordan B Strong1, Brahmajee K Kasturirangan2

1 Department of Emergency Medicine, University of California, Irvine Medical Center, California, USA; 2 Department of Surgery, University of California, Irvine Medical Center, California, USA

Fig 2 | Representative study participant jumping from aircraft with an empty backpack. This individual did not incur death or major injury upon impact with the ground.
What You Do Need

High validity

Automated > manual

At least monthly feeds

EHR feeds when possible
Measures
Measures Required by CMS

Unanticipated mortality

Escalation

Learn more at: HaHUsersGroup.org
More Measures

During HaH

• Fall with serious injury
• Medication error with serious injury
• Delirium
• Pressure injury
• CAUTI
• Serious injury of staff 2/2 assault

After HaH

• 3-day readmission
• 30-day readmission
• 30-day ED presentation
• Days at home
• 14-day PCP visit
• Patient experience

Learn more at: HaHUsersGroup.org
# A Q&S Measures Starter Set

<table>
<thead>
<tr>
<th>Measure</th>
<th>Numerator</th>
<th>Denominator</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unanticipated mortality</td>
<td>Patients with unanticipated death</td>
<td>Patients expected to live</td>
<td>HaH team</td>
</tr>
<tr>
<td>Escalation</td>
<td>Patients transferred back to the traditional hospital to continue their acute care</td>
<td>All patients</td>
<td>EHR</td>
</tr>
<tr>
<td>3-day readmission</td>
<td>Patients readmitted within 3 days of discharge</td>
<td>All patients</td>
<td>EHR</td>
</tr>
<tr>
<td>30-day readmission</td>
<td>Patients readmitted within 30 days of discharge</td>
<td>All patients</td>
<td>EHR</td>
</tr>
<tr>
<td>Days at home</td>
<td>Days spent at home between admission and 30-days later(^1)</td>
<td>30</td>
<td>EHR</td>
</tr>
</tbody>
</table>

\(^1\): not including patients expected to die

Learn more at: HaHUsersGroup.org
Some Guidance from the Literature

<table>
<thead>
<tr>
<th>Measure</th>
<th>Annals IM 2005</th>
<th>JAMA IM 2018</th>
<th>Annals IM 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unanticipated mortality</td>
<td>0%(^1)</td>
<td>0.3%(^1)</td>
<td>0%</td>
</tr>
<tr>
<td>Escalation</td>
<td>1.2%</td>
<td>11.2%</td>
<td>0%</td>
</tr>
<tr>
<td>3-day readmission</td>
<td>NR</td>
<td>NR</td>
<td>NR</td>
</tr>
<tr>
<td>30-day readmission</td>
<td>NR(^2)</td>
<td>8.6%</td>
<td>7.0%</td>
</tr>
<tr>
<td>Days at home</td>
<td>NR</td>
<td>NR</td>
<td>NR</td>
</tr>
</tbody>
</table>

1: reported as all-cause mortality  
2: only 60-day readmission reported as 28%

Learn more at: HaHUsersGroup.org

Operational Measures

• Disposition time
• Daily utilization
• Visit time
• Travel time
• Overnight events
• Demographics
• Volume
  o Patients
  o ADC
  o Bed-days
# More Guidance from the Literature

## Appendix Table 1. Operational Process Measures

<table>
<thead>
<tr>
<th>Process Measure</th>
<th>Home ((n = 43))</th>
<th>Control ((n = 48))</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean time from admission decision to assessment by research assistant ((95% \text{ CI}), \text{ min})</td>
<td>11 (0-25)</td>
<td>12 (4-20)</td>
</tr>
<tr>
<td>Mean time from research assistant assessment to completed enrollment ((95% \text{ CI}), \text{ min})</td>
<td>29 (21-36)</td>
<td>27 (21-36)</td>
</tr>
<tr>
<td>Mean time from completed enrollment to dismissal from ED ((95% \text{ CI}), \text{ min})</td>
<td>66 (54-78)</td>
<td>54 (28-80)</td>
</tr>
</tbody>
</table>

ED = emergency department.
How to Track All Those Data
Tracking Systems
How to Evaluate Yourself
# Your HaH Scorecard

<table>
<thead>
<tr>
<th>Measure</th>
<th>Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unanticipated mortality</td>
<td></td>
</tr>
<tr>
<td>Escalation</td>
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<td>3-day readmission</td>
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</tr>
<tr>
<td>30-day readmission</td>
<td></td>
</tr>
<tr>
<td>Days at home</td>
<td></td>
</tr>
<tr>
<td>Volume</td>
<td></td>
</tr>
</tbody>
</table>

Learn more at HaHUsersGroup.org
Observed vs Expected

Volume: Observed vs Expected

Volume: Cumulative Observed vs Cumulative Expected
Run Charts

Bed Days

Cumulative Bed Days

Month

No. of Bed Days

Cumulative No. of Bed Days

JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV

JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV
Summative Evaluation

- 7% 30-day readmission rate
- 3% Escalation rate
HaH National Data Needs Your Program
Voluntary Data Collection Makes Us Stronger

• National evidence base
• Benchmarks
• Shared learning
Learn More

• Hospital at Home Users Group
  https://hahusersgroup.org/

• Hospital at Home Users Group Technical Assistance Center
  (Beta version, powered by CAPC)
  https://www.capc.org/strategies/acute-hospital-home/

  o Featured Resource – Annotated CMS Waiver
    https://www.capc.org/strategies/hospital-at-home-meeting-2020-cms-waiver-requirements/
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• On Time, Every Time: Delivering Hospital at Home Ancillary Services
• How Are We Doing? Evaluating Hospital at Home Quality and Safety  (Up Soon)

See Events at HaHUsersGroup.org or the Users Group TA Center for more information…
More Soon

- Monthly webinars, starting at the end of March
- First topic = Pharmacy
- Please chat to us or put in the Q and A, topics you would like to see covered

Learn more at HaHUsersGroup.org
World Hospital at Home Congress

Transforming Health Care

In today's environment, Hospital at Home is not just an opportunity to improve the delivery of health care, it is our responsibility. Providing high-quality, cost-effective and safe care for patients, hospital at home is the way of the future.

Learn more at HaHUsersGroup.org
THANK YOU

• Join the HaH Users Group
  o (Fill out the form at HaHUsersGroup.org)

• Chat us topics for our next webinar series

• More help at the Users Group TA Center
  https://www.capc.org/strategies/acute-hospital-home/