Technical Report

AHRQ Summit to Address Emergency Department Boarding

Agency for Healthcare Research and Quality

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Executive Summary

Emergency department (ED) boarding is a public health crisis in the United States, with harmful impacts on patients, hospital staff, and public safety. Patients who are sick enough to require inpatient care can wait in the ED for hours, days, or even weeks after a physician has decided to admit them while waiting for an inpatient bed to become available.

The Agency for Healthcare Research and Quality (AHRQ) Summit to Address Emergency Department Boarding convened in October 2024 to engage public and private partners, including patients and consumers; clinicians; hospital and health system leaders; policymakers; experts in emergency medicine, behavioral health, and other medical specialties; and others to identify actionable hospital-level and health system-level solutions to address ED boarding systematically.

The Summit was held in response to a bipartisan letter sent by 44 members of Congress to the U.S. Department of Health and Human Services (HHS) requesting that HHS "identify, develop, and implement both immediate and long-term solutions" to the issue. This report describes the discussions among experts during public sessions and breakout groups at the Summit that can be summarized as follows:

ED boarding significantly impacts patients, staff, the healthcare system, and public safety:

- **Patients:** Boarding contributes to increased mortality, medical errors, prolonged hospital stays, and greater dissatisfaction with care. Vulnerable populations, such as older adults and behavioral health patients, face higher risks, including worsened health outcomes.
- **Clinicians and staff:** Boarding increases the risk that clinicians are subject to physical violence, burnout, and moral injury and results in EDs struggling to recruit and retain clinicians and staff.
- **Cost:** Hospitalization costs are higher for patients who are boarded in the ED before receiving inpatient care.
- **Public safety:** Ambulance delays from ED congestion impair emergency response times, endanger lives because of increased ambulance response times, and create the risk of exacerbating crises during mass public health events or disasters.

Key drivers of ED boarding include the following:

- **Capacity mismatch:** A longstanding focus on shifting the U.S. healthcare system toward outpatient care has reduced the number of available inpatient beds, while the number of ED visits requiring admission has increased.

- **Financial incentives:** To ensure their financial well-being, hospitals prioritize higher-revenue patients, such as those needing elective surgery, over lower-revenue patients, such as those admitted through the ED.
- **Administrative issues:** Delays in discharging inpatients, including those resulting from prior authorization and other administrative requirements, prevent hospitals from making inpatient beds available efficiently for ED patients.

What We Know About What Works and What Does Not Work

Three types of programs are commonly thought to reduce ED boarding but are ineffective because they primarily focus on ED input factors and not on drivers of boarding:

- Programs to keep **low-acuity patients** out of the ED do not reduce boarding because low-acuity patients are rarely admitted to the hospital.
- **Alternative care programs** to keep patients out of the ED, such as expanded telehealth options or urgent care clinics, do not alleviate boarding for the same reason. However, these programs may still improve care processes for patients who receive these services.
- Programs designed to **reconfigure EDs and their processes**, such as ambulance diversion or building larger EDs, do not reduce boarding because these programs do not address hospital capacity or ED outflow.

Proven solutions include the following:

- **Surgical smoothing** distributes elective surgeries more evenly across the full week to reduce peaks in inpatient bed demand and enable ED patients to move to inpatient units more rapidly.
- **Streamlined discharges**, including discharging patients early in the day, planned weekend discharges, and using discharge lounges, make inpatient beds available more quickly for admitted ED patients.
- Hospital efforts to use **inpatient bed managers** to speed bed assignment, provide alternative services for **behavioral health patients**, and involve **executive leadership** in addressing the challenge are effective in reducing ED boarding.

Suggestions from Summit Participants

Summit participants suggested a number of strategies that could be effective for reducing ED boarding.

- **Measurement, standards, and public reporting** efforts could increase hospital and health system accountability for ED boarding.

- **Regional health data systems** could support sharing data about bed availability within a geographic region.
- **Aligning payment and incentive policies** could reduce boarding and would require minimizing any potential unintended consequences of payment changes.
- **Increased support to help rural hospitals** access telehealth consults and transfer patients needing higher-level care could reduce ED boarding in Critical Access Hospitals and other rural facilities.
- Diversion strategies that reduce the need for inpatient care among **behavioral health patients** may help reduce ED boarding because patients with acute behavioral health needs may be more likely to be admitted once brought to an ED, even if their needs could be met at an intermediate level of care.

While strategies to support ED staff—such as violence prevention programs, peer-support groups, and the use of technology to monitor patient vital signs—do not address ED boarding, they may support ED clinicians and staff as they work under the stressful conditions ED boarding causes.

Opportunities for Government Leadership

Summit participants noted four potential areas for federal and state leadership:

- Hospital leaders may need support from federal and state agencies to leverage certain types of change, such as asking surgeons to change their schedules.
- The Centers for Medicare & Medicaid Services' Conditions of Participation offer one potential policy lever for changing hospital behavior.
- A federal Interagency Policy Council could examine options for executive action and legislation to address ED boarding.
- Government enforcement of standards may be needed to ensure hospital action.

Beyond these suggestions from Summit panelists, there is an opportunity for federal agencies such as AHRQ to convene key stakeholders to design and sponsor rigorous research to test approaches for reducing ED boarding.

Moving Forward

To identify pathways for action, a group of stakeholders from across the healthcare system could be convened to map the ecosystem related to ED boarding. By examining processes and local practices within hospitals, as well as structures, processes, systems, and requirements beyond the hospital, this group would identify a limited number of high-impact policy and practice levers that could be used to reduce ED boarding and move our nation closer to a vision of timely, high-quality, safe healthcare for all patients in the ED.

Introduction

Emergency department (ED) boarding is a public health crisis in the United States, with harmful impacts on patients, staff, and public safety. Patients who are sick enough to require inpatient care may wait in ED beds—many in the hallway—for hours, days, or even weeks. The problem is far from new, having been observed in the U.S. healthcare system since the 1980s and 1990s.

On October 8, 2024, the Agency for Healthcare Research and Quality (AHRQ) held a Summit to Address Emergency Department Boarding. The goal of the Summit was to engage public and private partners, including patients and consumers; clinicians; hospital and health system leaders; policymakers; experts in emergency medicine, behavioral health, and other medical specialties; and others to identify actionable hospital-level and health system-level solutions to address ED boarding systematically.

The Summit was held in response to a bipartisan letter sent by 44 members of Congress to the U.S. Department of Health and Human Services (HHS).[1] The letter highlighted the urgency of the problem, its broad-ranging impact on patients and clinicians, and the precarious situation that boarding creates during mass public health events. It urged HHS to obtain broad stakeholder representation, including from other federal agencies, and asked HHS to "identify, develop, and implement both immediate and long-term solutions" to the issue.

HHS' response to this letter highlighted a series of actions taken by AHRQ and the Centers for Medicare & Medicaid Services (CMS).[a] These included the development of resources and research projects funded by AHRQ such as information on improving the ED discharge process and research on patients with high use of the ED, as well as work by CMS on evaluating the impact of reimbursement incentives on ED boarding. AHRQ subsequently convened a Roundtable on Emergency Department Boarding to explore sustainable solutions to the problem.

The October 2024 Summit convened a broader group of stakeholders to discuss the challenge and identify potential approaches for addressing it. This report describes the discussions held among experts during public sessions and breakout groups at the Summit, including those on the impact of ED boarding on patients, ED staff, and public safety; what drives boarding; what we know about what does and does not work to reduce

[a] A copy of HHS' response is available at https://www.acep.org/siteassets/new-pdfs/advocacy/boarding-response-to-rep.-dingell.pdf. Accessed January 2025.

boarding; and ideas for other strategies we might try. The report concludes with a description of a potential path for moving forward with this work.[b]

What Is ED Boarding?

ED boarding is the practice where a decision is made by medical staff to admit a patient, but the patient is physically kept in the ED because a hospital inpatient bed is not available at that time. Patients are commonly boarded in the ED for hours or days while waiting for a hospital bed. Boarding is fundamentally an ED output problem, reflecting the inability to move patients who have been assessed and provided with stabilizing treatment out of the ED and into a care setting designed to best address their needs, such as an inpatient ward or the intensive care unit (ICU).

Therefore, the term "ED boarding" is a misnomer because the problem is not caused by or within the control of staff in the ED. Instead, the ED is where the symptoms of this hospital-wide and health system-wide patient flow problem converge and appear, leading to challenges that have caused the ED to be dubbed "the canary in the healthcare system."[2] In short, ED boarding is an indicator of broader issues, such as system capacity, flow-through of patients, and the overall health of the healthcare system. This led Summit attendee Dr. Aisha Terry, American College of Emergency Physicians, to propose that the term "ED boarding" be retired and replaced by "hospital system overload."

Boarding is related to and yet distinct from ED crowding, which occurs when the demand for ED services exceeds capacity. Crowding is both an input and a throughput problem because EDs cannot turn people away when too many patients are arriving or when patients cannot be moved through a medical assessment and stabilizing treatment quickly enough to clear the backlog in the ED.[c] Both input and throughput challenges result in ED crowding but are not direct causes of ED boarding.

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[b] Information about the Summit, including the agenda and a list of participants, is provided in the appendices. Further information, including recordings of the Summit's public sessions and AHRQ's Special Emphasis Notice on this topic are available on AHRQ's webpage at https://www.ahrq.gov/topics/emergency-department.html.

[c] Under the Emergency Medical Treatment & Labor Act of 1986, hospitals that participate in Medicare (representing nearly all hospitals with EDs in the United States) are required to provide an appropriate medical screening exam to all patients who come to the ED and, if an emergency medical condition is present, to provide stabilizing treatment or an appropriate transfer. For more information, see https://oig.hhs.gov/reports-and-publications/featured-topics/emtala/ or https://www.cms.gov/emtala.

Although ED boarding was observed as early as the 1980s and 1990s, the problem was exacerbated during the COVID-19 pandemic and remains at historically high levels.[3] One Summit panelist noted that an ED physician staffing organization serving more than 300 EDs across the country has seen boarding increase from 2020-2022 compared to baseline 2019 levels, as measured in increased total patient hours and average length of stay, despite fewer admitted patients.[4]

Research by the Emergency Department Benchmarking Alliance, a membership organization with performance measures for more than 1,000 EDs that manage more than 50 million patient visits across the United States, shows that median boarding times increased from 121 minutes in 2020 to 192 minutes in 2022.[5] Under some circumstances, a quarter of patients remain in the ED for more than seven hours after an ED physician decides that they need to be admitted.[6]

Why Does ED Boarding Matter?

Impact on Patients

ED boarding is a growing public health crisis affecting patients in hospitals globally and across the United States. Research has found associations between ED boarding and excess in-hospital mortality,[7,8,9] along with increases in medical errors and harmful delays in care delivery.

Boarding is so widespread and harms to patients are so well established that The Joint Commission has had a standard in place since 2012 indicating that patients should board in the ED for no more than four hours.[10] Despite this standard, hospitals routinely board patients for far longer.[11]

To highlight the impact that boarding has on patients, Summit attendees heard from two panelists. Ms. Rosie Bartel, Patient Partner, described her mother's experience with an extended stay in the ED. Her mother, who lives with Alzheimer's dementia, experienced significant confusion and was kept for four days in an ED hallway next to the ambulance entrance in a small, rural hospital that had only intermittent physician services and where she received no food. Ms. Bartel, who uses a wheelchair, spent the four days sitting with her mother in the ED, trying to get her mother the care she needed. Upon returning to her nursing home, Ms. Bartel's mother continued to experience increased confusion and agitation.

Dr. Charity Watkins, Duke University and North Carolina Central University, discussed two of her own visits to the ED. On her first visit, despite being postpartum and having heart attack symptoms, she spent more than five hours in the waiting room. Dr. Watkins left the

hospital because she had a new baby at home and she had noticed at the ED that no one was progressing from the waiting room to the treatment area. Two days later, she was diagnosed with an enlarged heart. Upon returning to the ED, she was again left to wait for several hours. She ultimately was admitted to the cardiac ICU, where her heart was found to be functioning at 5 to 10 percent of normal.

The boarding problem is so pervasive that one Summit participant, an emergency medicine physician, emphasized that on three separate occasions he could not avoid his own father being boarded in the ED hallway when he needed emergency care.

Boarding is associated with increased dissatisfaction with care and a greater likelihood of patient-perceived discrimination.[12,13] Further, a systematic review published in 2019 found that ED crowding and boarding are associated with the following:

- Delays in assessment and treatment of patients.
- Longer hospitalizations and increased readmissions.
- Poorer infection prevention and control measures.
- Lower compliance with standards of care.
- Higher rates of medication errors and adverse events.
- Increased morbidity.[14]

Patients at Greater Risk

Several groups of patients experience additional challenges related to ED boarding, including older adults, patients in rural areas, behavioral health patients, patients with disabilities, and pediatric patients.

Older Adults

A larger proportion of older adults are boarded in the ED compared to younger adults despite their more significant health risks, and they experience greater negative health impacts from boarding. Boarding could compound and exacerbate existing conditions and comorbidities among older adults, is a known risk factor for delirium, and could exacerbate dementia.[15] Older patients with dementia or cognitive impairment could become agitated in the ED and consequently be prescribed sedatives that lengthen their hospital stay, increase costs, and potentially worsen their health.

Summit panelist Dr. Ula Hwang, New York University Langone Health, described one patient's experience:

> This was an 87-year-old gentleman [with] … a history of dementia and also some cardiac [concerns, who] was actually sent to the ED by their

> psychiatrist because … the patient was displaying … behavioral and psychological symptoms of dementia. So, they were increasingly agitated at home, difficult for the family members to manage.
>
> The psychiatrist sent the patient into the ED because they needed to have their medications managed by psychiatry. But we also know psych [services] … are increasingly under strain too and there are no beds there. This patient ended up boarding in the emergency department for three days. While [he] was there, [he] was placed in restraints and refused [his] medications.
>
> … by the time the patient got to the [inpatient] bed, [his heart rhythm was unstable and needed intervention]. … The patient ended up going to the cardiac unit. … This is an example of … the continuous compounding of something that really could have been prevented had the patient [been admitted] sooner and maybe prioritized.

Patients in Rural Areas

EDs in rural areas may have limited or intermittent physician staffing, with few medical services available in surrounding communities. As a result, many rural ED patients are boarded while awaiting transfer via ambulance or airlift to tertiary or quaternary care hospitals that can meet their needs. Summit panelist Dr. Brandon Morshedi, University of Arkansas for Medical Sciences, described a situation in which he was working in a Critical Access Hospital[d] with a seven-bed ED. Three of the patients in the ED were severely ill, at a level typically treated in an ICU. As he told the story:

> I'm the only doctor in the entire county … and I called 25 different hospitals across 5 different states that night. I know there were open beds. There were just probably no staff for those beds. And those 3 patients sat there all night long while I finished a 24-hour shift and signed them out [to another doctor] the next morning. And I just remember thinking, "This can't be American healthcare." I'm talking to the family, trying to explain to them as gently as I can the failures of the system, that these patients are going to have bad outcomes because I can't get them out of this Critical Access Hospital.

[d] Critical Access Hospitals are small, rural hospitals that provide essential services to remote communities. https://www.cms.gov/medicare/health-safety-standards/certification-compliance/critical-access-hospitals

Behavioral Health Patients

Given the nationwide shortage of inpatient psychiatric beds and other facilities to which behavioral health patients can be admitted, these patients may disproportionately board in the ED and may have especially lengthy stays.

As one extreme example, a 13-year-old girl in Maine boarded in a hospital's ED for 304 days because there was no appropriate place to which she could be discharged.[16] Data for the state of Maine show that the average length of stay in EDs for pediatric behavioral health patients increased from 13 days in 2022 to 23 days in 2023.[17]

Impact on ED Staff

Each ED clinician now cares for more patients than ever before, as they provide care to patients who are being assessed and stabilized and to patients who have completed their ED-specific care and are waiting for an inpatient bed. ED boarding has notable negative impacts on the physicians and nurses who care for patients there, creating significant concerns for physical safety, burnout, and recruiting:

- As boarding has increased, ED clinicians have been increasingly subject to physical violence from patients. A 2022 poll found that 55 percent of ED physicians have been physically assaulted while working in the ED, up from 47 percent in 2018. Nearly four in five ED physicians have witnessed assaults in the ED.[18]
- Emergency medicine physicians report the highest rates of burnout of all specialties (57 percent for emergency medicine versus 48 percent for all specialties),[19] and burnout is also common among ED nurses.
- As Summit panelist Ms. Chris Dellinger, Emergency Nurses Association, highlighted, recruiting has become increasingly challenging. As a result, EDs now commonly hire new nurses immediately upon completion of their training, rather than requiring several years of hospital-based experience before they work in the ED. Recent years have also seen unprecedented numbers of emergency medicine residency slots going unfilled as medical students choose other fields of practice, and ED residency directors report that boarding has negative impacts on resident education.[20,21]

Dr. Morshedi spoke of the moral injury that clinicians experience when making medical decisions they would not need to make if a patient were not boarding in the ED. When a patient is agitated to the point of requiring sedatives in the ED that they would not need if they were on an inpatient ward,

> not only are we making that patient worse [by giving sedatives that would not otherwise be needed], but then if we don't do that, that nurse's … time is taken up by that patient. Now we're compromising care for all the other

> [patients]. There is nothing good about that situation. We should not even have to be worrying about what sedative to give this patient, because they shouldn't be in the ED to begin with....
>
> I don't want to give them benzos [benzodiazepine sedatives]. I don't want to give them antipsychotics. But also, I can't have them climbing the walls and putting themselves and staff and other patients in danger.

One Summit participant noted that ED boarding sends a signal to clinicians "that my specialty is not important [and] my patient's not important" to hospital and health systems leaders.

Impact on Cost

Healthcare costs are a perennial public policy concern in the United States. In 2022, U.S. healthcare spending grew by 4.1 percent and accounted for 17.3 percent of the nation's Gross Domestic Product.[22] Although not discussed extensively at the Summit, ED boarding has been shown to result in higher costs of care. One study of acute stroke patients in a large, urban academic medical center found that total daily costs per patient were 87 percent higher for medical/surgical patients boarded in the ED compared to those receiving inpatient care.[23] Another study found a strong relationship between ED boarding and risk-adjusted hospital spending across more than 2,900 U.S. hospitals.[24]

While costs are higher for patients who are boarded, ED boarding reduces overall hospital revenue because patients leave without being seen, ambulances are diverted to other hospitals, and hospitals provide care that is not reimbursed. One simulation study found that, depending on the strategy used to reduce ED boarding in a single urban teaching hospital, such efforts could result in between $2.7 million and $3.6 million in net revenue per year. In Minnesota, patient discharge delays—a major cause of ED boarding—resulted in nearly 195,000 days of unneeded, unpaid care that cost the state's hospitals nearly half a billion dollars per year.[25]

Impact on Public Safety

ED boarding poses significant challenges for emergency medical services (EMS), and the extended time that ambulance crews spend waiting in EDs affects public safety. Historically, EMS crews could expect to arrive at the ED, transfer their patient, and be back on the street ready to respond to a new 911 call within 20 minutes. In recent years, the amount of time that EMS crews spend in the ED has increased significantly, with more than one in five hospital trips leading to an ambulance being out of service for an hour or more. Nationally, EMS crews reported 890,000 trips to the ED that delayed returning to active

service in 2023, with one Los Angeles-area EMS crew waiting 25 hours to transfer the care of their patient to ED staff.[26]

These growing ambulance turnaround times in the ED have a marked impact on public safety because they take ambulances and their crews out of circulation and prolong EMS response times to 911 calls. News reports describe heart attack and stroke patients waiting more than an hour for an EMS crew to arrive at their house,[27] potentially leading to increased morbidity and mortality.

Further, Summit speaker Dr. Brendan Carr, Mt. Sinai Health System, noted the national health security risks ED boarding poses. In the event of a large-scale terror event, an infectious disease outbreak, or a large-scale accident such as a chemical release, patients will come to the ED regardless of how many patients are already boarding there. Dr. Carr highlighted the challenges this would create:

> We have a total mismatch between a system that is running at 110 percent capacity and an expectation that we can save American lives when the unthinkable happens.

What Drives ED Boarding?

The Summit addressed several underlying drivers of ED boarding, including a mismatch between supply and demand, financial drivers, and administrative delays.

The U.S. healthcare system has spent many years emphasizing outpatient care, resulting in fewer inpatient beds nationwide.[28] Concurrently, we have seen a growing number of ED visits [e] and an increasing proportion of ED visits that lead to hospital admission.[29] Taken together, this has created a mismatch between supply and demand, with less inpatient capacity for admitting patients from the ED and a concomitant increase in boarding. As Summit speaker Dr. Brendan Carr stated, "[The United States] set up a system to move everything to the ambulatory setting, and then we were shocked when we didn't have inpatient capacity."

Further, financial drivers play a crucial role in boarding. All hospitals and health systems need to ensure that their financial operating model will enable them to continue to stay in business and provide care to patients. Elective surgeries and other procedures generate more revenue and higher margins than other kinds of medical care. For example, our

[e] Data from AHRQ's Healthcare Cost and Utilization Project estimate 143.4 million ED visits nationally in 2019, 123.3 million in 2020, and 127.0 million in 2021, compared to 120.0 million ED visits in 2006.

payment policy provides greater reimbursement for procedural services than for "cognitive" care, such as management of chronic illness and hospital care for exacerbations of these illnesses.[30]

As a result, hospital and health system leaders make tradeoffs daily. As described by Dr. Carr:

> I have to ask myself now [in my new role], not just - am I going to prioritize the patient in front of me in the ER, but which patient are we going to prioritize? … We have very smart financial people that say to me, "If you cross this line, you sink the ship. So, you know, make any decision you want, do what's right for the world out there, but just know that … if you want to snap your fingers and make all the boarding go away by canceling a quarter of our elective surgeries, it would be very easy for you to undermine the health system's finances."

Similarly, Summit panelist Dr. Gabe Kelen, Johns Hopkins University, noted the misalignment of incentives in our system in which to ensure hospital financial survival…

> the CEOs have to preference high-paying patients, which usually means procedures and surgeries, over [other patients]. And the vast majority of patients coming through the ED are not high-procedure patients. Some are but not enough. And so … you really have no choice. Surgery is able to make some money, and I get some of that to financially support my department's mission.

Summit attendee Dr. Dahlia Rizk, Mt. Sinai Beth Israel, noted the related challenges that prior authorizations and other administrative delays cause for discharging hospital inpatients and freeing beds to alleviate ED boarding—challenges that result in unnecessary additional days that patients spend in the hospital:

> Something that seems like very low-hanging fruit is … all the prior authorizations and the delays to getting the patients [discharged]. So, I can wait three or four days for a payer to tell me that they [an inpatient] could go to rehab … and then it will be a Friday. And then the nursing facility won't take the patient until Monday. So, that's a week of delay, where that patient is going to have the potential for increased medication errors, further decline of their physical strength, deterioration of their clinical status, and then stay longer at the rehab facility. These delays use valuable resources that could have been used for more acute patients that need to enter the hospital.

In addition, a nationwide decrease in available nursing home beds has led to 57 percent of nursing homes having a waitlist for new residents.[31] These waitlists can lead to extended ED boarding as clinicians and staff try to find placements for vulnerable patients who need ongoing care.

What We Know About What Works and What Does Not Work

Over more than four decades of trying to address ED boarding, clinicians, hospital leaders, and researchers have learned much about what does and does not work to alleviate ED boarding. Experts at the Summit discussed the following concepts.

What Does Not Work

Low-acuity patients are rarely admitted to the hospital. Thus, programs to keep these patients out of the ED have minimal impact on reducing ED boarding. Such programs, as described by Summit participants, include efforts to:

- Educate patients about going to the ED or to an urgent care clinic.
- Build urgent care clinics near EDs.
- Provide mobile health units.
- Enable EMS to treat low-acuity patients on-site without transporting them to the hospital.

Alternative care programs designed to keep patients out of the ED also do not directly alleviate boarding. Such programs discussed by Summit participants include:

- Expanded telehealth options.
- Expanded primary care hours.
- Chronic care management.
- Transportation programs (including EMS transport of patients to destinations other than the ED).
- Programs solely designed to address social determinants of health.

In addition, programs designed to reconfigure EDs and their processes do not help reduce boarding. Such programs that were described at the Summit include:

- Building larger EDs.
- Diverting ambulances to other hospitals.

- Placing a physician or another clinician at triage to decrease time from patient arrival until a clinician first sees them.
- Measuring time from patient arrival until a clinician sees them.
- Decreasing the proportion of ED patients who are admitted to the hospital.
- Training and hiring more ED physicians.

All of these programs may have myriad other benefits, yet they do not reduce boarding because they do not speed the process of having admitted patients leave the ED to be moved to an inpatient hospital bed.

What Does Work

Summit panelists highlighted a number of actions that have been shown to reduce ED boarding. Work led by Dr. Eugene Litvak and others has shown that **smoothing elective surgery schedules** to avoid peaks and valleys in the demand that such cases create for inpatient and ICU beds is a powerful tool for reducing ED boarding. Although it would require changes in surgical practices to accommodate a more even distribution of surgeries over the full week, smoothing has led to increases in hospital revenue, fewer cancellations of elective surgeries, decreased costs, and increased inpatient bed occupancy.[32]

However, hospitals may be reluctant to require surgeons to change their operating schedules, which would also require them to change their outpatient clinic hours for consults and follow-ups as well as the timing of rounds on their admitted post-surgical patients—changes surgeons may be highly reluctant to make. One Summit participant noted that providing incentives such as premium payments for surgeries during traditionally less desirable time slots might help support surgical smoothing.

Surgical smoothing can be a particularly powerful approach to addressing ED boarding when combined with active **protocols for discharging patients earlier in the day** and **for planned weekend discharges**. Some hospitals target 30 percent of discharges to occur before noon to speed the availability of inpatient beds. Hospitals have also used discharge lounges to support patients leaving inpatient beds earlier in the day; such lounges provide a site other than inpatient wards where patients can wait between the time they are discharged and when they leave for home.[33,34,35]

Summit panelist Dr. Peter Viccellio, Stony Brook School of Medicine, also discussed the benefits of redistributing technician schedules so that imaging and other tests for inpatients can be conducted in the evening and not be limited to a 9-to-5 schedule, speeding clinical decision-making for inpatients. Taken together, surgical smoothing,

updated discharge protocols, and testing during evenings can reduce peak demand for inpatient beds and clear the way for admissions from the ED.

Inpatient bed managers can help reduce ED boarding by speeding inpatient bed assignment, as can **protocols to standardize which patients are admitted to the hospital**. Summit panelist Dr. Gabe Kelen described his experience with the ED running an **observation unit** (a dedicated, staffed space focused on expeditiously delivering care to patients for approximately 23 hours as an alternative to inpatient admission). This helped to decompress the ED and reduce boarding.

EmPATH (Emergency Psychiatry Assessment, Treatment and Healing) units can support reduced ED boarding for behavioral health patients. These units provide an alternative emergency care setting for behavioral health patients; three-quarters of EmPATH unit patients are treated and released within 24 hours.[36]

Programs to provide hospital services at home could, in theory, reduce the inpatient census and make beds available to decompress the ED. CMS's 2020 **Acute Hospital Care at Home** waiver resulted in far broader adoption of structured inpatient hospital-at-home programs than ever before.[37] However, as Summit speaker Dr. Brendan Carr described, hospitals find it challenging to fully implement a temporary program with a known expiration date, as the temporary nature of such programs creates a disincentive to establish the infrastructure needed to support them fully. As a result, the waiver program may have had a smaller impact on freeing inpatient beds to alleviate ED boarding than it would have had as a permanent program. More research is needed to understand the effect that such programs could have on ED boarding.

Consistent with many other aspects of hospital improvement activities, one study noted that specific interventions targeted at reducing ED length of stay were more likely to be successful in hospitals that had **executive leadership involvement** in these activities, **hospital-wide coordinated strategies, data-driven management, and systems of accountability for performance**.[38]

What Else Might We Try?

Measures, Standards, and Public Reporting

Standard setting, measurement, and public reporting of measures comprise a suite of tools that have long been used to leverage improvement in the U.S. healthcare system. Several tools that could support efforts to reduce ED boarding already exist or are in development.

- Yale New Haven Health Services Corporation/Center for Outcomes Research and Evaluation has developed an electronic clinical quality measure for CMS that focuses on the capacity and timeliness of emergency care and in-hospital care transitions. The proposed measure addresses patients who board for longer than four hours, among other indicators of low capacity or poor-quality care.[39]
- The American College of Emergency Physicians has developed a standard "that would require hospitals to create and implement protocol to move admitted patients out of the emergency department when the hospital reaches a specific capacity threshold."[40]
- CMS's August 2024 final rule for the Medicare Hospital Inpatient Prospective Payment Systems includes a requirement that each hospital wishing to attest to being an "Age Friendly Hospital" must measure boarding and other risks for frail patients. The requirement includes an attestation that "Protocols exist to reduce the risk of emergency department delirium by reducing length of emergency department stay with a goal of transferring a targeted percentage of older patients out of the emergency department within 8 hours of arrival and/or within 3 hours of the decision to admit."[41]
- The American College of Emergency Physicians has a geriatric ED accreditation program that requires Level 1 and Level 2 accredited facilities to monitor how long adults ages 65 and older board in the ED after a decision to admit them is made.[42]

Summit participants suggested a variety of public reporting efforts to increase accountability around ED boarding. The first of these would involve establishing standards for boarding based on hospital characteristics such as size. These standards would then be used for public reporting, which could include reporting the frequency with which hospitals fail to meet those standards.[43]

Other public reporting efforts suggested by Summit participants included reporting hospitals' capacity management plans and how often those plans are deployed; reporting of actions that hospitals take to reduce boarding; and mandatory reporting of all inter-hospital transfer requests and those requests that are refused by receiving hospitals.

Regional Health Data Systems

Sharing data about bed availability within a geographic region is one approach to identifying options for redistributing patients when ED boarding is high in a particular hospital. Establishing such a regional health data system would require developing clear operational definitions, ensuring that data would be adequate to support decision-making, and ensuring that data would be updated frequently enough to be useful.

Such a system could be voluntary or mandated by a state government and would require defining operational goals and governance as well as building significant trust among all parties involved. Metrics would need to be accurate, non-gameable, and granular (e.g., distinguishing between pediatric and adult beds). Medical Operations Coordination Centers (MOCCs), originally created during the COVID-19 pandemic to support patient load balancing, may serve as one model for such regional health data systems.[44] To be effective, such a data system would need to be accompanied by inter-institutional patient transfer agreements as well as transfer agreements among state, tribal, and federal partners and by adequate medical transport capacity. In addition to supporting real-time hospital operations, such data systems could provide the basis for analyses of topics such as drivers of avoidable hospitalization days that prevent inpatients from being discharged and their beds from becoming available to reduce ED boarding.

Payment and Incentives

Financial arrangements and incentives to which hospitals are subject under their agreements with payers are significant drivers of hospital behavior. Summit participants discussed the possibility of financially incentivizing hospitals to reduce boarding. This included revisiting federal reimbursement policy that currently incentivizes hospitals to care for patients in need of high-revenue services, such as elective surgeries, over lower-revenue services that are provided by cognitive rather than procedural specialists.

Participants also raised the option of not allowing hospitals to bill at inpatient rates until patients arrive at their inpatient bed or of otherwise assessing a financial penalty if patients are boarded for longer than a pre-defined period. However, imposing such penalties puts the onus entirely on the hospital to solve the issue, when a lack of adequate post-discharge care, such as nursing home bed availability, significantly contributes to the challenge. Dr. Brendan Carr highlighted the unintended consequences that such policies could create:

> [Having] a hard stop for how long you can stay, post-admission, in the emergency department before some penalty [or] nonpayment [is imposed] … those consequences are to the financial bottom line of the hospital. And … from the ED perspective, that might feel just fine.
>
> As you zoom out, what does it really mean? Does it mean that I, wearing the hospital administrator hat, would stop allowing surgeries for people that are high risk or people that are marginalized and more likely to bounce back into the emergency department, so that I won't have post-surgery, post-medical intervention of some sort—the risk that they're going to bounce back and need to be admitted [when] I don't have capacity? We need to be mindful of unintended consequences.

This highlights the importance of focusing on a whole-system approach to payment changes that applies small nudges over time to minimize potential unintended consequences.

Several Summit participants discussed proposing that CMS Conditions of Participation (CoPs) be changed to incentivize hospitals to reduce ED boarding. As CoPs set the requirements that hospitals and other healthcare organizations must meet to participate in Medicare and Medicaid, such changes offer a powerful tool for leveraging changes to how hospitals function. Other participants, however, cautioned that using CoPs to address ED boarding would need to be done with care due to the risk of unintended consequences.

Rural Areas

Rural hospitals often cannot identify tertiary and quaternary hospitals willing to accept transfer patients, contributing to the lack of inpatient capacity and resultant ED boarding in rural areas. Summit participants discussed the potential for enhanced support of rural hospitals in caring for patients who need more intensive or specialized care.

One option discussed was a "transfer out/transfer back" approach in which patients needing a specialized procedure are transferred elsewhere for that procedure and then transferred back to the rural hospital for ongoing treatment and care. Summit panelist Dr. Vicki Norton, American Academy of Emergency Medicine, Palm Beach County Medical Society Board of Directors, and Florida Atlantic University, noted that "if they need [a procedure], they can transfer the patients out for specialist care and then bring them back to the rural facility, which … patients like better too. Because … you're sometimes transferring … [the patient] 500 miles away or out of state, and patients don't want to be that far away."

Summit participants also discussed increased support to enable rural hospitals greater access to telehealth consults for specialty care as another option. This would require addressing rural broadband internet access issues, payment policies for telehealth consults, and licensure compacts to enable telehealth consultations across state lines.

Behavioral Health

Given the nationwide shortage of inpatient psychiatric beds and the concomitant prolonged boarding that many behavioral health patients experience, a suite of strategies focused on reducing the need for inpatient care may provide effective options for reducing ED boarding for this group of patients. Such strategies may include the following:

- Expanding and funding EmPATH units and other resources to provide crisis stabilization and emergency psychiatric care, resulting in a lower likelihood of admission.
- Increasing access to and destigmatizing medications such as buprenorphine for treating opioid use disorder.
- Extending COVID-era telehealth flexibility for buprenorphine prescribing.
- Increasing payment parity between behavioral healthcare and other specialties.
- Engaging social workers in the ED to champion outpatient resources for individual patients.

Support for Staff

While the following strategies do not address boarding, they may support ED clinicians and staff as they work under the tremendously stressful conditions that boarding can cause:

- Develop and implement ED-specific violence prevention strategies and provide training to clinicians and staff.
- Provide resources to help connect clinicians with behavioral health services to support their own mental health.
- Create peer-supported education and support groups to allow clinicians to discuss boarding-related concerns and solutions.
- Consider using technology to monitor patients' vital signs and alert clinicians when a patient's health is deteriorating.
- Consider using technology to augment and speed the preparation of clinical notes.
- Provide real-time access to language interpretation services for patients who do not speak English.

Who Needs a Seat at the Table Beyond Emergency Medicine and Nursing?

Hospital and health system CEOs need to be actively involved in leading approaches to reducing ED boarding. Summit panelist Dr. Gabe Kelen noted past successes with CEOs holding hospital executives accountable for reducing boarding.

Summit participants also noted the potential for broader partnerships to address ED boarding. Groups beyond the emergency medicine and nursing communities that have a vested interest in this effort could include the following:

- Surgeons and intensivists, who need to move patients out of operating rooms and ICUs and into medical/surgical inpatient beds.

- Hospitalists, who need to move patients smoothly through the healthcare system.
- Social workers, who play a crucial role in efforts to discharge inpatients who may not be able to independently return to a safe home.
- Long-term care leaders, who are essential for ensuring the smooth discharge of patients to nursing homes.
- Patients and patient advocacy groups, who bring a unique perspective on the experiences patients have throughout their care journey.
- Payers, whose policies and procedures may speed or impede moving patients through the healthcare system.

Opportunities for Government Leadership

Summit panelists and participants noted four potential areas of focus for federal and state leadership.

First, hospital leaders may need support from federal and state agencies to leverage certain types of change. For example, implementing surgical smoothing requires asking surgeons to change their schedules, including when they see patients outside of the hospital. Without support for such changes from government leaders, hospital leaders may not be in a position to risk upsetting their physician community or other stakeholders.

Second, as noted earlier, CoPs offer one policy lever for changing hospital behavior. As with any changes to CoPs and other government policies, the potential for unintended consequences would need to be carefully considered before instituting any changes.

Third, Summit panelist Dr. Alister Martin, Harvard Medical School and A Healthier Democracy, noted the power of federal Interagency Policy Councils (IPCs) to address complex issues such as ED boarding:

> IPCs, or Interagency Policy Councils, are often sort of the quickest way for folks to convene across different [federal] agencies. [This Summit conversation could be formalized] into an IPC with HHS and CMS, AHRQ, and the White House Domestic Policy Council to really begin to take a look at what can be done via executive action, what can be done via legislation, to really sort of put these things into gear and not just talk about it anymore.

Finally, government enforcement of standards may be required for such standards to have a significant impact on reducing ED boarding. As one example, The Joint Commission's four-hour boarding standard[45] is not enforceable as long as hospitals can choose a competitor's accreditation services. It may be that only consistent enforcement by the federal government will enable such standards to reduce ED boarding effectively.

Beyond these suggestions from Summit panelists, there is an opportunity for federal agencies such as AHRQ to convene key stakeholders to design and sponsor rigorous research to test approaches to reducing ED boarding.[f] Such efforts could include examining needed practice shifts within institutions and professions, identifying effective financial incentives, focusing on staffing and workforce development needs, and developing systems redesign efforts.

Moving Forward

ED boarding has been acknowledged as a problem for more than 40 years. Summit participants expressed the hope that their contributions would help the field move from talk to action.

The issues discussed during the Summit suggest one productive path for action: employ a systems-thinking approach that focuses on the ED and beyond to ensure that future actions are fruitful in reducing boarding.

The first step would be to identify a boarding standard that is reasonable from a patient care perspective and that meets two criteria. The standard would need to be 1) appropriate for promoting patient safety and quality of care and 2) feasible for hospitals to meet if the entire healthcare system were working ideally. The standard would not be intended to be implemented and would be used only to frame further discussion. As such, the standard only needs to be a rough approximation rather than precisely specified and need not be one on which broad consensus is achieved.

After the boarding standard is identified, a group of stakeholders across the healthcare system would convene, including hospitals, nursing homes, payers, federal and state agencies, patient advocacy groups, physicians, nurses, social workers, patients, and others, ensuring broad representation. Support would be provided by experts in health services research, economics, sociology, ethnography, medical ethics, organizational culture, human factors, systems mapping, and systems redesign. Facilitated by a neutral third party, this group of stakeholders would be charged with answering the following question: "What changes need to be made throughout the healthcare system to make it feasible for hospitals to meet the boarding standard consistently?"

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[f] After the Summit, AHRQ issued a Special Emphasis Notice regarding its interest in receiving health services research grant applications for addressing ED boarding and hospital crowding. See https://www.ahrq.gov/topics/emergency-department.html or https://grants.nih.gov/grants/guide/notice-files/NOT-HS-25-012.html for additional information.

To answer this question fully, the stakeholders would be asked to map the entire healthcare ecosystem as it relates to ED boarding. This would include identifying a wide range of healthcare structures, processes, practices, systems, regulations, and financial incentives that directly and indirectly affect boarding and how they relate to and affect one another, including the following:

- Processes within hospitals that directly relate to ED boarding (e.g., inpatient bed assignment and admissions processes) as well as staffing and processes that directly support these activities (e.g., nurse recruiting, training, and work schedules; environmental services staffing and processes).
- Processes within hospitals that affect the availability of inpatient beds (e.g., surgical scheduling, discharge processes, and discharge timing) and processes that directly affect these activities (e.g., physicians' outpatient clinical schedules).
- Structures, processes, systems, and requirements beyond the hospital that affect the ability to make inpatient beds available (e.g., nursing home admissions, prior authorization, state and federal regulations, payer reimbursement).
- Additional factors that affect patient experiences and outcomes.

This stakeholder group would be charged with thinking broadly in the context of avoiding blame and focusing on a high-reliability organization-like approach to identifying the underlying causes of capacity and patient flow challenges throughout the healthcare system.

Finally, the stakeholder group would be asked to identify a limited number of high-impact policy and practice levers that could be used to reduce boarding along with the full range of steps needed to implement these changes and approaches to mitigating potential unintended consequences.

These recommendations would then form the core of a much-needed national action plan to reduce ED boarding and bring our nation closer to the vision of timely, high-quality, and safe healthcare for all patients in the ED.

Endnotes

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Appendices

Appendix A: Summit Agenda

Agency for Healthcare Research and Quality (AHRQ)

AHRQ Summit to Address Emergency Department Boarding

October 8, 2024

AGENDA

MORNING (IN PERSON + LIVE WEBCAST)

9:00 a.m. – 9:15 a.m.	**Welcome From AHRQ Director** Robert Otto Valdez, PhD, MHSA Director Agency for Healthcare Research and Quality
9:15 a.m. – 10:30 a.m.	**Impacts of Emergency Department Boarding** *Moderator:* Robin Weinick, PhD, ACC Principal Resonant, LLC *Video Presentation:* Rosie Bartel Patient Partner *Panelists:* Charity Watkins, PhD, MSW Assistant Professor Duke University and North Carolina Central University Chris Dellinger, MBA, BSN, RN, FAEN 2024 President Emergency Nurses Association Ula Hwang, MD, MPH, FACEP Professor of Emergency Medicine and Population Health Medical Director of Geriatric Emergency Medicine New York University Grossman School of Medicine Brandon Morshedi, MD, DPT, NREMT-P, FACEP, FAEMS Emergency Medicine & EMS Physician University of Arkansas for Medical Sciences; Global Medical Response
10:30 a.m. – 10:50 a.m.	**BREAK**

10:50 a.m. – 11:30 a.m. **Conversation With the CEO: A Fireside Chat With Dr. Brendan Carr, Mount Sinai Health System**

Moderator:
Robin Weinick, PhD, ACC
Principal
Resonant, LLC

Brendan G. Carr, MD, MA, MS
Chief Executive Officer
Professor and Kenneth L. Davis, MD, Distinguished Chair
Mount Sinai Health System

11:30 a.m. – 12:45 p.m. **Myths and Matters of Emergency Department Boarding Solutions: Insights From the Field**

Moderator:
Laura L. Sessums, JD, MD
Chief Medical Officer
Agency for Healthcare Research and Quality

Panelists:
Gabe Kelen, MD, FRCP(C), FACEP, FAAEM
Professor and Chair
Department of Emergency Medicine
Johns Hopkins University

Peter Viccellio, MD, FACEP
Professor and Vice Chairman
Department of Emergency Medicine
Associate Chief Medical Officer
Stony Brook University Renaissance School of Medicine

Vicki Norton, MD, FAAEM
President Elect
American Academy of Emergency Medicine
Vice President
Palm Beach County Medical Society Board of Directors
Clinical Affiliate Assistant Professor
Florida Atlantic University

Alister Martin, MD, MPP
Assistant Professor
Harvard Medical School
Chief Executive Officer
A Healthier Democracy

Jesse M. Pines, MD, MBA, MSCE
Chief Innovation Officer
US Acute Care Solutions

12:45 p.m. – 12:50 p.m. **Morning Closing Remarks**
Sean Bruna, PhD, MA, MA
Senior Advisor to the Director
Agency for Healthcare Research and Quality

AFTERNOON (IN PERSON ONLY)

12:50 p.m. – 1:50 p.m. **LUNCH**

1:50 p.m. – 2:05 p.m. **Framing the Breakouts, Context for Solutions**
Robin Weinick, PhD, ACC
Principal
Resonant, LLC

2:05 p.m. – 2:20 p.m. **BREAK (Escort to Breakout Sessions)**

2:20 p.m. – 3:35 p.m. **Concurrent Breakout Groups**

1. System Wide Financial and Regulatory Enhancements
2. Realtime Regional Health System Data, Measurement, and Metrics
3. Sustained Workforce Development, Supportive Technology and Workforce Safety
4. Rural Solutions
5. Behavioral Health Connections

3:35 p.m. – 3:50 p.m. **BREAK (Escort Back to Great Hall)**

3:50 p.m. – 4:20 p.m. **Breakout Group Report Outs**

4:20 p.m. – 4:30 p.m. **Day Closing and Continued Engagement**
Sean Bruna, PhD, MA, MA
Senior Advisor to the Director
Agency for Healthcare Research and Quality

4:30 p.m. **Summit Concludes**

Appendix B: Summit Participants

Agency for Healthcare Research and Quality (AHRQ)

AHRQ Summit to Address Emergency Department Boarding

October 8, 2024

PARTICIPANTS

Jean Accius, PhD
President and Chief Executive Officer
CHC: Creating Healthier Communities

Abdulaziz Ahmed, PhD
Associate Professor
University of Alabama at Birmingham

Helene Anderson, DNP
Vice President of Capacity and Outreach
Apprise Health Insights

Walter Belleza
Centers for Medicare & Medicaid Services

Kari Benson, BS, MS
Deputy Assistant Secretary for Aging
Administration on Aging Administration for Community Living

Arlene Bierman, MD, MS
Chief Strategy Officer
Agency for Healthcare Research and Quality

Cristina Boccuti, MA, MPP
Vice President
AARP

Rachael M. Boicourt, MHS
Staff Service Fellow
Agency for Healthcare Research and Quality

Sean Bruna, PhD, MA, MA
Senior Advisor
Agency for Healthcare Research and Quality

Jose Cabanas, MPH, MD
President
National Association of EMS Physicians

Andrea Callow, JD
Administration for Community Living

Brendan G. Carr, MD, MA, MS
Chief Executive Officer
Mount Sinai Health System

James Chamberlain, MD
Children's National Hospital

Tahleah Chappel, MS
Rural EMS Program Coordinator
Federal Office of Rural Health Policy
Health Resources and Services Administration

Tim Clement, MPH
Vice President of Federal Government Affairs
Mental Health America

Emily Cleveland Manchanda, MD, MPH
Interim Vice President
Equitable Health Systems
American Medical Association

Karen S. Cosby, MD, FACEP, CPPS
Agency for Healthcare Research and Quality

James Del Vecchio, MD
Chair
Emergency Care Clinical Excellence Council
Trinity Health

Chris Dellinger, MBA, BSN, RN, FAEN
President
Emergency Nurses Association

Barbara DiPietro, PhD
Senior Director of Policy
National Health Care for the Homeless

Deborah Diercks, MD, MSc, MBA
Professor and Chair of Emergency Medicine
UT Southwestern Medical Center

Marisa Dowling, MD, MPP
Physician Advisor
Centers for Medicare & Medicaid Services

Michael El-Shammaa, MS
Project Officer
Center for the Biomedical Advanced Research and Development Authority
Administration for Strategic Preparedness and Response

Ryan Elza, MS
Administration for Community Living

Ari Friedman, PHD, MD
UPenn

Neeraj Gandotra, MD
Chief Medical Officer
Substance Abuse and Mental Health Services Administration

Michael Gerardi, MD
Chief Medical Officer
Acute Medical Management
Morristown Medical Center, New Jersey

Brett Glotzbecker, MD
Chief Medical Officer
University Hospitals Cleveland Medical Center

Bradley Goettl, DNP, RN
Chief Clinical Officer
Emergency Nurses Association

Vicki Good, DNP
Chief Clinical Officer
American Association of Critical Care Nurses

Zack Gould, BA
Policy Associate, Child and Family Health
National Academy for State Health Policy

Margaret Greenwood-Ericksen, MD
Associate Professor of Emergency Medicine
Director
Center for Health Policy
University of New Mexico

Ken Grubbs, DNP
Chief Nursing Officer/Executive Vice President
The Joint Commission

Alison Haddock, MD
President
American College of Emergency Physicians

Scott Hamilton, BA
Managing Director
Brain Care Catalyst Foundation

Monika Haugstetter, MHA, MSN, RN
Health Scientist Administrator
Agency for Healthcare Research and Quality

Kelly Hojnacki, RN
Director, Clinical Transformation
Trinity Health

Nicole Howell, BA
Director of Workforce Policy
LeadingAge

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