

TRANSFORMING HEALTHCARE

A Clinical Decision Algorithm for Hospital Inpatients With Impaired Decision-Making Capacity

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BACKGROUND: Impaired decision-making capacity is a frequent complication of inpatient hospitalization, with potential negative impacts on patients and the healthcare system. Studies of clinician behavior show difficulty in diagnosis and management of capacity impairment. Appropriate management of incapacitated patients may benefit safety, medical outcomes, and healthcare expenditure.

OBJECTIVE: To create a clinical decision algorithm for identification and management of hospital inpatients with impaired capacity.

METHODS: The Department of Risk Management at San Francisco General Hospital (SFGH) convened a multidisciplinary workgroup to improve management of incapacitated patients. The workgroup studied institutional data and case experience, solicited mental health expertise, and performed a brief review of published tools for management of incapacitated patients. The workgroup produced a clinical decision algorithm for hospital inpatients with impaired decision-making capacity.

RESULTS: The algorithm is explained via 3 common scenarios, and notable details include identification and management in a single visual diagram, emphasis on safety planning for a high-risk subset of incapacitated patients, and explanation for multiple disciplines of consultation. The algorithm was disseminated to providers, workshops were conducted, and associated quality improvements were implemented. Initial feedback was positive, relating to clinical competency, decreased practice anxiety, and improved teamwork.

CONCLUSIONS: Impaired decision-making capacity is frequent among hospitalized patients, including at SFGH. An algorithm, based on institutional review and prior published work, is presented as an example to address the common challenge of acutely ill patients with impaired decision-making capacity. *Journal of Hospital Medicine* 2014;9:527–532. © 2014 Society of Hospital Medicine

Decision-making capacity is a dynamic, integrative cognitive function necessary for informed consent. Capacity is assessed relative to a specific choice about medical care (eg, Does this patient with mild Alzheimer's disease have the capacity to decide whether to undergo valvuloplasty for severe aortic stenosis?), Capacity may be impaired by acute illnesses (eg, toxidromes and withdrawal states, medical illness-related delirium, decompensated psychiatric episodes), as well as chronic conditions (eg, dementia, developmental disability, traumatic brain injuries, central nervous system (CNS) degenerative disorders). Given the proper training, clinicians from any specialty can assess a patient's decision-making capacity.¹ A patient must satisfy 4 principles to have the capacity for a given decision: *understanding of the condition, ability*

to communicate a choice, conception of the risks and benefits of the decision, and a rational approach to decision making.^{2–4} Management of incapacitated persons may require consideration of the individual's stated or demonstrated preferences, medical ethics principles (eg, to consider the balance between autonomy, beneficence, and nonmaleficence during shared decision making), and institutional and situational norms and standards. Management may include immediate or long-term medical and safety planning, and the selection of a surrogate decision maker or public guardian.^{1–8} A related term, competency, describes a legal judgment regarding a person's ability to make decisions, and persons deemed incompetent require an appointed guardian to make 1 or more types of decision (eg, medical, financial, and long-term care planning).^{1,8}

Over one-quarter of general medical inpatients display impaired decision-making capacity based on a recent review of multiple studies.² Nursing home residents, persons with Alzheimer's dementia, and persons with developmental disability—groups commonly encountered in the inpatient setting—demonstrate impaired capacity in greater than 40% to 60% of cases.² Capacity impairment is present in three-quarters of inpatients with life-threatening illnesses.⁵

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The frequency of capacity impairment is complicated by the fact that physicians fail to recognize impaired capacity in as much as 60% of cases.^{1,2} Misunderstanding of the laws and medical and ethical principles related to capacity is common, even among specialists who commonly care for incapacitated patients, such as consult liaison psychiatrists, geriatricians, and psychologists.¹

Loss of decision-making capacity may be associated with negative consequences to the patient and to the provider-patient dyad. Patients with capacity impairment have been shown to have an increased risk of mortality in a community setting.⁶ Potential ethical pitfalls between provider and incapacitated patient have been described.⁵ The high cost of long-term management of subsets of incapacitated patients has also been noted.⁷

Improved identification and management of incapacitated patients has potential benefit to medical outcomes, patient safety, and cost containment.^{6,7,9} The importance of education in this regard, especially to early career clinicians and to providers in specialties other than mental health, has been noted.⁹ This article describes a clinical quality improvement project at San Francisco General Hospital and Trauma Center (SFGH) to improve provider identification and management of patients with impaired decision-making capacity via a clinical decision algorithm.

METHODS

In 2012, the Department of Risk Management at SFGH created a multidisciplinary workgroup, including attending physicians, nurses, administrators, and hospital safety officers to improve the institutional process for identification and management of inpatients with impaired decision-making capacity. The workgroup reviewed prior experience with incapacitated patients and data from multiple sources, including unusual occurrence reports, hospital root cause analyses, and hospital policies regarding patients with cognitive impairment. Expert opinion was solicited from attending psychiatry and neuropsychology providers.

SFGH—an urban, academic, safety-net hospital—cares for a diverse, underserved, and medically vulnerable patient population with high rates of cognitive and capacity impairment. A publication currently under review from SFGH shows that among a cohort of roughly 700 general medical inpatients 50 years and older, greater than 54% have mild or greater degrees of cognitive impairment based on the Telephone Interview for Cognitive Status test (unpublished data).¹⁰ Among SFGH medical inpatients with extended lengths of stay, roughly one-third have impaired capacity, require a family surrogate decision maker, or have an established public guardian (unpublished data). Among incapacitated patients, a particularly challenging subset have impaired decision making but significant physical capacity, creating risk

of harm to self or others (eg, during the 18 months preintervention, an average of 9 incapacitated but physically capable inpatients per month attempted to leave SFGH prior to discharge) (unpublished data).

The majority of incapacitated patients at SFGH are cared for by 5 inpatient medical services staffed by resident and attending physicians from the University of California San Francisco: cardiology, family medicine, internal medicine, neurology, and psychiatry (unpublished data). Despite the commonality of capacity impairment on these services, education about capacity impairment and management was consistently reviewed only in the Department of Psychiatry.

Challenges common to prior experience with incapacitated patients were considered, including inefficient navigation of a complex, multistep identification and management process; difficulty addressing the high-risk subset of incapacitated, able-bodied patients who may pose an immediate safety risk; and incomplete understanding of the timing and indications for consultants (including psychiatry, neuropsychology, and medical ethics). To improve clinical outcome and patient safety through clinician identification and management, the workgroup created a clinical decision algorithm in a visual process map format for ease of use at the point of care.

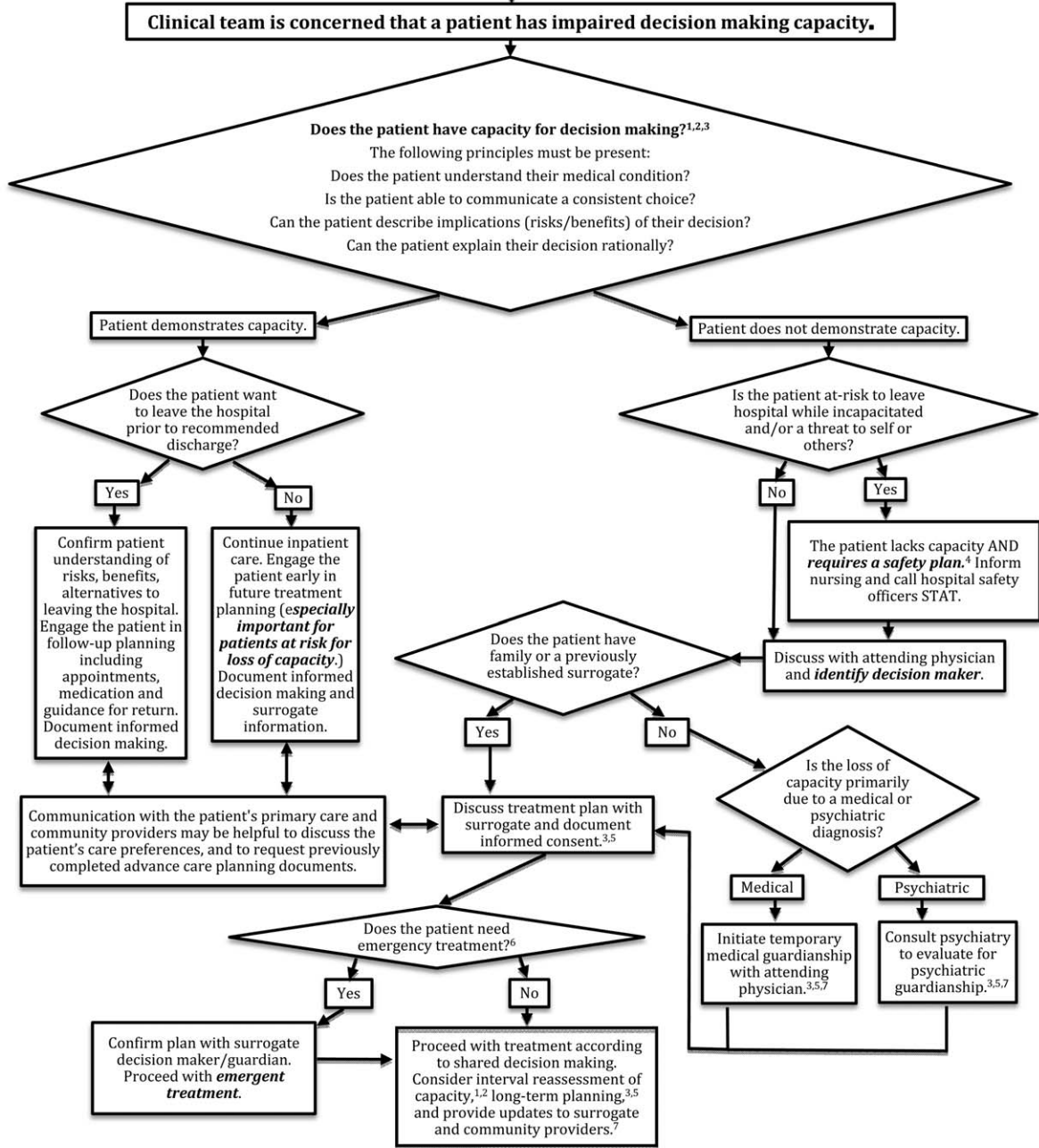
Using MEDLINE and PubMed, the workgroup conducted a brief review of existing tools for incapacitated patients with relevant search terms and Medical Subjects Headings, including capacity, inpatient, shared decision making, mental competency, guideline, and algorithm. Publications reviewed included tools for capacity assessment (Addenbrooke's Cognitive Examination, MacArthur Competence Assessment Tool for Treatment)^{2-4,11} delineation of the basic process of capacity evaluation and subsequent management,¹²⁻¹⁶ and explanation of the role of specialty consultation.^{3,9,17} Specific attention was given to finding published visual algorithms; here, search results tended to focus on specialty consultation (eg, neuropsychology testing),¹⁷ highly specific clinical situations (eg, sexual assault),¹⁸ or to systems outside the United States.¹⁹⁻²² Byatt et al.'s work (2006) contains a useful visual algorithm about management of incapacitated patients, but it operates from the perspective of consult liaison psychiatrists, and the algorithm does not include principles of capacity assessment.²³ Derse (2005) provides a text-based algorithm relevant to primary inpatient providers, but does not have a visual illustration.¹⁶ In our review, we were unable to find a visual algorithm that consolidates the process of identification, evaluation, and management of hospital inpatients with impaired decision-making capacity.

Based on the described needs assessment, the workgroup created a draft algorithm for review by the SFGH medical executive committee, nursing quality council, and ethics committee.

CLINICAL DECISION ALGORITHM FOR HOSPITAL INPATIENTS WITH IMPAIRED DECISION-MAKING CAPACITY

FOR QUESTIONS, CALL LEGAL/RISK MANAGEMENT DEPARTMENT (OFFICE XXX-XXXX, 24-HOUR PAGER XXX-XXXX)

For all patients, especially those with advanced age, delirium, dementia, cognitive disability, substance use/withdrawal, psychiatric or CNS illness, the medical team should engage in shared treatment planning, and document the patient's care preferences and surrogate information while capacity is intact.



¹ If capacity determination is unclear, discuss with psychiatry consult service.
² For assistance with detailed cognitive testing, consider neuropsychology referral (not obligatory for standard capacity determination).
³ For assistance with possible ethical conflicts, consider hospital ethics committee review.
⁴ "Safety plan" indicates a multidisciplinary discussion with nursing, safety officers, and consultants as needed. Outcomes may include involuntary hospitalization, close nursing observation, restraints, bedside safety officers, etc.
⁵ For questions regarding surrogate decision making, involuntary hospitalization, and guardianship, discuss with Legal/Risk Management Department.
⁶ "Emergency" defined here as: without treatment the patient is at risk for serious harm or death.
⁷ For all incapacitated patients, especially vulnerable and unbefriended patients, social work consultation is recommended.

FIG. 1. The Clinical Decision Algorithm for Hospital Inpatients With Impaired Decision-Making Capacity.

RESULTS

The Clinical Decision Algorithm for Hospital Inpatients With Impaired Decision-Making Capacity (adapted version, Figure 1) consolidates identification

and management into a 1-page visual process map, emphasizes safety planning for high-risk patients, and explains indication and timing for multidisciplinary consultation, thereby addressing the 3 most prominent

challenges based on our data and case review. Following hospital executive approval, the algorithm and a set of illustrative cases were disseminated to clinicians via email from service leadership, laminated copies were posted in housestaff workrooms, an electronic copy was posted on the website of the SFGH Department of Risk Management, and the algorithm was incorporated into hospital policy. Workgroup members conducted trainings with housestaff from the services identified as most frequently caring for incapacitated inpatients.

During trainings, housestaff participants expressed an improved sense of understanding and decreased anxiety about identification and management of incapacitated patients. During subsequent discussions, inpatient housestaff noted improvement in teamwork with safety officers, including cases involving agitated or threatening patients prior to capacity assessment.

An unexpected benefit of the algorithm was recognition of the need for associated resources, including a surrogate decision-maker documentation form, off-hours attending physician oversight for medical inpatients with capacity-related emergencies, and a formal agreement with hospital safety officers regarding the care of high-risk incapacitated patients not previously on a legal hold or surrogate guardianship. These were created in parallel with the algorithm and have become an integral part of management of incapacitated patients.

CLINICAL DECISION ALGORITHM APPLICATION TO PATIENT SCENARIOS

The following 3 scenarios exemplify common challenges in caring for inpatients with compromised decision-making capacity. Assessment and multidisciplinary management are explained in relation to the clinical decision algorithm (Figure 1.)

Case 1

An 87-year-old woman with mild cognitive impairment presents to the emergency department with community-acquired pneumonia. The patient is widowed, lives alone in a senior community, and has an established relationship with a primary care physician in the area. On initial examination, the patient is febrile and dyspneic, but still alert and able to give a coherent history. She is able to close the loop and teach-back regarding the diagnosis of pneumonia and agrees with the treatment plan as explained. Should consideration be given to this patient's decision-making capacity at this time? What capacity-related information would be helpful to review with the patient and to document in the record?

Inpatient teams should prospectively identify patients at-risk for loss of capacity and create a shared treatment plan with the patient while capacity is intact (as noted in the top box in Figure 1). When the inpatient team first meets this patient, she retains

decision-making capacity with regard to hospitalization for pneumonia (left branch after first diamond, Figure 1); however she is at risk for delirium based on her age, mild cognitive impairment, and pneumonia.²⁵ She is willing to stay in the hospital for treatment (right branch after second diamond, Figure 1). For this patient at risk for loss of capacity, it is especially important that the inpatient team explore the patient's care preferences regarding predictable crisis points in the care plan (eg, need for invasive respiratory support or intensive care unit admission.) Her surrogate decision maker's name and contact information should be confirmed. Communication with the patient's primary care provider is advised to review knowledge about the patient's care preferences and request previously completed advance-care planning documents.

Case 2

A 37-year-old man is admitted to the hospital for alcohol withdrawal. On hospital day 1, he develops hyperactive delirium and attempts to leave the hospital. The patient becomes agitated and physically aggressive when the nurse and physician inform him that it is not safe to leave the hospital. He denies having "any health problems," he is unable to explain potential risks if his alcohol withdrawal is left untreated, and he cannot articulate a plan to care for himself. The patient attempts to strike a staff member and runs out of the inpatient unit. The patient's family members live in the area, and they can be reached by phone. What are the next appropriate management steps?

This patient has alcohol withdrawal delirium, an emergent medical condition requiring inpatient treatment. The patient demonstrates impaired decision-making capacity related to treatment because he does not understand his medical condition, he is unable to describe the consequences of the proposed action to leave the hospital, and he is not explaining his decision in rational terms (right hand branch of the algorithm after first diamond, Figure 1). The situation is made more urgent by the patient's aggressive behavior and flight from the inpatient unit, and he poses a risk of harm to self, to staff, and the public (right branch after second diamond, Figure 1). This patient requires a safety plan, and hospital safety officers should be notified immediately. The attending physician and surrogate decision maker should be contacted to create a safe management plan. In this case, a family member is available (left branch after third diamond, Figure 1). The patient requires emergent treatment of his alcohol withdrawal (left branch after fourth diamond, Figure 1). The team should proceed with this emergent treatment with documentation of the assessment, plan, and informed consent of the surrogate. As the patient recovers from acute alcohol withdrawal, the team should reassess his decision-making capacity and continue to involve the surrogate decision maker until

the patient regains capacity to make his own decisions.

Case 3

A 74-year-old woman is brought to the hospital by ambulance after being found by her neighbors wandering the hallways of her apartment building. She is disoriented, and her neighbors report a progressive functional decline over the past several months with worsening forgetfulness and occasional falls. She recently started a small fire in her toaster, which a neighbor extinguished after hearing the fire alarm. She is admitted and ultimately diagnosed her with Alzheimer's dementia (Functional Assessment Staging Test (FAST) Tool stage 6a). She is chronically disoriented, happy to be cared for by the hospital staff, and unable to get out of bed independently. She is deemed unsafe to be discharged to home, but she declines to be transferred to a location other than her apartment and declines in-home care. She has no family or friends. What is the most appropriate course of action to establish a safe long-term plan for the patient? What medicolegal principles inform the team's responsibility and authority? What consultations may be helpful to the primary medical team?

This patient is incapacitated with regard to long-term care planning due to dementia. She does not understand her medical condition and cannot articulate the risks and benefits of returning to her apartment (right branch of algorithm after first diamond, Figure 1). The patient is physically unable leave the hospital and does not pose an immediate threat to self or others, thus safety officer assistance is not immediately indicated (left branch at second diamond, Figure 1). Without an available surrogate, this patient might be classified as unbefriended or unrepresented.⁷ She will likely require a physician to assist with immediate medical decisions (bottom right corner of algorithm, Figure 1). Emergent treatment is not needed (right branch after fourth diamond,) but long term planning for this vulnerable patient should begin early in the hospital course. Discussion between inpatient and community-based providers, especially primary care, is recommended to understand the patient's prior care preferences and investigate if she has completed advance care planning documents (two-headed arrow connecting to square at left side of algorithm.) Involvement of the hospital risk management/legal department may assist with the legal proceedings needed to establish long-term guardianship (algorithm footnote 5, Figure 1). Ethics consultation may be helpful to consider the balance between the patient's demonstrated values, her autonomy, and the role of substituted judgment in long-term care planning⁷ (algorithm footnote 3, Figure 1). Psychiatric or neuropsychology consultation during her inpatient admission may be useful in preparation for a competency hearing (algorithm footnotes 1 and 2, Figure 1). Social

work consultation to provide advocacy for this vulnerable patient would be advisable (algorithm footnote 7).

DISCUSSION

Impaired decision-making capacity is a common and challenging condition among hospitalized patients, including at our institution. Prior studies show that physicians frequently fail to recognize capacity impairment, and also demonstrate common misunderstandings about the medicolegal framework that governs capacity determination and subsequent care. Patients with impaired decision-making capacity are vulnerable to adverse outcomes, and there is potential for negative effects on healthcare systems. The management of patients with impaired capacity may involve multiple disciplines and a complex intersection of medical, legal, ethical, and neuropsychological principles.

To promote safety of this vulnerable population at SFGH, our workgroup created a visual algorithm to guide clinicians. The algorithm may improve on existing tools by consolidating the steps from identification through management into a 1-page visual tool, by emphasizing safety planning for high-risk incapacitated patients and by elucidating roles and timing for other members of the multidisciplinary management team. Creation of the algorithm facilitated intervention for other practical issues, including institutional and departmental agreements and documentation regarding surrogate decision makers for incapacitated patients.

Although based on a multispecialty institutional review and previously published tools, there are potential limitations to this tool. It seems reasonable to assume that a tool to organize a complex process, such as identification and management of incapacitated patients, should improve patient care versus a non-standardized process. Although the algorithm is posted in resident workrooms, on the hospital's risk management website, and incorporated as part of hospital policy, we have not yet had the opportunity to study the frequency of its use and impact in patient care. Patient safety and clinical outcome of patients managed with this algorithm could be assessed; however, the impact of the algorithm at SFGH may be confounded by a separate intervention addressing nursing and safety officers that was initiated shortly after the algorithm was produced.

To assess health-system effects of incapacitated patients, future studies might compare patients with capacity impairment versus those with intact decision making relative to demographic background and payer mix, rates of adverse events during inpatient stay (eg, hospital-acquired injury), rates of morbidity and mortality, rate of provider identification and documentation of surrogates, patient and surrogate satisfaction data, length of stay and cost of hospitalization, and rates of successful discharge to a

community-based setting. We present this algorithm as an example for diverse settings to address the common challenge of caring for acutely ill patients with impaired decision-making capacity.

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