Stop Doing Needless Things! Saving Healthcare Resources During COVID-19 and Beyond

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The COVID-19 outbreak is putting tremendous strain on the US healthcare system, with a direct impact on medical professionals, hospital systems, and physical resources. While comprehensive public health and regulatory efforts are essential to overcome this crisis, it is important to recognize this moment as an opportunity to provide more intelligent and more efficient care in spite of increasing patient volumes and fewer resources. Specifically, we must limit unnecessary and wasteful medical practices and improve the delivery of those services which enhance the quality of patient care. In doing so, we will increase availability of the critical resources required for the provision of high-quality care to those in greatest need both now and in the future.

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With the COVID-19 outbreak sweeping across the globe, now is the time to critically re-evaluate common practices in the United States (US) healthcare system. Recent estimates place the annual cost of wasteful practices at $760 to $935 billion dollars, a number which represent approximately 25% of total US healthcare spending.[1] Hence, there is a substantial financial incentive to reduce medical waste, which can be loosely defined as medical practices that do not enhance, and in many cases diminish, the quality of care that patients receive. In the face of a rapidly expanding global infectious pandemic, the benefits of reducing medical waste are even more tangible: If we stop doing unnecessary and even harmful things to patients, there will be more resources available to provide high-quality care to those in greatest need. Notably, healthcare institutions across the globe have already been forced to transform the provision of patient care, including the rapid expansion of telemedicine services, protocol-based patient triage, and the deferment of elective surgeries. This essay critically evaluates current changes in our clinical practice models and also identifies additional opportunities to reduce waste, improve care delivery, and enhance our ability to support the most vulnerable now and in the future.

1. Protection of front-line acute care services for the most critically ill. The emergency department is the hospital's front line in our battle against serious diseases both familiar and foreign. Here, you will find two very important groups of people: (1) hard-working medical professionals tasked with distinguishing "truly sick" from "less truly sick" while simultaneously performing essential life-saving measures for the most critically ill and (2) high-risk patients packed together in a constrained physical environment. The arrival of the patient with asymptomatic hypertension takes valuable time, physical space, and cognitive capacity away from medical providers. Under normal circumstances, the arrival of the patient with mild upper respiratory symptoms clearly not warranting hospitalization exposes both medical professionals and high-risk patients to potential harm. In order to meet the challenges presented by this and future pandemics, we must protect and support those working and receiving care on the front lines by offloading the burden of non-urgent medical care. This will require the expansion of opportunities for convenient and affordable healthcare access, including broader access to primary care and non-emergency acute care services. Access to these services may be facilitated, in part, by comprehensive healthcare coverage assistance for low- and middle-income persons, community-based care initiatives, growth of the primary care medical workforce, and deliberate integration of telemedicine services and protocol-based triage services into conventional medical practices.
2. Expansion and improvement of telemedicine services as an opportunity to improve access to care. The COVID-19 outbreak has forced many institutions to cancel non-emergency clinical appointments for both medical and surgical patients, with the goal of protecting patients, visitors, and medical professionals from infectious exposure. As a result, we are witnessing a rapid expansion of telemedicine-based care, which allows for care provision despite the constraints of physical isolation.[2] While for many, this may be perceived as a sudden and cumbersome change in clinical practice, in reality, this represents an extraordinary opportunity to

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identify deficiencies, enhance usability by soliciting feedback from patients and medical professionals, and improve our ability deliver high-quality and efficient patient-centered care. Failure to identify this moment as a launching point for the long-term success of integrated telemedicine programs that expand care access to patients and their caregivers would represent a substantial opportunity loss.

3. Comprehensive preoperative medical optimization for surgical patients. The COVID-19 outbreak has appropriately led to the widespread deferment of elective surgeries and other procedural interventions. Upon resumption of normal care activities, it will be essential that we do not rush to perform surgery in those with insufficient optimization of medical comorbidities, which heightens the risk for postoperative complications and increases the utilization of critical hospital resources. Common examples of poorly optimized preoperative conditions (and downstream consequences) include the following: active cigarette smoking (impaired wound healing, perioperative respiratory complications),[3] anemia (increased allogeneic transfusion rates, longer hospitalizations),[4] and poorly controlled diabetes mellitus (hyper- and hypoglycemic events, wound infections).[5] Hence, preoperative optimization, with deferment of surgery in those with insufficient optimization, must be considered the standard of care for all practices moving forward. This is particularly important for surgical procedures known to disproportionately consume critical hospital resources (e.g., blood products, intensive care unit capacity) or lead to prolonged hospitalizations.
4. Elimination of diagnostic tests that do not improve outcomes or enhance patient care decisions. Inpatient medicine is full of examples, including routine morning laboratory draws, daily chest radiographs to assess lung fields in ventilated patients or confirm the placement of a variety of tubes (i.e., enteral, endotracheal), microbial cultures in the presence of asymptomatic bacteriuria or isolated fever, serial arterial blood gas analyses to assess improvements in oxygenation status, and computed tomography pulmonary angiography (CTPA) for hypoxemic patients with low pre-test probability for acute pulmonary embolic disease. Similar examples exist in outpatient practice, including some cancer screening tests. The potential benefit of each test must be weighed against the potential harms, including the very real possibility of overwhelming strained hospital physical resources and personnel. Furthermore, each diagnostic test must be ordered with the explicit understanding that results must positively impact subsequent care decisions and minimize the risk of iatrogenic harm. This consideration is critically important as we assess the long-term sustainability of the US healthcare system.
5. Enhancing supplies of personal protective equipment (PPE) for medical professionals. The ongoing COVID-19 has been marked by reports of insufficient PPE for healthcare workers, including masks, eye protection, gowns, and gloves. While the long-term solution includes increasing supplies of this equipment, several steps may be taken now. This includes a careful assessment of the utility of routine contact precautions in those colonized with multi-drug resistant organisms, as there is minimal evidence to suggest that these measures reduce infectious transmission,[6] reductions in the number of medical professionals involved in the care of those with true indications for higher levels of isolation, and the minimization of room entry in those with suspected or confirmed COVID-19. This may be accomplished by aligning drug administration and routine nursing and clinical care activities at set times of the day, using telemedicine or other mobile technologies to communicate with patients and their families, and monitoring and controlling hospital devices (e.g., infusion pumps, ventilators) outside of the patient room or with remote technologies.
6. Implementation of patient blood management (PBM) principles for the minimization of allogeneic blood transfusion. The COVID-19 pandemic has placed tremendous strain on blood collection operations across the nation. In times of limited blood bank resources, it is essential to embrace the principles of PBM, which are defined by evidence-based strategies to improve patient outcomes through the optimization of a patient's own blood health, including the prevention and treatment of anemia, promotion of hemostasis, and the responsible utilization of allogeneic blood products. With regard to anemia, it must be recognized that iatrogenic anemia is markedly common in hospitalized patients and is associated with increased allogeneic transfusion requirements and poor patient outcomes.[7] Common-sense strategies to combat iatrogenic anemia include eliminating unnecessary phlebotomy, reducing the frequency of phlebotomy, using evidence-based guidelines to evaluate the risk of bleeding versus thrombosis in patients being considered for anticoagulation therapy, employing appropriate gastrointestinal bleeding prophylaxis in high-risk patients, and utilizing minimal-volume blood collection strategies (i.e., pediatric blood draws) with closed-loop sampling devices.[8]
7. Reductions in non-essential care provision when patients are sleeping and/or resources are limited. Being hospitalized is rarely an enjoyable experience. Attempting to normalize an inherently abnormal existence for patients in the hospital not only conserves precious resources (material and personnel) but also improves provider-patient relationships and overall quality of care. This includes limiting or deferring care activities at night-time when patients may be sleeping and/or staffing resources are thin (e.g., vital sign assessments, phlebotomy sampling, medication administration, and radiology

testing in patients with stable cardiopulmonary status) and silencing non-essential physiologic alarms that contribute to alarm fatigue, cognitive strain, and patient and provider anxiety. Limiting these activities will allow medical professionals to focus their efforts on the increasing number of patients with COVID-19, particularly those with the most critical illness.

Despite the challenges and tragedy of the COVID-19 outbreak, this should serve as the critical moment in which we abandon wasteful practices and re-evaluate the way in which we provide medical care both now and in the future. While true defeat of this disease will only come with comprehensive public health and regulatory efforts (i.e., social isolation, broad availability of diagnostic testing, contact tracing), we must rise to the occasion and provide smarter and more efficient care despite increasing patient volumes and fewer resources. This is the future we must create.

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Compliance with Ethical Standards:

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