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Resource Allocation in Healthcare

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Abstract:

The overall purpose of this research was to find ways that resources are allocated throughout the healthcare system. Resources are not always what we think of when it comes to healthcare. While it does include personal protective equipment, ventilators, and beds, it also includes the personnel that are required to deliver the care essential to survival. It is well known that many ethical issues revolve around the allocation of such resources in healthcare, but it is unknown what the best solution to sharing these resources is during pandemics such as COVID-19.

Resource Allocation in Healthcare

Currently, the world seems to be completely up in the air when it comes to the COVID-19 pandemic. Resource allocation in healthcare is a serious topic and should be looked at further. When resources are limited and demand begins to outweigh the supply, allocation becomes a serious problem. This has been evident during this pandemic with N-95 masks, ICU beds, ventilators, and even health care professionals themselves. In addition, due to the difficulties in allocation there are varying effects of disparities that are seen that continue to affect a number of individuals in varying ways regarding their treatment and care.

Nature of the Problem

The nature of the problem must begin with the look at what goods are being allocated. Healthcare goods can be looked at in a variety of ways and depends on the situation at hand.

> When resources are construed as social goods, allocation may proceed in terms of competition between individuals or on an aggregate basis by evaluating which distribution would (be likely to) produce the greatest amount of good for the greatest number of people (Kluge, 2007, p. 2).

Some examples of social goods are clean water, public health, food and drug safety, and transportation. These are all goods that can be allocated in a way that the public are able to get their hands on and use. However, “when resources are construed as commodities, the allocation then no longer takes into account competing rights or maximizing the aggregate good but economic considerations take their place” (Kluge, 2007, p. 2). When one thinks of the current pandemic that is affecting millions of people worldwide, goods in healthcare are being considered a commodity. Limitation is considered part of life and will always be present, but these ideas apply to healthcare just as they would to any other good or service being provided.

Resources that are Scare

"When public health emergencies occur, they may result in mass casualties and a surge in demand for hospital-based care" (Kuschner et al., 2010, p. 1). Not only will the demand for care be hard to compensate but begins to outweigh the supply of the healthcare goods needed to treat patients with severe complications.

> The amount of resources will always be limited because there is a limit to the number of facilities that can be constructed, the number of instruments that can be manufactured, or the number of organs, amount of blood, etc. that will be available (Kluge, 2007, p. 3).

In the United States one of the earliest scarcity of supplies was with the N-95 masks for health care workers. Following the demand of N-95 masks came intensive care unit beds, ventilators, and health care professionals. Physician's themselves play a critical role in healthcare and are often the gatekeepers to healthcare resources. Often "policies for allocating scare health care resources can impede their ability to fulfill their daily obligations to their patients" (American Medical Association, n.d.). It is crucial that there be a number of people who can deliver care because it is essential for survival. Therefore, the problem does not often just stem from individual resources but personnel as well.

Real Life Example: COVID-19 Pandemic

COVID-19 has had a tremendous impact around the world reaching at least 124 countries (Emanuel et al., 2020, p. 2049). From the beginning, COVID has overwhelmed the health care infrastructure placing "extraordinary and sustained demands on public health and health systems and on providers of essential community services" (Emanuel et al., 2020, p. 2049). A number estimate of various resources was conducted by the New England Journal of Medicine that showed the health needs of Americans going far beyond the capacity of United States hospitals.

> According to the American Hospital Association, there were 5198 community hospitals and 209 federal hospitals in the United States in 2018. In the community hospitals, there were 792,417 beds, with 3532 emergency departments and 96,500 ICU beds, of which 23,000 were neonatal and 5100 pediatric, leaving just under 68,400 ICU beds of all types for the adult population (Emanuel et al., 2020, p. 2050).

On December 2nd of 2020, there was a total of 102,148 individuals currently hospitalized for COVID (The COVID Tracking Project, 2020). This number exceeds the number of ICU beds for all ages of patients and since the epidemic curve has far from flattened in the United States supply continues to be low.

Ventilators have also been a topic of discussion when it comes to low supply. “There are approximately 62,000 full-featured ventilators (the type needed to adequately treat the sever complications of COVID-19) available in the United States” (Emanual et al., 2020, p. 2050). However, while the supply of ventilators remains low another complication arises when the supply of trained respiratory therapists is also low. The availability of the medical workforce, such as doctors, nurses, respiratory therapists, and technicians is continuing to change due to illness or quarantine. Without significant numbers of individuals in the health care field, it will become increasingly more difficult to contain and treat the virus.

Real Life Example: H1N1 Pandemic

Another important pandemic that hit the United States was the H1N1 pandemic in 2009-2010. This virus hit peak surges throughout its outbreak and raised numerous concerns about supply just as COVID-19 has.

> The pandemic exposed strengths of the newly implemented IHR as well as a number of deficiencies and defects, including vulnerabilities in global, national, and local public

> health capacities; limitations of scientific knowledge; difficulties in decision making under conditions of uncertainty; and complexities in international cooperation (Fineberg, 2014, p. 1335).

However, the World Health Organization (WHO) had helped to coordinate responses to the pandemic before it had even started. The pre pandemic planning efforts by WHO and the United States, the Federal Government purchased "50 million treatment courses of antiviral drugs and 23 million antiviral regimens" (Center for Disease Control, 2010, para. 14). The Center for Disease Control also began releasing their Strategic National Stockpile which included "11 million regimens of antiviral drugs, personal protective equipment including over 39 million respiratory protection devices, gowns, gloves and face shields" (Center for Disease Control, 2010, para. 13). The H1N1 crisis was one of the first tests of national and world-wide planning for situations like the pandemic that resulted. It showed that with adequate planning and preparation for the shortage of resources and personnel that resulted from the H1N1 efforts were successful when addressing emerging infectious diseases.

Ethics Behind Allocation

Often working in healthcare comes with numerous ethical and legal issues that are difficult to make. "Clinical decision-making during public health emergencies should be guided by ethically robust policies and procedures" (Kuschner et al., 2007, p. 18). These emergencies result in dilemmas that often require thoughtful and educated decisions that cannot be taken lightly because they will affect the lives of numerous individuals. Along with that, "physicians' primary ethical obligation is to promote the well-being of their patients" (American Medical Association, n.d.). With that in mind they play a vital role in helping develop allocation policies

that will benefit their patients. Often values that are taken into consideration when developing policies and decisions are:

- Duty of clinicians to provide care during public health emergencies;
- Equitable access to care;
- Preservation of individual patient liberty unless restrictions are necessary to protect public health;
- Stewardship and allocation of limited resources in a manner that maximizes benefits (Kuschner et al., 2007, p. 18)

These values align with those that are listed in the American Medical Association's Code of Medical Ethics Opinion on allocating limited health care resources. However, the main goal during public health emergencies is maximizing survivability in the population (Kuschner et al., 2007).

Variety of Healthcare Models

Healthcare has a number of models that influence how it operates. These models should be taken into account when regarding a pandemic to see what model best fits the plan for resource allocation.

The Hippocratic Model

It is known that doctors swear under the Hippocratic Oath before practicing medicine and under this model "the health of the patient is the physician's first consideration" (Kluge et al., 2007, p. 6). This means that the extent of medical treatment revolves around that of the physician-patient relationship. In this model, "when resources are limited and allocation decisions arise, the physician cannot approach the problem by balancing the patient's rights against the interests of other members of the society" (Kluge et al., 2007, p. 7). The Hippocratic

model disregards other parties other than the patient that is being treated right here and now. “The resolution to resource scarcity will ultimately have to occur not in terms of an ethics of allocation but instead in terms of professional power and persuasiveness” (Kluge et al., 2007, p. 9).

The Social Service Model

On the other hand, the social service model looks to advance the well-being of all members of society. “The importance that it attaches to the physician-patient encounter will be the derivative of the profession’s mandate to advance the welfare of members of society in general” (Kluge et al., 2007, p. 9). This model is why physicians are afforded certain privileges and rights that other members of society cannot legally perform such as prescribing drugs and performing surgeries. The social service model finds solutions that proceed based on “the principle that something is right if and only if it produces (or is likely to produce) the greatest good for the greatest number” (Kluge et al., 2007, p. 11). In other words, it follows a very utilitarian approach of ethics when it comes to the allocation of scarce resources.

The Business Model

The business model takes a different approach to medicine rather than looking it as a good/service but as a profit-making enterprise. “It portrays physicians as entrepreneurs who have undergone the socially validated regimen of education and training that is necessary before receiving a license to practice and who now have a sophisticated socially approved service for sale” (Kluge et al., 2007, p. 12). In this concept, the patient is no longer a patient but rather a customer under contractual terms (Kluge et al., 2007). This becomes a problem for resource allocation because the economics behind the ‘business’ become the primary determinants rather than the rights of the patient.

Recommended Solutions

There are a variety of solutions that should be taken into consideration when deciding the best plan for allocation during public health emergencies and pandemics.

Code of Medical Ethics Opinion

The American Medical Association states specifically the physician's ethical obligations and policies for allocating limited health care resources. They have four criteria that they follow to help allocate resources fairly:

- Base allocation policies on criteria relating to medical need, including urgency of need, likelihood and anticipated duration of benefit, and change in quality of life;
- Give first priority to those patients for whom treatment will avoid premature death or extremely poor outcomes, then to patients who will experience the greatest change in quality of life;
- Use an objective, flexible, transparent mechanism to determine which patients will receive the resource(s) when there are not substantial differences among patients who need access to the scare resource(s);
- Explain the applicable allocation policies or procedures to patients who are denied access to the resources and to the public (American Medical Association, n.d., para. 3).

Recommendation #1

During a pandemic, an ethical value that should be relied on is maximizing benefits. "Priority for limited resources should aim both at saving the most lives and at maximizing improvements in individuals' post-treatment length of life" (Emanuel et al., 2020, p. 2052). This means that the highest priority goes to those patients that were described above. It is sometimes difficult to balance between which is the better option; saving more lives are increasing years of

survival. However, when it comes to COVID-19, “limited time and information make it justifiable to give priority to maximizing the number of patients that survive treatment and to regard maximizing improvements in length of life as a subordinate aim” (Emanuel et al., 2020, p. 2052).

Recommendation #2

The second recommendation is that “critical interventions such as testing, PPE, ICU beds, ventilators, therapeutics, and vaccines should go first to front-line health care workers and others who keep critical infrastructure operating: (Emanuel et al., 2020, p. 2053). It is not that these individual’s lives are given more emphasis or value during these times but that they are “essential to pandemic response” (Emanuel et al., 2020, p. 2053). However, if the supply of health care workers and other front-line workers starts to dwindle the effects of the pandemic will be even greater with no one left to treat patients.

Recommendation #3

The third idea that should be followed is equality over first-come, first-served allocation. “The coronavirus treatments address urgent need, meaning that a first-come, first-served approach would unfairly benefit patients living nearer to health facilities” (Emanuel et al., 2020, p. 2053). This begins to deeper intensify the racial and ethnic disparities that are already evident throughout the health care system. It also would mean that “individuals who get sicker later on, perhaps because of their strict adherence to recommended public health measures, are excluded from treatment” (Emanuel et al., 2020, p. 2053). Equality is the best option because it will help to prevent the deepening of disparities and will allow adequate treatment for the patient’s that need it.

Recommendation #4

Another recommendation to consider is the allocation of resources between COVID patients and patients with other medical diagnoses. In fact, there should be “no difference in allocating scarce resources between patients with COVID-19 and those with other medical conditions” (Emanuel et al., 2020, p. 2054). In times like these, allocation is necessary to help treat the lives affected by those of the pandemic, but it is also necessary to remember there are other individuals affected everyday by other diseases. “Fair allocation of resources that prioritizes the value of maximizing benefits applies across all patients who need resources” (Emanuel et al., 2020, p. 2054).

Conclusion

Overall, it is evident that COVID-19 has impacted individuals and health care all across the world. It is important for the nature of the problem and the ethics behind it to be understood before making decisions that allocate resources during these trying times. Not only should public health measures such as social distancing, wearing a mask, and quarantining be followed; but there should be policies and procedures put into place that help make decisions easier for health care workers during the pandemic. Recommendations like the ones above will help to eliminate the stress and burden put on healthcare workers while achieving the goal of maximizing the benefits and saving lives.

Resources

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