



WASTES IN HEALTH CARE: IS IT A BIG PROBLEM?

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Abstract

The Health sector faces an increasing wastes problem worldwide; unfortunately the problem has attracted much attention only in the United States of America and lesser to other countries. A significant amount of resources (such as financial, human) have been lost due to this problem. The aims of the study are to determine the causes of the hospital waste, evaluate its consequences, present measures to reduce them also arise awareness and attention to this issues. In this way, it can be ensured that the waste of health care services comes to the agenda in other countries, including Turkey.

INTRODUCTION

Throughout the world, health care costs are getting higher (Bentley et al., 2008:629). There is great and immediate chance to reduce healthcare costs through the elimination of waste. Currently, studies shows that wastes account for one-third of healthcare expenditures (Berwick and

Hackbarth, 2012:1513-15). Spending on services that lack evidence of producing better health outcomes compared to less-expensive alternatives; inefficiencies in the provision of health care goods and services; and costs incurred while treating avoidable medical injuries, such as preventable infections in hospitals, fraud and abuse consist of wastes (Lallemand, 2012). The aims of the study are to determine causes of the hospital waste, evaluate its consequences, present measures to reduce them also arise awareness and attention to this issues. According to the aim, first part of study we discuss and define wastes in healthcare systems, the second part focuses on causes and consequences of waste in hospitals, third part highlight the issues to put into consideration and the last part focuses on the measures applied to combat wastes.

WASTES IN THE HEALTHCARE SYSTEM

Waste in healthcare system can be defined as healthcare services that do not add value or advance patient outcomes. Ethically, health professionals are obligated to deliver the best care possible to patients along with their needy families. Simultaneously, they must be good stewards of limited resources for future health needs (Martin, 2014). Wastes comprises of a range of definitions for hospitals and health systems, including wasted time, finances, steps and human potential, to name a few. In the process of performing their activities healthcare workers deal with many issues in hospitals and healthcare institutions. Below, the eight types of waste in healthcare are defined the Beckers Hospital Review (Gamble, 2013);

Defects; these include all time spent doing something incorrectly and inspecting or fixing errors. One example of defect waste is the time spent looking for an item missing from a surgical case cart.

Over-production waste; includes doing more than what is needed by the patient or doing it sooner than needed. A broad example of this is the performance of unnecessary diagnostic procedures.

Human potential wastes; waste is caused when employees are not engaged, heard or supported. Employees may feel burnt out and cease sharing ideas for improvement.

Transportation wastes; unnecessarily moving patients, specimens or materials throughout a system are wasteful. This is evident when the hospital has a poor layout, for example when a catheter laboratory is located a long distance from the emergency department.

Waiting wastes; waiting for the next event to occur or the next work activity can eat up time and resources. Making patients wait

for appointments is a sign of waste, as it is to making employees wait when their workloads are not at level to each other.

Inventory wastes; hospitals create waste when they incur excess inventory costs, storage and movement costs, spoilage and waste. Letting supplies expire and then disposing of them, create wastes.

Motion wastes; when employees move from room to room, floor to floor and building to building more than necessary; it accounts to waste. For instance, laboratory employees may walk miles per day due to a poor hospital layout.

Over-processing wastes; consider a work is performed and is valued to be of below quality when it's aligned with patient needs. One example is putting useless extra data stamps onto forms.

The following list in Table 1 highlights some of the issues that healthcare workers face every day (MDA Solutions, 2017).

Table 1. Wastes in terms of issues that healthcare workers face daily

Wastes	Examples from Manufacturing	Examples from Experience in Healthcare
Overproduction	Producing more products than are required to meet current customer demand.	The worst waste in healthcare in our minds. Inpatient remains longer in an acute medical bed than is necessary. Few weekend discharges often add 3 additional days to length of stay. Lack of discharge planning catches nurses off guard when physician discharges patient. Weekly instead of daily rounds by physician builds up patient discharge queue.
Waiting	When goods are not moving through the plant often because of batch-and-queue practices between machine centers. Looking for tools.	Emergency patient waiting for initial treatment. Patient waiting for tests and then results from tests. Inpatient waiting to be discharged. Inpatient waiting on Emergency stretcher for bed on ward. Staff waiting for callback by consulting physician.
Transportation	Excessive product travel and handling.	Perhaps the most affected departments are lab and pharmacy that require timely deliveries to meet patient care requirements.
Inappropriate Processing	Over-designed product ultimately diminishing its value in the eyes of the customer.	Relocating emergency patient to another bed stall because of monitoring requirements necessitating a second or third move of other patients. Retesting due to misplaced results. Use of expensive drugs or consumables when cheaper alternatives are available. Misallocation of valuable and scarce resources, i.e. not spending the money where it's needed.

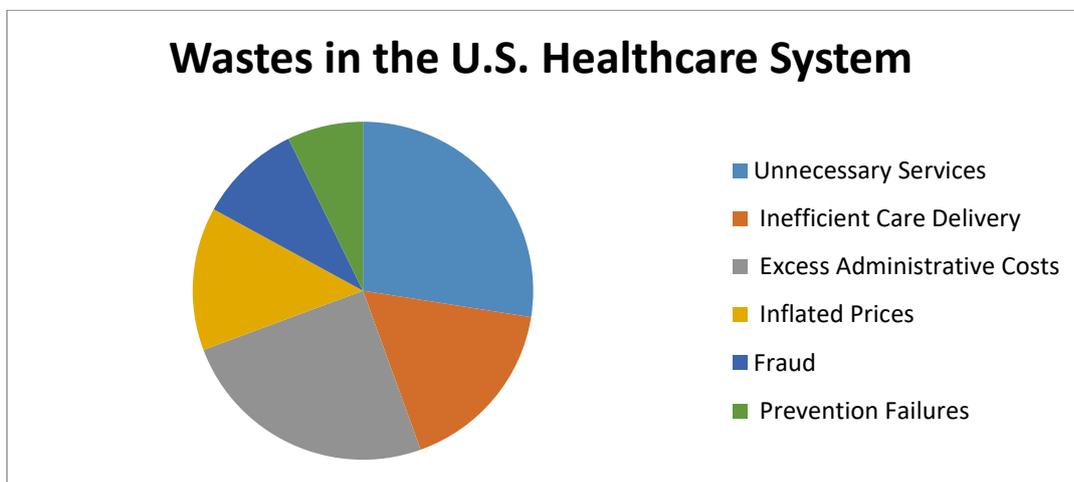
Unnecessary Inventory	Excessive Work in Progress (WIP) and Finished Goods inventories.	Batching of blood draws as well as lab tests. Oversupply of point-of-use stock leads to great excesses throughout the system.
Unnecessary/ Excess Motion	Poor ergonomics at the workstation. Searching for tools, help, variation in process steps, sharing of tools and equipment, etc.	Looking for meds, consumables, charts, equipment, staff and patients. Variation to standard methods and procedures. Sharing of equipment. Inconvenient locations for point-of-use storage.
Defects	Product that needs to be scrapped, reworked, or reconditioned.	Medication errors. Incorrect patient information. Wrong attending physician entered into emergency patient computer record upon discharge. Poor clinical outcome.

Causes and Consequences of Waste in Hospitals: Case of USA

Various authors brainstorm why wastes is still a problem in USA, with one stating *“other countries are become highly advanced in research, procedures and healthcare technology, we still has no answer for the simple inefficiencies, that seem to hold our country’s system far behind other developed nations unlike the USA. So where is all of this waste going?”*

(Palmer, 2017). It was further pointed out that wasteful practices in healthcare spending, incur approximately 30% of healthcare costs. The causes of wastes in hospital range from inefficient administrative practices to blatant abuse, and furthermore. The amount of wasted dollars is high as \$750 billion. Wastes in the USA Health-Care System are shown Figure 1 (Fung, 2012) and explained below.

Figure 1. Wastes in the USA Health-Care System



Administrative Waste

In medical facilities, duties should be streamlined in the manner in which administrative duties are provided to help save cost in healthcare spending. Unnecessary complexity and sheer fragmentation of health operations accounts for a loss of amounts of money. For instance, USA wastes about \$190 billion

dollars every year from this category. Additionally, the USA spends twice the amount other industrial countries with single-payer system spend on healthcare administrative (Palmer, 2017).

Unnecessary Services and Procedures

Every year under the pretense of necessity a lot of money is wasted on services

ordered. The services and procedures are listed and explained below.

- **Unnecessary tests or test overload**

Occurs when loads of procedures are ordered by a doctor, only to show due diligence in diagnosing the patient. USA alone loses over \$200 billion dollars in this category leading to unnecessary charges and cost to be incurred by the patient. This results to more procedures, medication, hospital and doctor visits than it is required to do (Kavilanz, 2009).

- **Over treatment**

This involves use of services or procedures that have very little, if any, benefit over the generic, less costly alternative procedure. Various studies have pointed out that different treatment options may provide equal results, but one may cost more than the other. Often, healthcare money is on the more expensive option, even when there is no satisfying explanation for this. The Government’s approved generic drugs such as the USA’s Food and Drug Authority (FDA) offer the same benefit as the name brand at a mere fraction of the price. Nevertheless, it is a usual tendency by doctors to prescribe name-brand drug without considering their higher cost (Palmer, 2017).

- **Imaging services**

During diagnosis and follow-up of patients’ recovery, patient imagery is compulsory. Sadly, a large number of these procedures are done on low-risk patients; ones with less costly diagnostics. The Patients’ exposure to a high level of radiation from many imaging services, eventually results to cancer. The rise in cancer due to this factor has been projected by some studies. Considering that a single MRI ranges from

a few hundred to a few thousand dollars, and large sums of patients money are tied up in this way too i.e an X-ray can cost \$300 on its own (Palmer, 2017; Kavilanz, 2009).

- **Inflated Prices**

Businesses have to make money to continue to operate; thus, medical bills should reflect the actual cost of services plus a sensible fine profit. Contributing factors include lack of cost transparency, a scarcity of competitive options for patients and strict rules regarding facilities and providers that are covered by health insurance companies (Fung, 2012). Inflated prices account for over \$105 billion in wastes (Quinn, 2012). Some claim that higher healthcare prices, are with justifications, but some inflation have no explanations. For instance, in USA, A study found that hospitals charge \$50 upwards for each pair of gloves used by a doctor. Of course, in a single operation using many gloves is inevitable and the likely cost could be several hundred dollars. If patients would be given a choice and understand the cost, they would opt out of scenarios like this (Palmer, 2017).

- **Poor Prevention Tactics**

For centuries it’s known that, prevention is better than cure. For instance, every year \$55 billion is wasted in this category due to poor prevention tactics. When it comes to preventative measures, putting onwards reasonable effort ahead of time always wins in the end (Quinn, 2012). This type of waste can be due to a doctor playing down patient’s risk factor, proper prevention tactics can involve making efforts to properly prevent illness with diet (Palmer, 2017). Figure 2 is shown annual USA health care waste by category (Lallemand, 2012).

Figure 2. Estimates of Annual USA Health Care Waste by Category, 2011

	\$ in Billions					
	Annual Cost to Medicare and Medicaid in 2011			Annual Cost to US Health Care System in 2011		
	Low	Midpoint	High	Low	Midpoint	High
Failures of care delivery	26	36	45	102	128	154
Failures of care coordination	21	30	39	25	35	45
Administrative complexity	16	36	56	107	248	389
Pricing failures	36	56	77	84	131	178
Fraud and abuse	30	64	98	82	177	272

Abuse

Abuse can be inform of scams, fake medical bills, billing for procedures that were not performed or appointments that were not made, double billing. When put up together, \$75 billion dollar goes into waste. The money spent to follow up, inspect, and prosecute those who commit such acts, goes into waste. Ten percent of the total cost of Medicare is reportedly from abuse. Despite the efforts made to decrease the abuse that insurance companies, Medicaid and Medicare have to endure, new ways to scam the system invented frequently. It would be encouraging, if this money is saved up and directed toward something positive rather than waste it (Palmer, 2017).

Inefficient Care Execution

Running the business at peak efficiently means more profit. Healthcare business differs from the rest business. When healthcare is inefficiently run, much more money is spent on operations. Thus, the cost of inefficiency falls directly on the patient or insurance company. In one scenario, a study cited that 27 percent of Medicare patients experienced some type of life and non-life threatening injuries due to inefficient care execution during a hospital stay. The costs may add up to a massive \$130 billion dollars in waste. Furthermore, these situations may result in hospital readmissions of up to a fifth of the discharged patients (Kavilanz, 2009; Classen et al., 2001: 582-83).

ISSUES FOR CONSIDERATION AND THEIR IMPACTS

Wastes impends the ability to pay for new treatments and technologies due to non-compulsory expenditures. While maintaining national fiscal health, the existing and future health care spending obligations prevent the federal government from achieving certain health care system goals such as universal insurance coverage (Orszag, 2008). When the consideration of the root causes of each key finding was

done, five systemic issues requiring further consideration were yielded:

- Lack of compliance with clinical guidelines, raising issues of potential shortcomings in physician decision making;
- Variation in the intensity of clinical care, suggesting a lack of evidence based decisions;
- Limited adoption of information technology in areas such as decision support and care coordination;
- Underuse of cost effective diagnostic tests; and
- Failure of the primary care system to meet access need (Delaune and Everett, 2008).

MEASURES TO REDUCE HOSPITALS WASTE

In order to reduce hospitals waste; policy alternatives, strategies and other methods are being implemented. Developing a series of policy alternatives decreases waste where feasible.

- Investigating barriers to physician guideline compliance, understanding how physicians make decisions and considering what can be done to decrease variation in evidence-based practice;
- Examining the causes of emergency department’s medical resources overuse for non-urgent conditions and the adequacy of the primary care system to offer alternatives;
- Researching ways to improve current care practices through innovation, such as limiting antibiotic use in acute respiratory infections through point of service testing;
- Considering ways to advance the adoption of information technology to decrease medical errors, including decision support systems and e-prescribing in the outpatient setting;

- Investigating suspected and not well documented examples of waste, including the overuse of advanced imaging technologies and chemotherapy;
- Examining the causes of geographic variation in clinical care; and
- Building a countrywide coalition to identify waste and illuminating best practices to eliminate it (Delaune and Everett, 2008).

The two primary ways to reduce costs and improve quality suggested to USA were:

- Comprehensive demand-side strategy and reforms. Here consumers are given incentives and information to be better purchasers of health care. *How*; Accelerate the growth of consumer-directed health plans paired with other reforms to encourage consumers to be more sensitive to prices. *What should be included?* These reforms should include increased regulations to promote price and quality transparency and payer innovations to introduce insurance plans with reference prices. *Wastes saved*; with this strategy, an incremental \$110 billion in savings is projected further than the \$140 billion on the path of being achieved, representing an additional 3% of health care spending. *Point to note*; however, this approach would not be totally positive: Evidence suggests that some portion of the reduction in costs would result from the patients not seeking necessary care due to increased sensitivity to prices. *Anticipated solutions*; Innovation in insurance products, such as value-based-insurance designs that reduce cost sharing for highly effective clinical services, can help address these concerns (Sahni et al., 2015).

Other ways to reduce costs and improve quality suggested to USA were:-

- Aggressive supply-side strategy and reforms. It changes the way

providers are paid so their profit margins are tightly linked to outcomes and efficiency rather than the volume of services delivered. Thus, specifically, policymakers could adopt the following reforms that have been proven to work. *How?* Accelerate the migration from the fee-for-service payment system to alternative payment methods such as bundled payments or capitated budgets for individuals. *Impacts*; providers will be driven to reorganize their care-delivery models. *Point to note*; this strategy would save a similar amount to the demand-side strategy, and evidence from early implementations suggests it will result in no reductions in quality or the use of “necessary” care (Sahni et al., 2015).

- All together can be pursued, when the choice between demand-side and supply-side reforms is artificial. That would generate an incremental extra \$170 billion in savings to the \$220 billion total. By also pursuing other concrete opportunities like reducing administrative complexity to the levels in other service industries a massive \$130 billion would be yield. Thus, a total of \$440 billion per year equivalent to 14% of total spending on health care could be saved. Over five years of successful achievement, the projected growth in health care spending would be halved, reducing the average annual growth rate from 5.5% to 2.4% (Sahni et al., 2015).
- New ways to reduce cost include healthcare quality process improvement techniques such as Six sigma and Lean management. These methods are effective at dealing with administrative costs; a much greater return can be gained by concentrating on the clinical or

patient care costs. Nevertheless, obstacles never cease to exist especially when financial executives are reluctant to embrace the elimination of patient care costs due to the predominant fee-for-service based systems. The reimbursement changes are taking place since moving towards a managed care platform is a priority addressing wastes associated with current healthcare delivery models is vital (Sahni et al., 2015).

CONCLUSION

Currently, wastes consists of a consistent, continued, substantial increase of Healthcare spending, with this being the case much of the scarce resources get tied up and deliver nothing of concrete to address the patients and health care issues. Wastes in the healthcare system could be inform of defects, over-production, human potential, transportation, waiting,

inventory, motion and over-processing. Generally, wastes if not dealt with tend to have grave consequences not only to the patients' outcomes but also to the Health care system. Over the course of time, firstly in the Industries and now in Healthcare scholars discovered and improved wastes curbing methods for example the use of Lean Management. However, Lean Management does not cover every aspect of wastes in the healthcare system. More innovative ways should be developed since it is more challenging to get a "one fits all" solution to all the consequences resulted by the presence of wastes in Hospitals and health systems. As it has been discussed the problem is evident throughout the world but other than the USA, the subject has generated less attention in other countries. Some few studies have been conducted in Turkey (Simsir et al., 2013; Sayistay Baskanligi, 2005) but they have not addressed this problem to the extent of losses which it contributes to the health sector of the country's health sector.

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