

A Flowchart Based on Business Process Modeling Notation to Understand Queuing Performance on Kidney Transplantation

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Abstract and Objective

Waiting for a new organ or tissue is a growing problem. Campaigns for organ donation have intensified, as well as techniques to increase survival of transplanted individuals. A study of parts of the transplant process may help to understand how to reduce the waiting time for a new organ or tissue. We used our experience of building a flowchart based on BPMN that identifies risks of staying in the queue to explore the case of renal transplantation. With the flow chart and identifying risk points, adjustments may be suggested to decrease the possibility of failures, thereby reducing the waiting time for a new organ.

Keywords: organ transplantation, process assessment, kidney transplantation

Introduction

Each year more people experience kidney failure resulting in the need for a transplant [1,2]. To receive a new organ or tissue, there is a complex process to be observed in each country ranging from the diagnosis of brain death until the patient is discharged with subsequent monitoring by a team of post-transplant health professionals [3]. There is also the ethical position concerning a patient on the waiting list and an indication of urgency to receive a new organ or tissue [4]. Through reading official documents and interviews with professionals in the field of transplantation, the authors represented the workflow of kidney transplantation in Brazil with points of failure risk, allowing health policy makers, especially for transplants, to improve the workflow and reduce the waiting time for a new kidney.

Methods

This was an exploratory and qualitative study with document analysis [5]. Bizagi was used for the Business Process Modeling using Business Process Modeling Notation (BPMN) to facilitate understanding of the manager. Each step was identified as being predominantly performed by man or machine. Only the workflow for transplant in Brazil was diagrammed to explore the complete workflow for a new kidney.

Results

A flowchart was made exploring stages performed by machines and human. The difference is critical since machine

failures require reprogramming, while human failures need training. In each stage flaws were identified that could hold the line or bring patients to the front of the queue due to last minute suspension of a patient.

Conclusion

With the designed flowchart it is possible to have a better understanding of the favorable or unfavorable points to walk the queue. Health Policy Makers can also make the same effort with countries where the waiting time for a new kidney is smaller than in Brazil, leading health managers to actions that can reduce the waiting time from diagnosis of renal failure to receipt of a new kidney, seeking a better quality of life for patients and their families.

Reference

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