

Smartening of organ donation process

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Background: Organ donation from a brain-dead person is done through a three-step process that begins with the identification of a suspected brain-dead case, continues with the mission of coordinator, and ends with the allocation of an organ. Postponed identification processes and poor management led to organ and donor loss. In which, during the last 14 months in a single center procurement unit, out of 428 potential donors, 174 cases were missed. In case of developing a smart process, all cofounding factors, would be considered beyond the human faults. We introduce a platform to overcome all concerns of donation process.

Methods: We created an application which nurses can use for input GCS of patients instead of writing on sheets. It alerts if their GCS is three and recommends further considerations. Coordinator will be notified if a clinical examination indicated brain death. Application guides coordinator step by step. Allocation system works as a block chain system which each receiver considered as a new block and more stakes get the organ. Also, it includes a social media to share experiences. We employed this method in Imam Hossein Hospital for 3 months in 2022 and compared donation rates with the same period in 2021.

Results: There was an increase of 5.41 folds in potential donors, 1.5 folds in actual donors, and 1.5 folds in procured organs (four kidneys, three livers and one heart).

Conclusions: Donors detection will improve by using this application and saves time and human sources. Also, reduces hospital staffs' mismanagement which lead to improvement in the process. Guidance of this application helps coordinators with better choices in the face of challenges and it can be used as a learning courses platform. Blockchain system ensures transparency and security in allocating resources, and social media improves colleagues' communication.

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