

The Cost Efficiency of an Online Echocardiography Booking System

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Dear Editor,

While literature suggests the application of Information Technology improves the quality of healthcare, evidence regarding its impact on cost is discordant^{1,2} and scarce.³ Echocardiography is a commonly utilised investigation in the workup of medical and surgical inpatients.⁴ In University Hospital Limerick, a 562 bedded tertiary teaching hospital, we complete approximately 7,500 echocardiographs per year. The process of booking an echocardiograph traditionally consists of attaching a patient addressograph label to a paper form, completing the form, and handing it in to the department of cardiology reception desk. In 2018 an electronic echo booking system was introduced allowing clinicians book echos by filling in a web form on a hospital PC from any ward in the hospital. We report the estimated financial savings attributable to the implementation of an online booking system.

Four interns of the 2017 cohort were observed and timed booking echocardiographs with the traditional paper based system, and in 2018, another 4 interns using the online booking system. Interns were surveyed on their overtime working patterns.

Interns were paid a basic rate of €17.75 per hour and an overtime rate of €26.23 per hour. Surveying 10 interns revealed that over a 3 month period 100% of interns claimed overtime pay every week excluding annual leave weeks (100% response rate). The Department of Cardiology at University Hospital Limerick filmed 7,677 echocardiographs in 2018.

Interns on average took 13 minutes and 30 seconds (810 seconds) to book an echocardiograph using the traditional paper based system in 2017 (standard deviation 67 seconds). Paying interns to book 7,677 echocardiographs at €26.23/hour incurred an estimated cost of €45,308 in 2017.

Interns on average took 3 minutes and 20 seconds (200 seconds) to book an echocardiogram using the online booking system in 2018 (standard deviation 62 seconds). Paying interns to book 7,677 echocardiographs at €26.23/hour would incur an estimated cost of €11,187 in 2018.

Introduction of an online echocardiography booking system will save our hospital an estimated €34,121 per annum, supporting the hypothesis that the implementation of an online booking system may incur significant indirect financial savings for a hospital in intern salary hours paid. Further prospective observational studies on the implementation of healthcare information technology may identify direct reductions in salaries paid, as well as improvement in patient safety and satisfaction.

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