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Impact of serious games based training in reduction of nosocomial infections

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Hospital Acquired Infections (HAIs) or nosocomial infections are complex to treat and are a growing global burden. HAIs affect about one in 25 patients in the US and situation is worse in resource-poor nations. A prevalence survey conducted under WHO in 55 hospitals of 14 countries showed that ~8.7% of in-patients had HAIs. At any time, over 1.4 million people worldwide suffer from infectious complications acquired in hospital. HAIs contribute to increased economic burden, negatively affecting quality of life and deaths. 1, 2 As per the existing methodologies direct observation is the gold standard to monitor compliance and to prevent or reduce HAIs. Frequent surveys, interviews and inspections are the other commonest methods implemented as prevention of HAIs. Indirect monitoring involves automated monitoring systems (video monitoring, real time location systems) monitoring hand hygiene product consumption). Hospitals with sophisticated information systems are in a position to streamline surveillance process through computer-based algorithms that identifies patients at highest risk of HAI.3 4 computerized surveillance helps in better implementation of preventive strategies, but lower infection rates have not been proven conclusively. Conventional training methodologies have not proved to be significantly impactful in knowledge retention and message recall. A newer approach called Gamification is a positive and effective method to change behaviour. It can engage, motivate and influence people. It is a concept that has unknowingly been applied for years though the term was widely used only after 2010. A 'serious game' is defined as an 'interactive computer application, with or without significant hardware component, that has a challenging goal, is fun to play and engaging, incorporates some scoring mechanism, and supplies the user with skills, knowledge or attitudes useful in reality.5 A hand hygiene improvement campaign in Edinburgh Royal Infirmary (Scotland, UK) using the SureWash gesture recognition system (SureWash, IRL) which concluded that the senior staff noted a change in hand hygiene culture following the campaign and the good-natured competition between staff to demonstrate hand hygiene competence using the SureWash serious game. Another study conducted in Portugal wherein gamification was selected as the solution (Osyrish) to the compliance problem to engage and motivate people to achieve specific goals.An innovative indoor system, based on Beacons (iBeacon™), was used to collect data on nurses which concluded that it was opportunity to improve the performance by nurses.6 Mediknit (A HealthConnect Digital Inititative) has developed a serious game and micro-learning training methodology for coaching healthcare practitioners on Hand Hygeine, Immunisation Safety, Injection Safety and other aspects of infection prevention and control. These modules are first of its kind in the world for mixed pedagogy, knowledge mapping techniques and are implemented as a proof of concept at the Singapore General Hospital. Initial survey showed that >95% of nurses felt this to be significantly better than conventional classroom based trainings and overall ~3-10% reduction HAIs was reported. Study is still ongoing. Whilst there is growing interest in using serious games in health as valuable adjunct to conventional education, training and behaviour change interventions, due to the immaturity of the field, implementing this method still remains as a challenge and methodological aspects can generally be much improved to see a positive response in the upcoming years.

Biography

Bhaskar Rajakumar key responsibility includes application of his medical expertise to design structured online medical education programs. He functions as the 'Chief Executive Officer' identifying the medical education market gaps, partner and develop learning pedagogies, and ensure reach and delivery to the learners (healthcare professionals). He also oversees operations. Bhaskar is a physician by academia, completed medicine at Dr B R Ambedkar Medical College, Bangalore, followed by MD in Radiology and MBA in healthcare management. Previously worked as Chief Medical Officer, Consultant Radiologist @ Multiple Hospitals (Between 2007 - 2012). He was heading the PMO, Medical Affairs - Indegene Life Systems (2010 - 2016).

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