Self Triage and Registration Kiosk (STARK)

Team Name - STARK Team

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QI (Pilot)

Aim(s) (Project Background)

❏ Problem identification & Analysis: - Patient Registration and Triaging in the Emergency Department is manpower intensive and time consuming. The process can be limited by nursing manpower that's available each shift, and also part of it is repetitive, tiring and manual

❏ Clearly state the specific aim and scope of your project. - The processes can be automated without compromising patient safety and confidentiality. Also, certain minor conditions (P3) can be self-triaged, and the severity assigned by a series of screening questions, following which the patient can be automatically assigned to the doctor running the minor emergencies queue for that shift.

❏ The minor P3 conditions which a patient can self triage into are

    ❏ Backache
    ❏ Neck Pain
    ❏ Toothache
    ❏ Minor cuts and bruises
    ❏ URTI
    ❏ Upper Limb Injuries
    ❏ Lower Limb Injuries

Changes (Methods)

❏ STARK is placed at the walk-in entrance of our ED. It allows the seated patient to scan their identity card (barcode) and from then the patient follows a series of instructions displayed on the screen, step-by-step, in order to take their blood pressure, oxygen saturation, temperature and pulse rate. Height and weight measurements are also possible should it be desired, but in our case, it was not activated as they are seldom needed in emergency care situations. Some vital signs have preset alarms to alert the triage nurse should they be breached, for instance, hypotension, low oxygen saturation and excessively fast or slow heart rates. If so, the process of self-taking of vital signs are aborted. The patient is then quickly reassessed by a nurse and uptriaged at the discretion of the triage or screening nurse.

❏ Should the patient complete the registration and measurement of vital signs successfully, they can proceed on to self select and answer some questions in the P3 conditions mentioned above. If they show no red flags to fulfil these P3 conditions, they will be issued a number to the P3 area to which they can then directly proceed to the room themselves. However, if they do not fulfil the P3 conditions, they will then proceed to undergo usual triage by the triage nurses

❏ Since March 2023, STARK has been operating daily from 7 am to 9 pm from Mondays to Fridays. Patients who are ambulatory and understand English are directed to this kiosk at the in entrance of the ED by the screener. They will be encouraged to do so as the waiting time for triage by a nurse can be long. Because the configuration of the equipment is geared towards adult sizes, children under the age of 16 may not be suitable for this kiosk. Also, only patients who have been registered before in the database of Singhealth institutions and polyclinics will have data that can be pulled up by the system, all others have to undergo the usual registration process
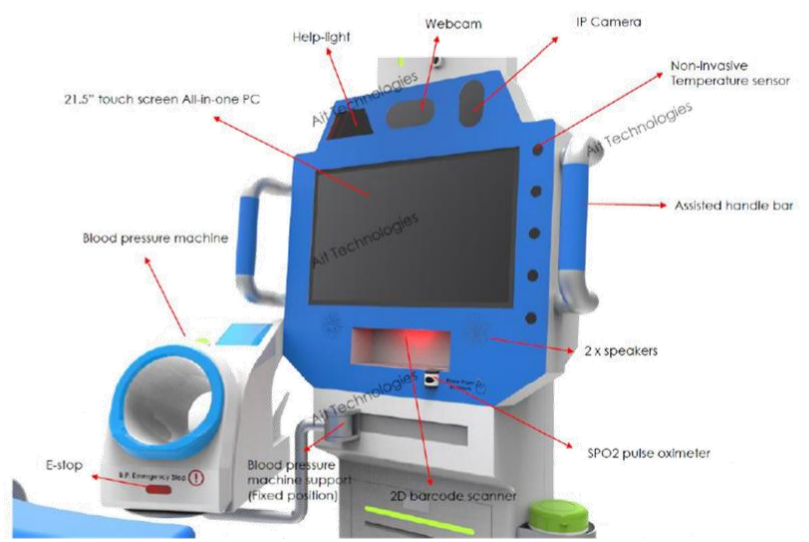
Measures (Results , Outcomes and Figures)

❏ Most of the timings were gathered by time motion observation study, preferably on busy days such as Mondays

❏ We gathered figures from 1st April 2023 to 15th June 2023 (excluding weekends and public holidays) and summarized them as follows
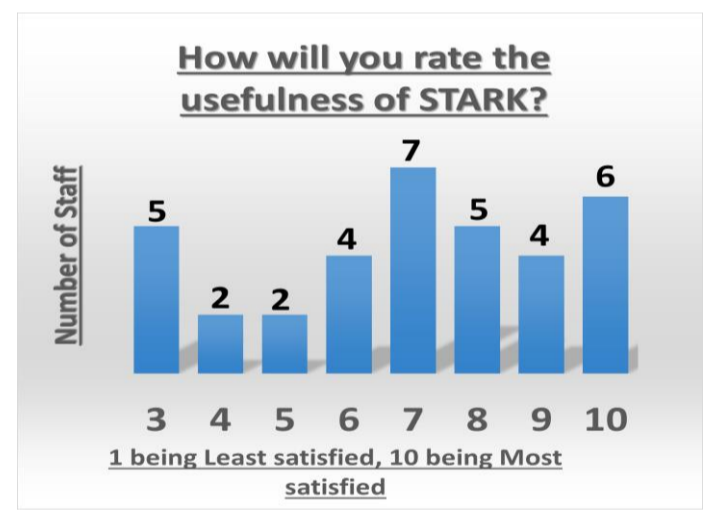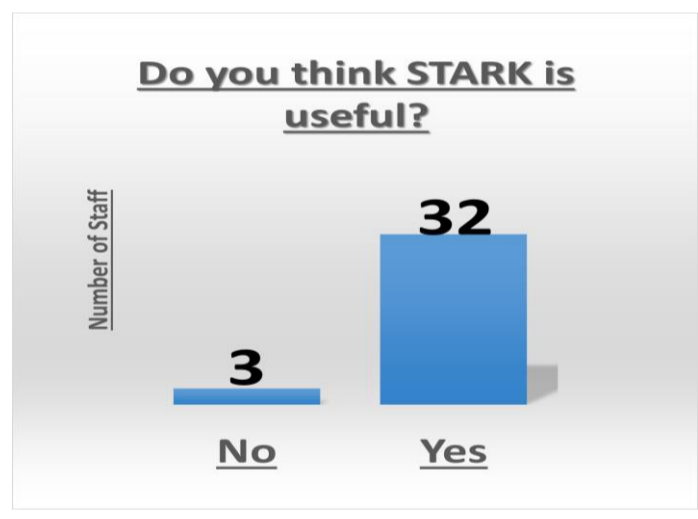
Number of Days	Total Numbers directed to STARK	Successful Registration	Failed Registration (not in database)	Numbers With Successful Vital Signs Taken And Sent To Triage Nurse	Numbers Triaged to P3 Area
52	950	887	63	731	210

❏ We did time motion study for patients during a typical Monday crowd. Periods were measured from issuing of Pre-Q ticket at the ED walk-in entrance, to registration at the kiosk, and to end of triage. On average

• Total time spent for traditional registration, waiting, taking of vital signs & to triage by a nurse = 47 mins

• Time for triage nurse to take history from patient = 5 minutes 7 seconds

With STARK

• Total time spent for using STARK (registration and vital signs) = 3 mins

• Time spent answering P3 questions and issued P3 room number = 2 mins

❏ Describe how results have led to improved value (e.g. clinical outcomes, patient/staff satisfaction, cost savings, time savings or increase in workload to FTE ratio, or in terms of actualized FTE reduction) for patients and staff.

Do you think STARK is useful?

No 3   Yes 32

How will you rate the usefulness of STARK?

3	4	5	6	7	8	9	10
5	2	2	4	7	5	4	6

1 being Least satisfied, 10 being Most satisfied

Conclusion

❏ STARK is a feasible, cost efficient and safe alternative to the usual manual registration and triage process.

❏ Future

• It is hoped that as STARK becomes more widely accepted by the public and its usage becomes more commonplace, it will be a permanent feature of the three Adult Emergency Departments in Singhealth.

• We are also looking to install at least 2 STARKs for each ED, and to run them 16 hours every day. STARK can also be used in various other situaitons in the hospitals such as the specialist outpatient clinics, and preregistration for day surgery, pre-anaesthesia assessment unit, et cetera.

• More technology may be installed whenever new developments arise, such as measurement of respiratory rate, facial or fingerprint recognition and even possibly self-administered billing and payment. More triage protocols are also being developed, and translated into other main languages besides English.

• Ultimately the triage protocols can be placed on a tablet which can be integrated to be part of the STARK process

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