Mobile Surgical Instrument Tracking System (mSITs) – tracking reprocessing flow and tracing utilization history of reprocess and reuse medical devices in United Christian Hospital

Background

• In early 1999, a catheter which was labeled and designed to be single use had been used six times and eventually broken off and lodged inside the heart of a thirty-two year old woman in United State.

• In order to enhance patient safety, Hospital Authority (HA) put forward the policy for monitoring reprocess Single Use Devices (SUD) in 2011 and developed a web-based SUD utilization system for tracking and tracing reprocessed SUD in Dec 2016. In 1st quarter of 2018, three hospitals including Operating Room (OR), Endoscopy Centre (EC) and Central Sterile Supply Department (CSSD) of UCH, PWH and PYNEH were selected to use the system.
Methodology

System development
• Work Group with representatives of seven clusters in HA were established to develop mSITs. The operating objectives of the system were defined and a prototype was developed. System demonstration and introduction were conducted in Nov 2017. Minor revision was made after functional test in Jan 2018.

Implementation
• Data regarding 81 types, 212 coded class I & II SUD from seven specialties were input by phases of EC and OR from March to April 2018 in UCH. System function test and trial run were conducted in UCH CSSD, EC and OR in March and May 2018 respectively. The system was commenced in Jun 2018.

Evaluation
• The mSITs managed 2540 reprocessed SUD from June to November 2018 in UCH. The utilization record of 867 patients can be retrieved within minutes.

Limitation
• The expected and actual reprocessing frequency and SUD unit are difficult to mark on some SUD, e.g., wire and drill bit. Thus reprocessing frequency of these SUD may not be guaranteed.
Recording used SUD in patient record via mSITs

1. unlock iPad password
2. click the app
3. login mSITs
4. scan case/patient info
5. scan SUD barcode
6. check
Retrieve used SUD utilization record from SITs

7. SITs DA Check-in & Washer Batch Assign
CSSD / TSSU receives the used instrument through SITS.

8. SITS PA First Inspection
CSSD / TSSU packing print SUD labels and first inspection

9. SITS SA Sterilizer Batch Assign
CSSD / TSSU sterilizes the SUD with autoclave record in SITS.

10. Sends back the sterilized SUD to store
CSSD / TSSU sends the sterilized SUD back to OR instrument store.

11. Tracing record by SUD utilization
Tracing by SUD ID

12. Tracing record by Patents
Patient Tracing by integration of SITs

Conclusion
- The newly developed mSITs is able to manage reprocessed SUD in HA effectively. It can trace patient and SUD utilization record within few minutes.