

Project Title

Reducing waste by reorganising instrument sets for dental treatment in NHGP

Project Lead(s) and Members

Project Lead(s): Dr Tan Sze Lin, Tan Hue Min

Project Members: Siti Rafeah Binte Selamat, Chiew Guat Kim, Nur Syuhadah Binte Jumaddin, Margaret Lee Suat Choo

Organisation(s) Involved

National Healthcare Group Polyclinics

Healthcare Family Group(s) Involved in this Project

Medical, Ancillary Staff

Applicable Specialty or Discipline

Dentistry

Project Period

Start date: March 2021

Completed date: March 2022

Aims

To reduce manpower time in packing, retrieving, opening and recording of instruments by reorganising the number of dental instrument sets to 5 or less for dental treatment at NHGP Toa Payoh Dental Clinic within 4 months

Background

See poster appended/below

Methods

See poster appended/below

Results

See poster appended/below

Lessons Learnt

Not available

Conclusion

See poster appended/below

Additional Information

Accorded the NHG Quality Day 2022 (Category A: Improving and Sustaining Quality & Safety) Merit Award

Project Category

Care & Process Redesign

Productivity, Time Saving, Operation Management, Inventory Management

Keywords

Packing and Retrieval of Equipment, Stocktaking

Name and Email of Project Contact Person(s)

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Mission Statement

To reduce manpower time in packing, retrieving, opening and recording of instruments by reorganizing the number of dental instrument sets to 5 or less for dental treatment at NHGP Toa Payoh Dental Clinic within 4 months

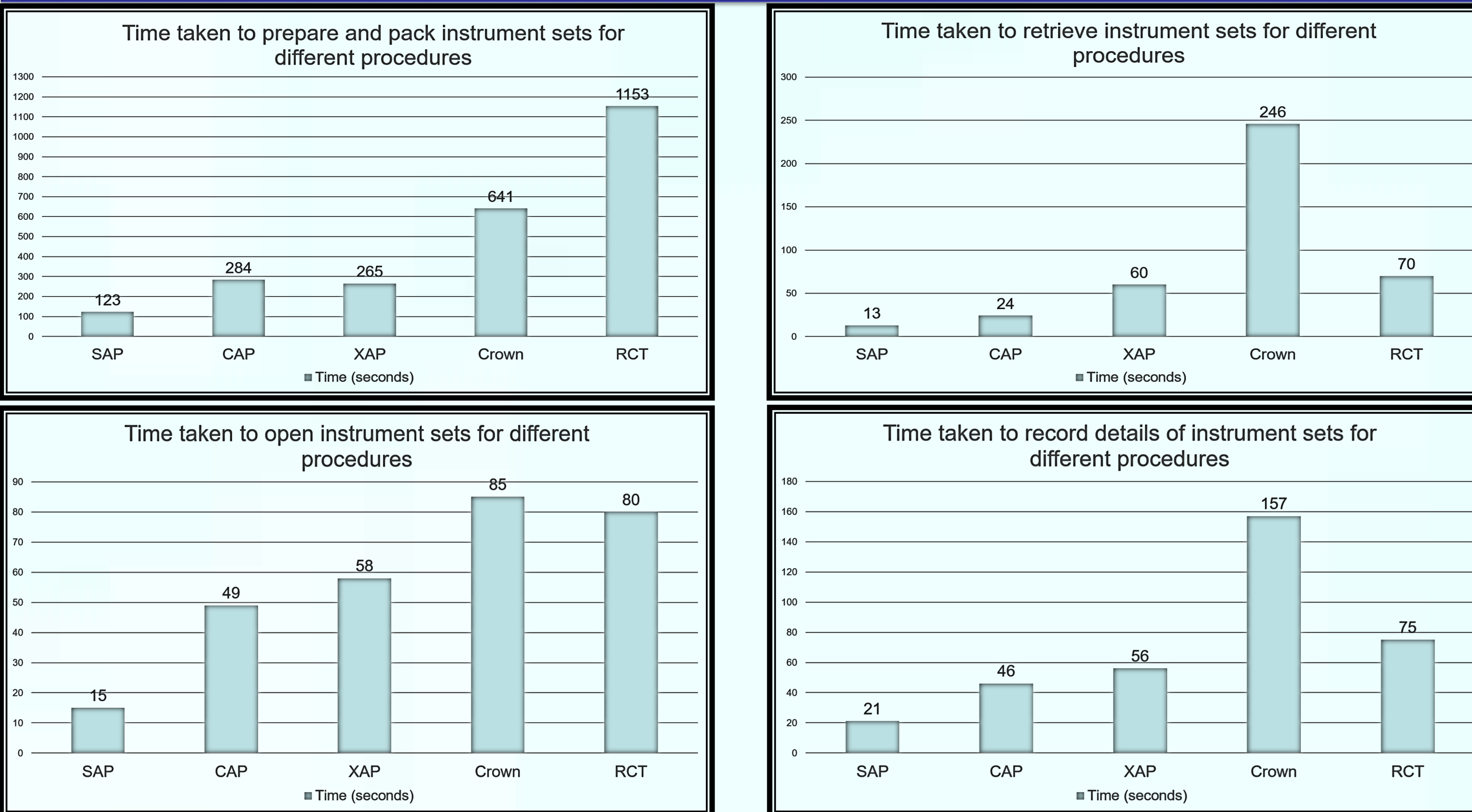
Team Members

	Name	Designation	Department
Team Leaders	Dr Tan Sze Lin	Senior Dental Surgeon	Dental
	Tan Hue Min	Senior Oral Health Therapist	Dental
Team Members	Siti Rafeah Binte Selamat	Senior Dental Assistant	Dental
	Chiew Guat Kim	Senior Dental Assistant	Dental
	Nur Syuhadah Binte Jumaddin	Dental Assistant	Dental
	Lee Suat Choo Margaret	Dental Assistant	Dental

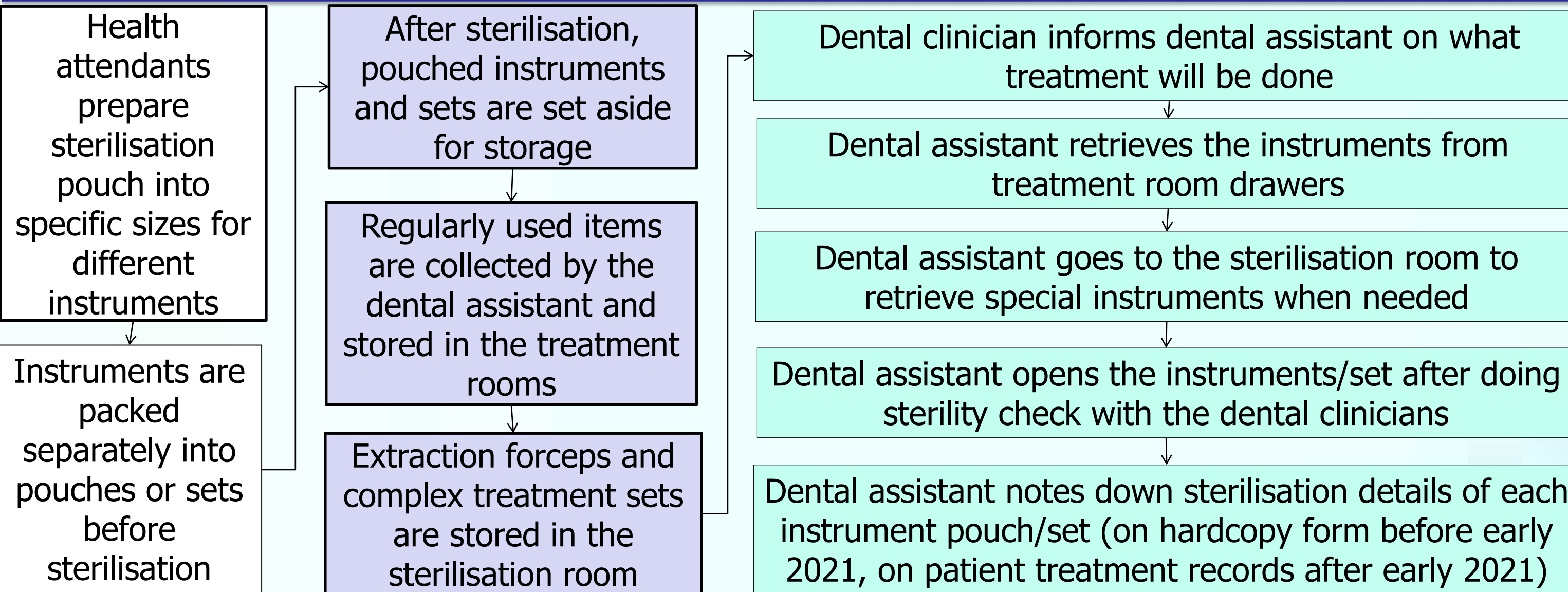
Evidence for a Problem Worth Solving

- Different types of dental treatments require different types of dental instruments. The types of dental treatment provided at the polyclinic include: Scaling and Polishing (SAP), Filling (CAP), Extractions (XAP), Crown treatment, Root Canal Treatment (RCT). Each dental treatment type requires different dental instruments which ranges from 3 pouched items/set to 20 pouched items/sets.
- Majority of the dental instruments are packed separately in pouches for sterilization. So, if the procedure requires a lot of instruments, Health Attendant (HA) in the sterilisation room will have to spend a substantial amount of time preparing the pouches and packing the instruments into pouches.
- For daily accountability of the sets and instruments used during treatment, sterilisation details of the sticky labels on all the sets and instruments used for each patient have to be recorded on an instrument tracking form: Autoclave number, Lot number, Load number, Expiry date, Sets/Packs. The form was designed to have 5 line allocated for each patient (5 items), but some dental procedure may require up to 21 items.
- Commonly used dental instruments are stored in the treatment rooms/cubicles, but due to space limitation, some instruments are stored in the sterilization room. So, if the procedure requires a lot of instruments, dental assistant (DA) will have to spend a substantial amount of time retrieving the instruments, recording the details, in addition to the time needed to open the instruments pouches.

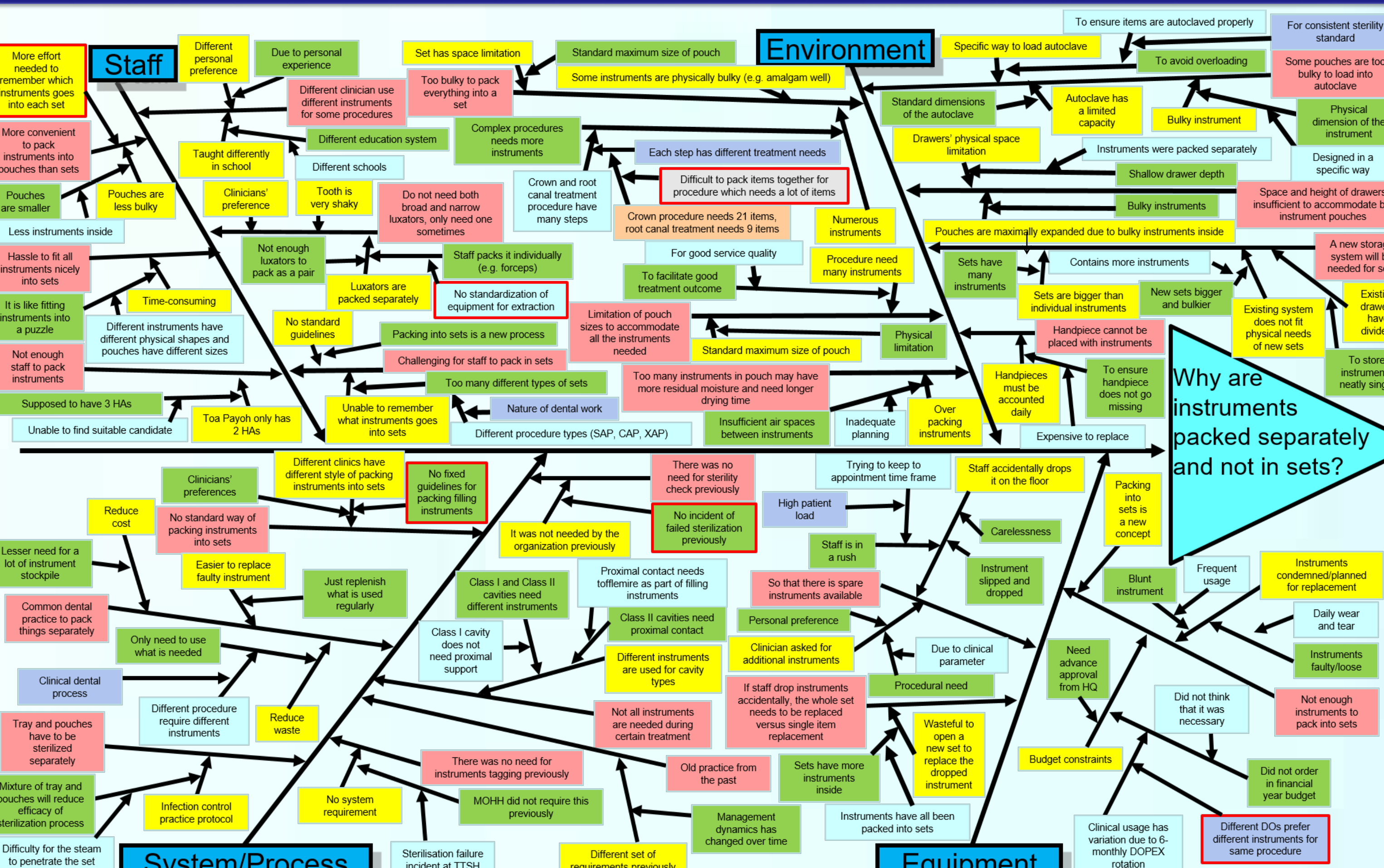
Current Performance of a Process



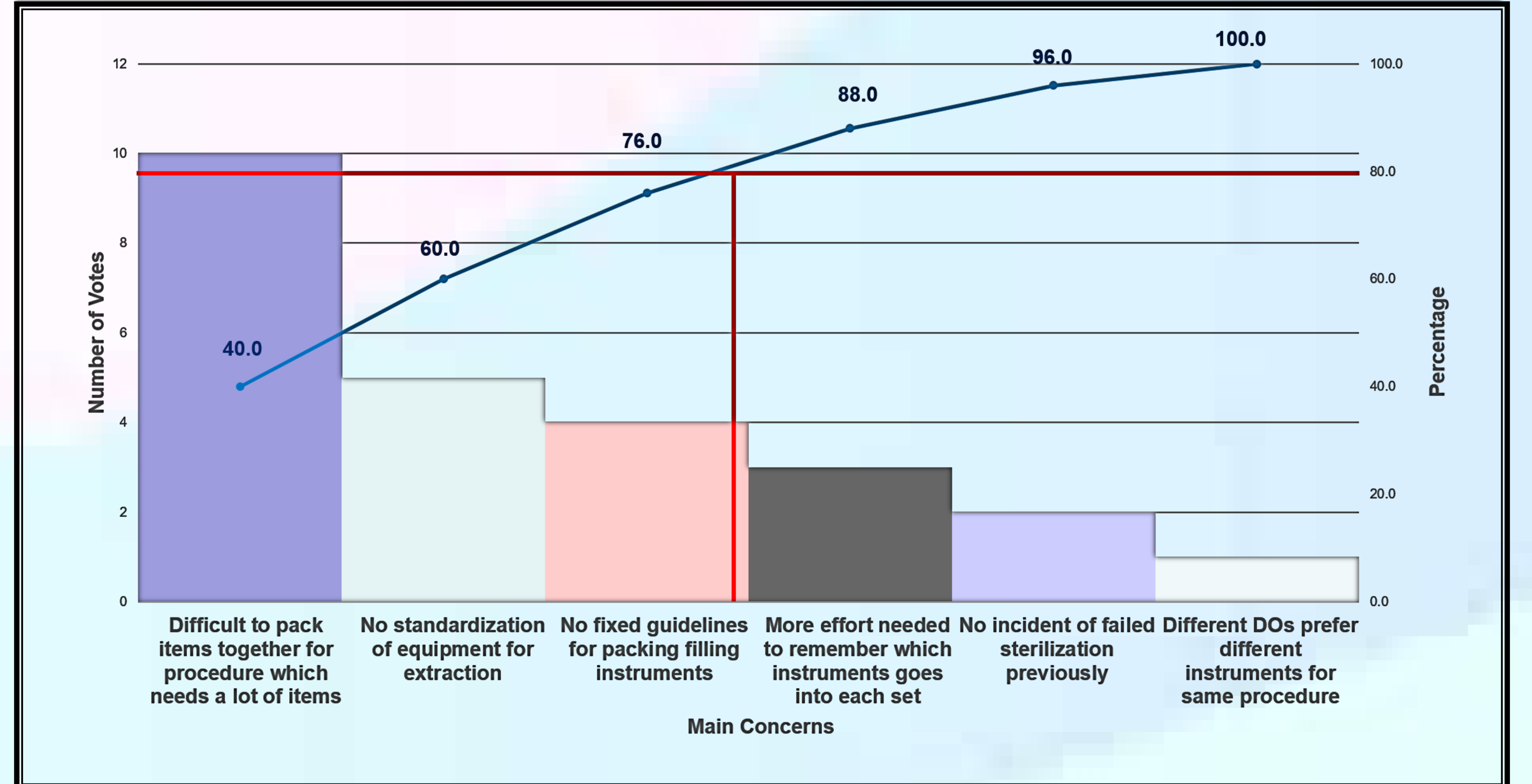
Flow Chart of Process



Cause and Effect Diagram



Pareto Chart



Implementation

PROBLEM	INTERVENTION	DATE OF IMPLEMENTATION
Difficult to pack items together for procedure which needs a lot of items	<ul style="list-style-type: none"> Create a crown treatment set Create a RCT set 	19 July 2019 23 July 2019
No standardization of equipment for extraction	<ul style="list-style-type: none"> Create a luxator set Create a suture set 	29 April 2019
No fixed guidelines for packing filling instruments	<ul style="list-style-type: none"> Include tofflemire and miller forceps into cons set (proximal filling cons set) Include white stone burs into cons bur set 	17 June 2019 24 June 2019

Results

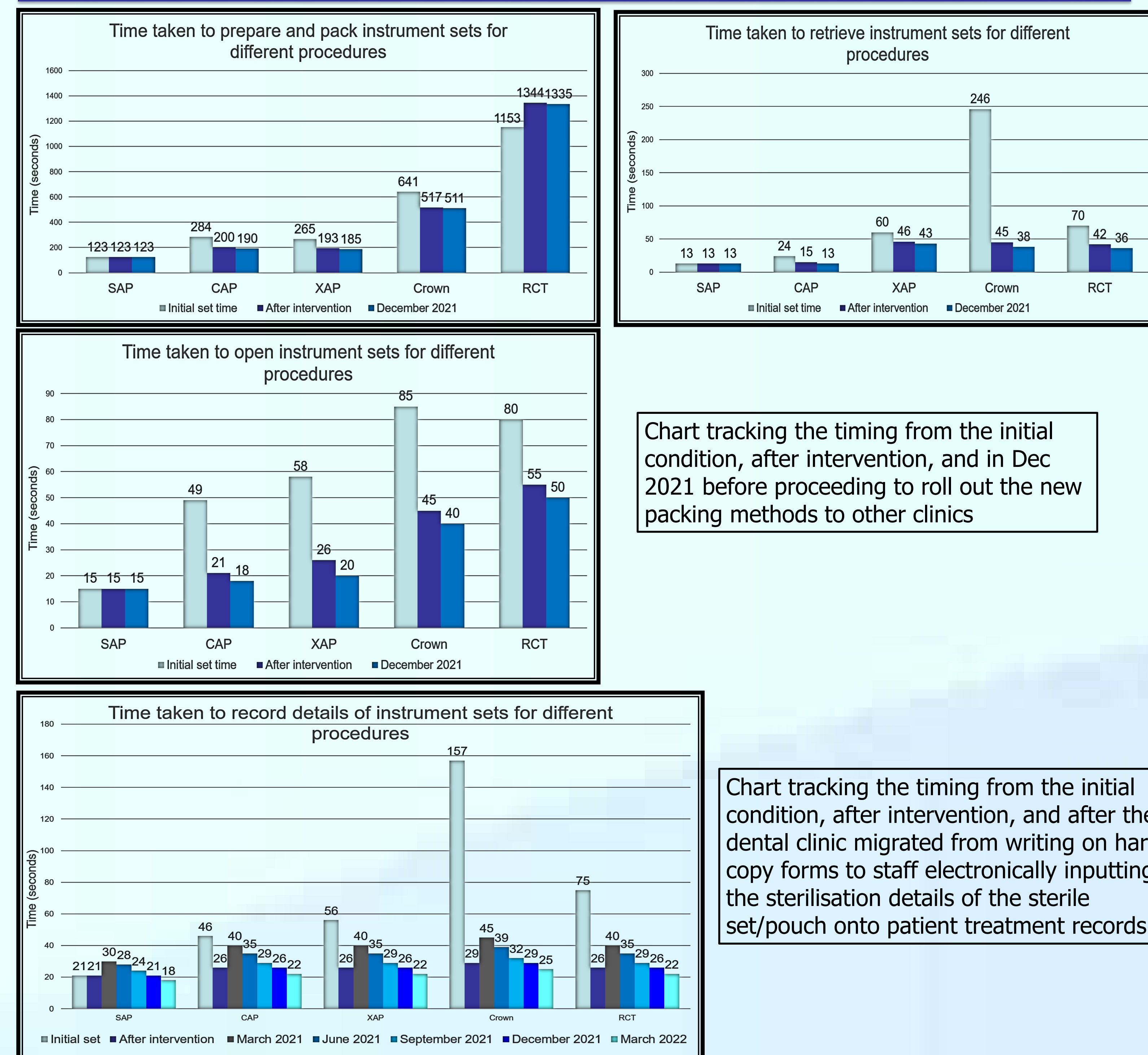


Chart tracking the timing from the initial condition, after intervention, and in Dec 2021 before proceeding to roll out the new packing methods to other clinics

Chart tracking the timing from the initial condition, after intervention, and after the dental clinic migrated from writing on hard copy forms to staff electronically inputting the sterilisation details of the sterile set/pouch onto patient treatment records.

Cost Savings

- Overall, except for the packing of the root canal treatment set, there were a reduction of manpower time needed to pack, retrieve, open and record the instrument sets after organizing instruments into sets.
- In addition to reduction of manpower time, there were material cost savings as well as lesser pouches and chemical indicators are required for the instruments of each procedures.

Problems Encountered

- Some of the procedures started off with numerous pouches and it was a huge challenge to reduce it down. Alternative forms of packaging (cassette tray) had to be sourced to hold all the items, which incurred some additional cost.
- With the use of cassette tray, HAs needed more packing time to arrange the items properly even though it saved the DA's time in retrieving, opening and recording the instrument sets.
- Due to unfamiliarity with the layouts of the new instrument sets, the HAs needed additional time to refer to pictorial guides during packing.
- Even though the instruments were arranged properly during packing, DAs noticed that some of the instruments moved out of alignment in the cassette tray due to movement during sterilization, storage and transport of the instruments set.
- For the crown preparation set, the team were unable to reduce the number of instrument pouches to 5 or less due to space limitation of the cassette tray.

Strategies to Sustain

- Plans to spread the new methods of packing of instruments into sets with the other clinics for implementation
- Have pictorial guides of each instrument set for reference on what items are packed into sets
- Dental staff are welcomed to give suggestions on how to improve the instruments set so as to ensure the instrument sets designs are kept up to date with the clinicians' demands
- To source for bigger cassette trays to accommodate for more instruments in each sets