

REDUCE POSITIVE ENDOSCOPE MSC RESULT

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- SAFETY
- QUALITY
- PATIENT EXPERIENCE
- PRODUCTIVITY
- COST
- TEAMWORK
- COMMUNICATION

Define Problem, Set Aim

From September 2018 to October 2018, the positive microsurveillance culture (MSC) result of flexible endoscopes reached 32.5% which was higher than existing record (20%). This led to increased risk of endoscope related nosocomial, reduced availability of endoscope circulation, increased cost of repeated MSC and unhappy staff.

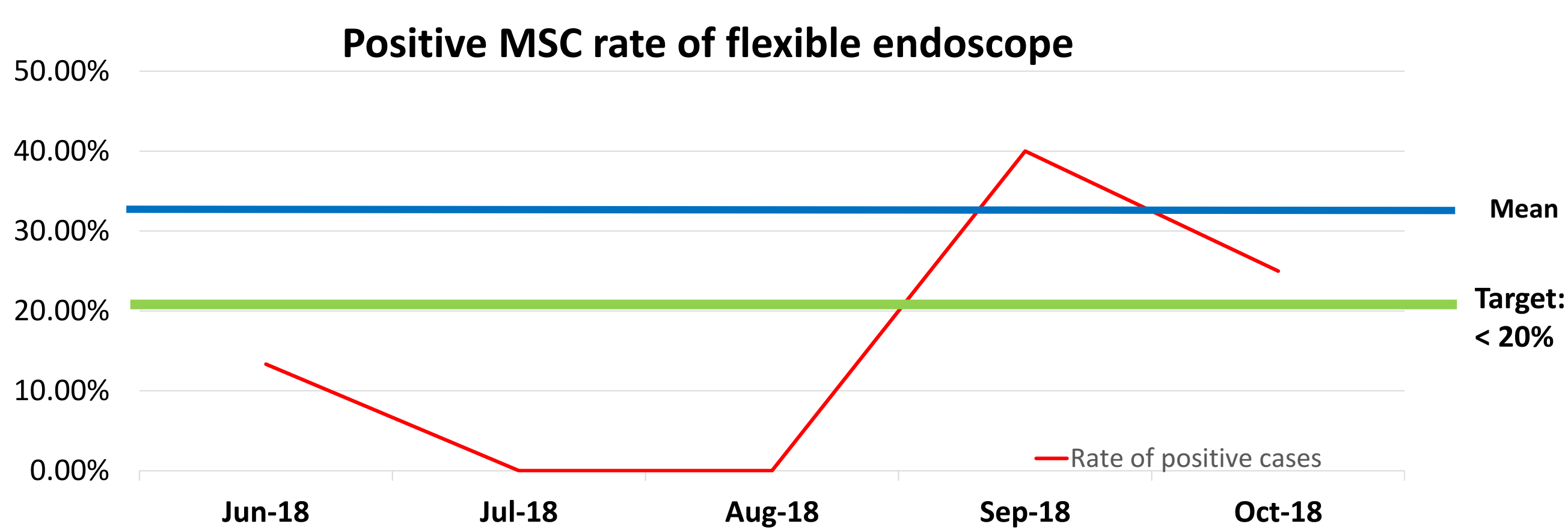
Aim

The endoscopy team intends to achieve less than 20% positive MSC by 31/03/2020 for flexible endoscope undergoing MSC because we want to provide safe endoscope for patient use.

Establish Measures

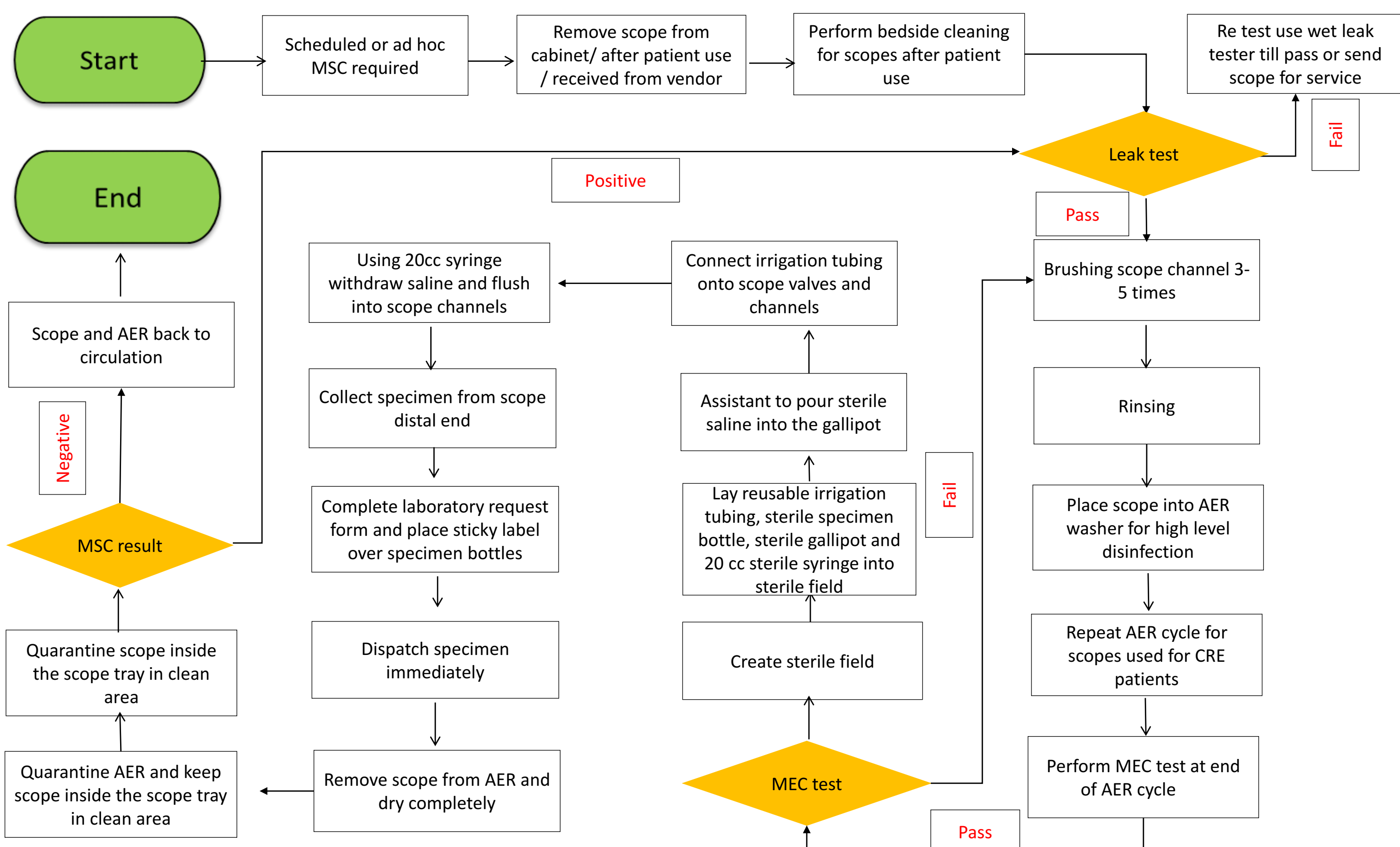
What was your performance before interventions?

Outcome measure:

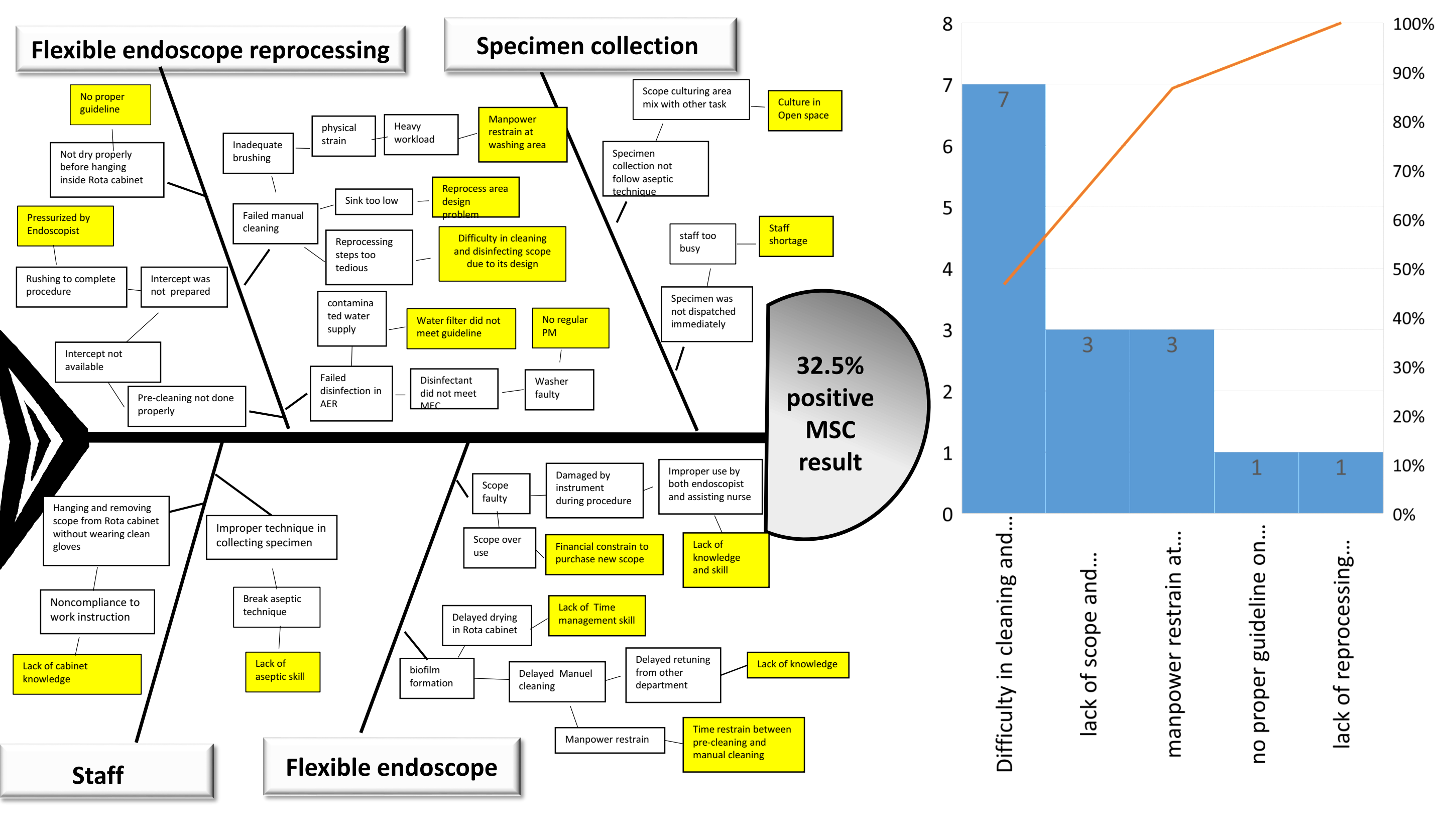


Analyse Problem

Flexible endoscope MSC process (before improvement):



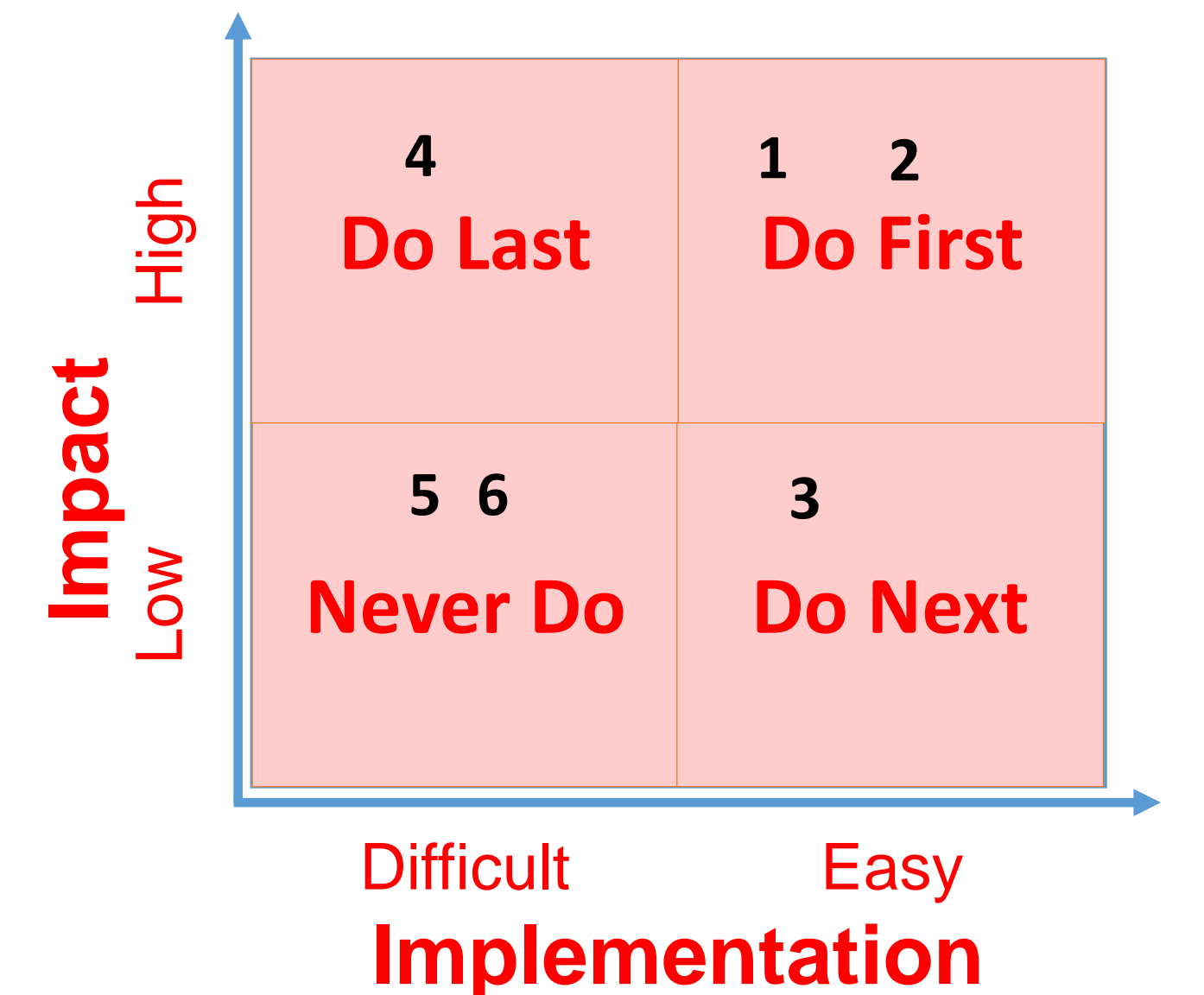
What are the probable root causes?



Select Changes

What are all the probable solutions? Which ones are selected for testing?

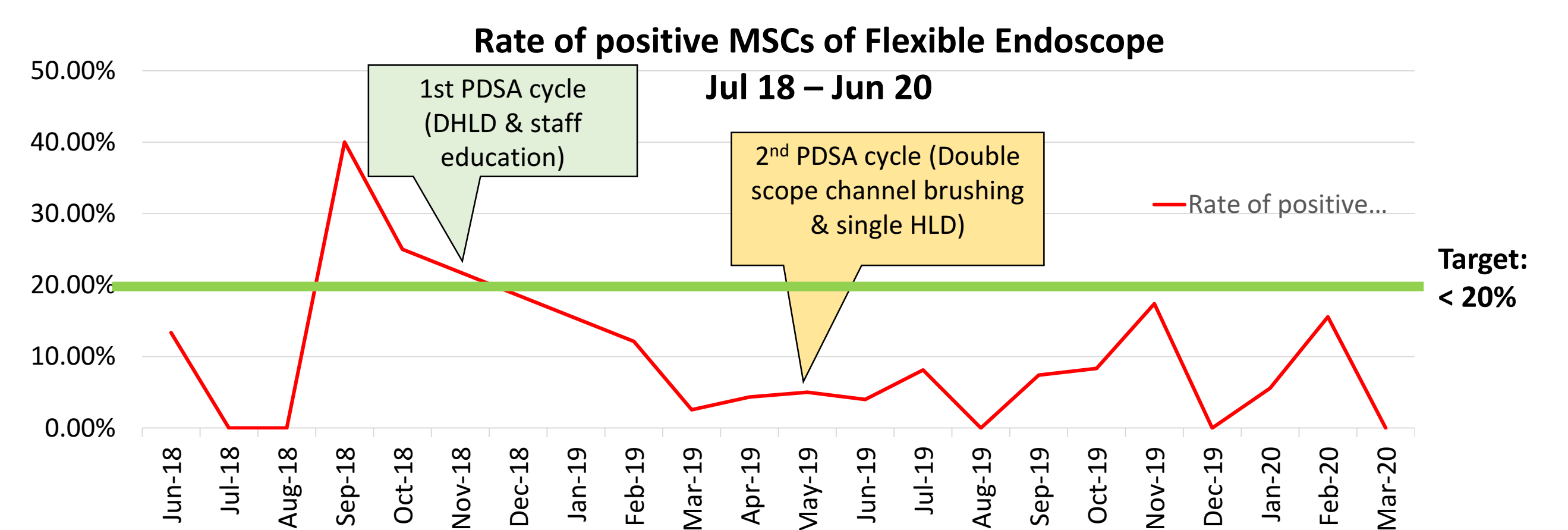
Root Cause	Potential Solutions
Difficulty in cleaning and disinfecting scope due to its design	1 Double high level disinfection
	2 Reinforce adequate manual cleaning
	3 More frequent MSC to detect potential problem
	4 Buy new scopes
	5 Send scope for chemical sterilisation
	6 Use disposable endoscopes if available



Test & Implement Changes

How do we pilot the changes? What are the initial results?

CYCLE	PLAN	DO	STUDY	ACT
1	a) Perform double high level disinfection (DHLD) for endoscopes undergoing MSC b) Reinforce and educate staff on adequate manual cleaning through roll call, ad hoc audit during endoscope reprocessing	DHLD was carried out for all endoscopes undergoing MSC. Meanwhile, all endoscopy staff were reinforced on proper manual cleaning through roll call. And monthly endoscope reprocessing audit increased to weekly.	Reduced positive MSC rate	DHLD was more effective than single HLD. However, it added workload for reprocessing staff and prolonged AER and endoscope turn around time. More importantly, DHLD increased endoscope reprocess cost, \$5100 (single HLD) vs \$5180 (DHLD).
2	Increase endoscopes channel brushing from 3-5 times to 6-10 times during manual cleaning	Adapt double brushing and single HLD for all endoscopes undergoing MSC	Comparable positive MSC rate as compared to DHLD	Double endoscope channel brushing is effective to reduce positive MSC. It is more cost effective than DHLD (\$5120 vs \$5180), but increased workload for reprocessing staff.



Spread Changes, Learning Points

What are/were the strategies to spread change after implementation? DHLD is included in the latest endoscope reprocessing policy at Jurong campus. Both DHLD and double brushing are the current work instruction in NTFGH endoscopy. The project team was invited for podium presentation at SGNA in the United States, and was planned to share at local conference this year.

What are the key learnings from this project? Positive endoscope MSC is contributed by multiple causes. We should identify the main root causes and work on current evidence at affordable cost to provide safe equipment for patient use.

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