

# Loaner instrumentation management program by using Lean system

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## BACKGROUND

### Clinical issue

The amount of implantation patients >2500 cases /year  
According to the occur rent reports in the year2013-2014 :  
1 the orthopedics operating theater cancelled 4 cases because loaner instrumentations were not available.  
2 Incomplete of implants and loaner instrumentation 7 times.  
3 implant and loaner instrumentations were not passed the sterile monitoring standards 8 times.

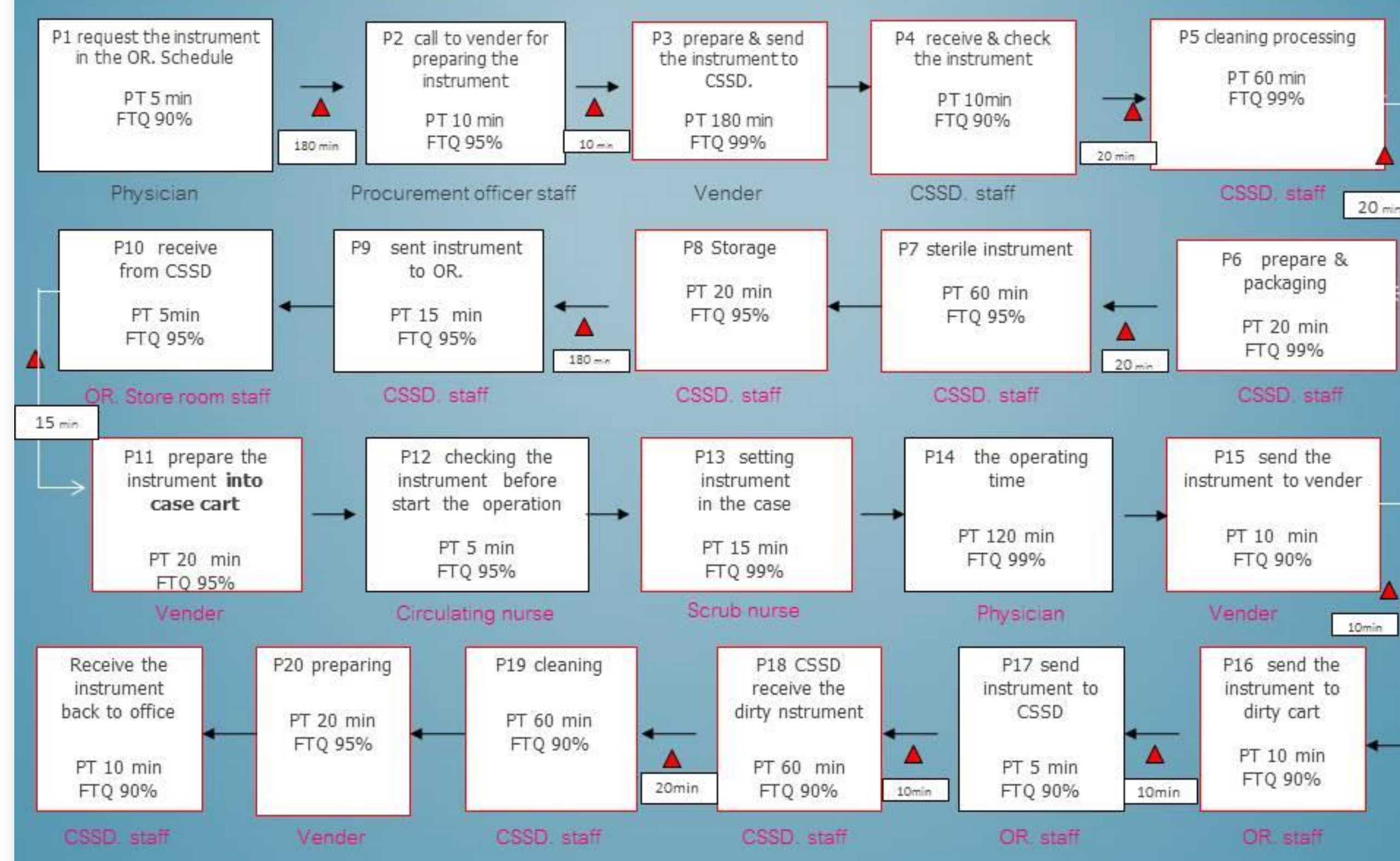


### Objective

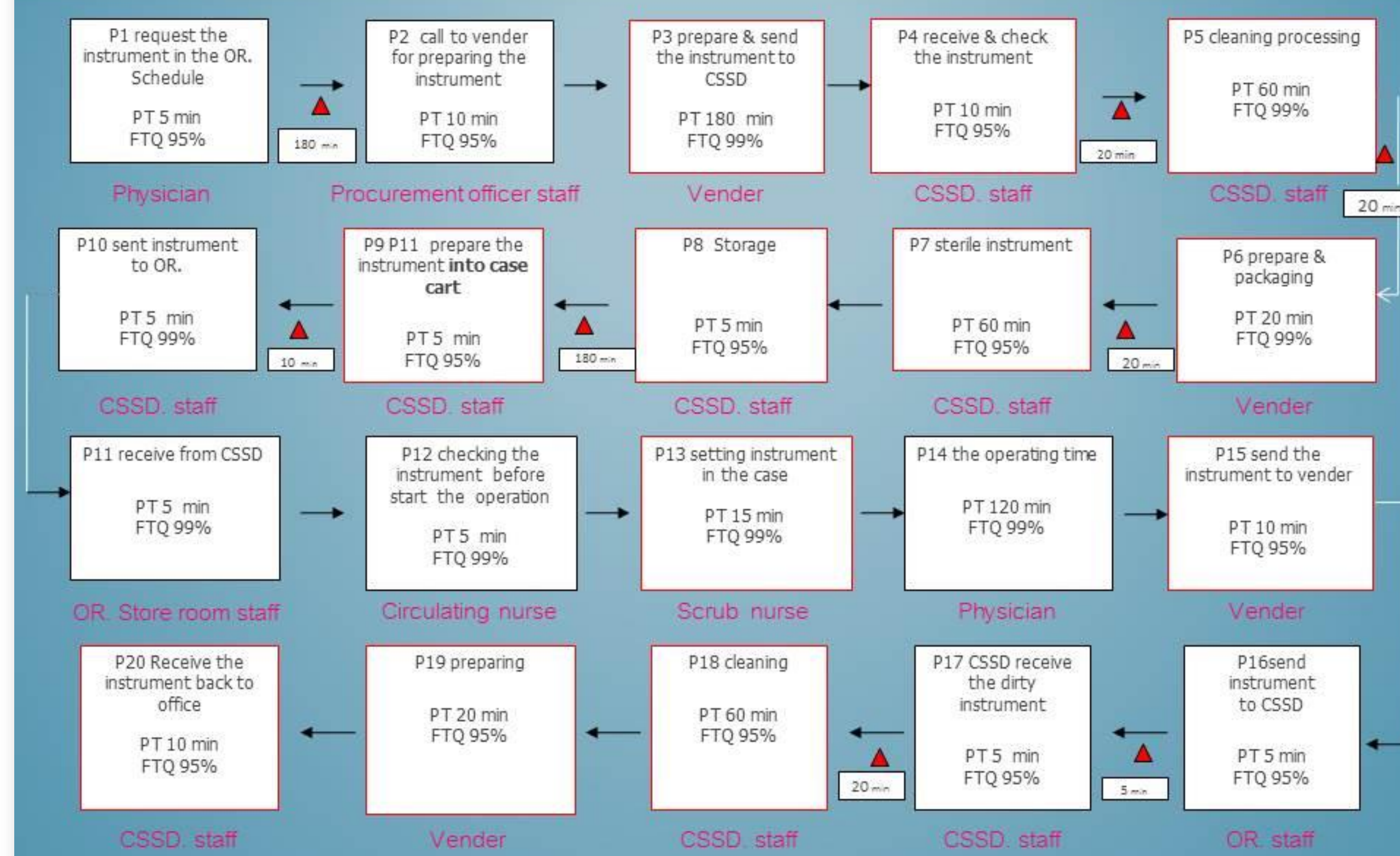
- Ensure that all needed special equipment and implant are available and correct
- Patients should be on time for the operating theater set
- Improve quality management program for Loaner instrumentation by using Lean system



## Flow before improvement



## Flow after improvement



## ESTABLISH LOANER INSTRUMENT POLICY



## Standard of Work

## KPI. & RESULT

KPI.	Target	Result					
		Before processing	After processing				
			1 <sup>st</sup> time July –Sept 2013	2 <sup>nd</sup> time Oct.-Dec. 2013	3 <sup>rd</sup> time Jan-Mar. 2014	4 <sup>th</sup> time Apr-Jun 2014	5 <sup>th</sup> time July 2014
1. The report of the orthopedics operating theater cancelled cases because of loaner instrumentations were not available	0 time	4 time	0 time	0 time	0 time	0 time	0 time
2. The report of the Incomplete of implants and loaner instrumentation	0 time	7 time	0 time	1 time	0 time	0 time	0 time
3. The report of implant and loaner instrumentations were not passed the sterile monitoring standards	0 time	8 time	0 time	4 time	0 time	0 time	0 time
4.The label of implants and loaner instrumentation are completely and correctly	90%	64.3 %	93.4%	98.7%	92.6%	95.9%	94.9%
5. the implants and loaner instrumentation were used the same as the order by the OR. schedule	90%	83.8%	92.8%	96.1%	92.8%	93.3%	94.1%

### List

### Before

### After

### Changing

Times for lifting the instrumentation trays	14 steps	10 steps	↓ 4 steps
The instrumentation weight	700 kgs./case	500 kgs./case	↓ 200 kgs./case
The report of the orthopedics operating theater cancelled cases because of loaner instrumentations were not available	4 times	0 times	↓ 4 times
The report of implant and loaner instrumentations were not passed the sterile monitoring standards	8 times	0 times	↓ 8 times
The report of the Incomplete of implants and loaner instrumentation	7 times	0 times	↓ 7 times
The label of implants and loaner instrumentation are completely and correctly	64.28%	95.10%	↑ 30.82%
The implants and loaner instrumentation were used the same as the order in OR. schedule	83.80%	93.59%	↑ 9.79%
The saving sterilization cost of the over back up instrumentation /month ***	37,665 baths/month	14,903 baths/month	↓ 22,762 baths/month
*** loaner instrumentation 300 cases /month, Cost 775 baths /case			Save cost =61.99%

## COMPARE TIME BEFORE /AFTER REARRANGEMENT

List	Before	After
Total Processes	21 steps	20 steps
Process time (PT)	730 minutes	615 minutes
Delay time (DT)	495 minutes	455 minutes
Total turn around time (TAT) = (PT+DT)	1225 minutes	1070 minutes
Value Added	27.17%	49.86%

### Loaner instrumentation management program by using Lean system

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**Background** Siriraj hospital, Mahidol University, Bangkok Thailand hospital consist of 69 operating theaters separated by the buildings and 20 minor operating theaters for GI endoscopes, CATH. labs ,Angiograms and OPD. minors. The Orthopedics Theater consist of 8 rooms, has the operation 30-40 cases /day. The most of Orthopedics cases are the implantation cases >2500 cases /year. All of the implantation cases need for the loaner instrument s from varieties vendors which should be sent to the CSSD. on time. There were the occur rent reports in the year 2013-2014:

- The cancelled 4 cases because loaner instrumentations were not available.
- The incomplete of implants and loaner instrumentation 7 times.
- The amount of implant and loaner instrumentations were not passed the sterile monitoring standards 8 times.

### Objective

- Ensure that all needed special equipment and implant are available and correct
- Patients should be on time for the operating theater set
- Improve the quality management program for Loaner instrumentation by using Lean system

**Method** Collect all data of the error problems. Set the flow by using Lean system. Meeting, discussion and presentation for find out the standard work to the Siriraj CSSD., Orthopedics theater staff nurses and Orthopedics Department Committee. Base on Lean system, then re-arrangement and set up the flow. Try out, collect data then set the policies and announcement to all users for start using this guide line.

**Conclusion** There are completely and correctly sterilization of implants and loaner instrumentation available on time. There is no cancelled operating theater case. All of implants and loaner instrumentation are completely and correctly labeling. The implants and loaner instrumentation were used the same as the order by the OR. Schedule.

