

# Easier, Faster & More Accurate Way to Generate Patient Attendance Forecast for Doctors



**Singapore Healthcare Management 2016**

Author  
Stephen Wong Kah Wai, SGH



## Background

At the Endocrinology Clinic at Diabetes & Metabolism Centre (DMC), all the doctors require clinic staff to prepare patient attendance forecast list of up to 6 months for their clinic sessions, so they can plan their patients' next appointments.

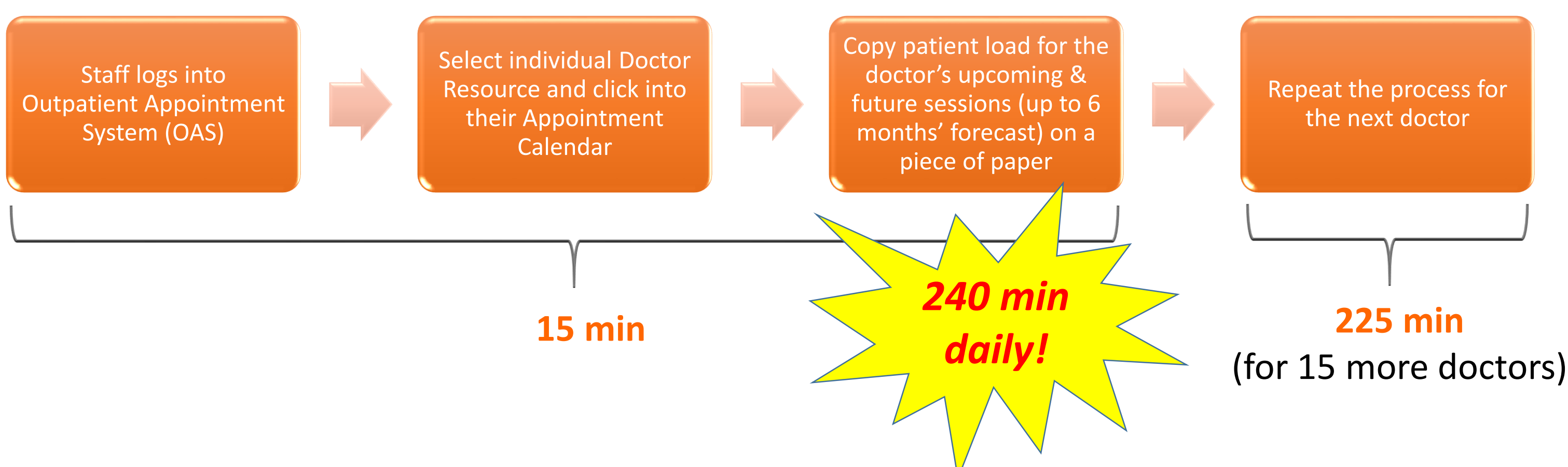
With this list, doctors can view at a glance and better manage their clinic workload by booking patients into their lighter clinics.

## Aim

To develop an **easier, faster** and **more accurate** way to generate patient attendance forecast for doctors, so that they can better manage their clinic workload.

## Initial State

Every day, the assigned staff prepares the patient attendance forecast lists for doctors running clinics the next day. On average, there are 8 doctors running 16 sessions daily. The following is what the clinic staff had been doing:



- Staff takes approximately 4 man-hours (240 min) per day to complete the list for all doctors running clinics the next day
- Staff do not like preparing this list as it is very tedious and time consuming
- Doctors are frustrated because they are often provided with an outdated list and oftentimes they cannot decipher the staff's illegible handwriting.



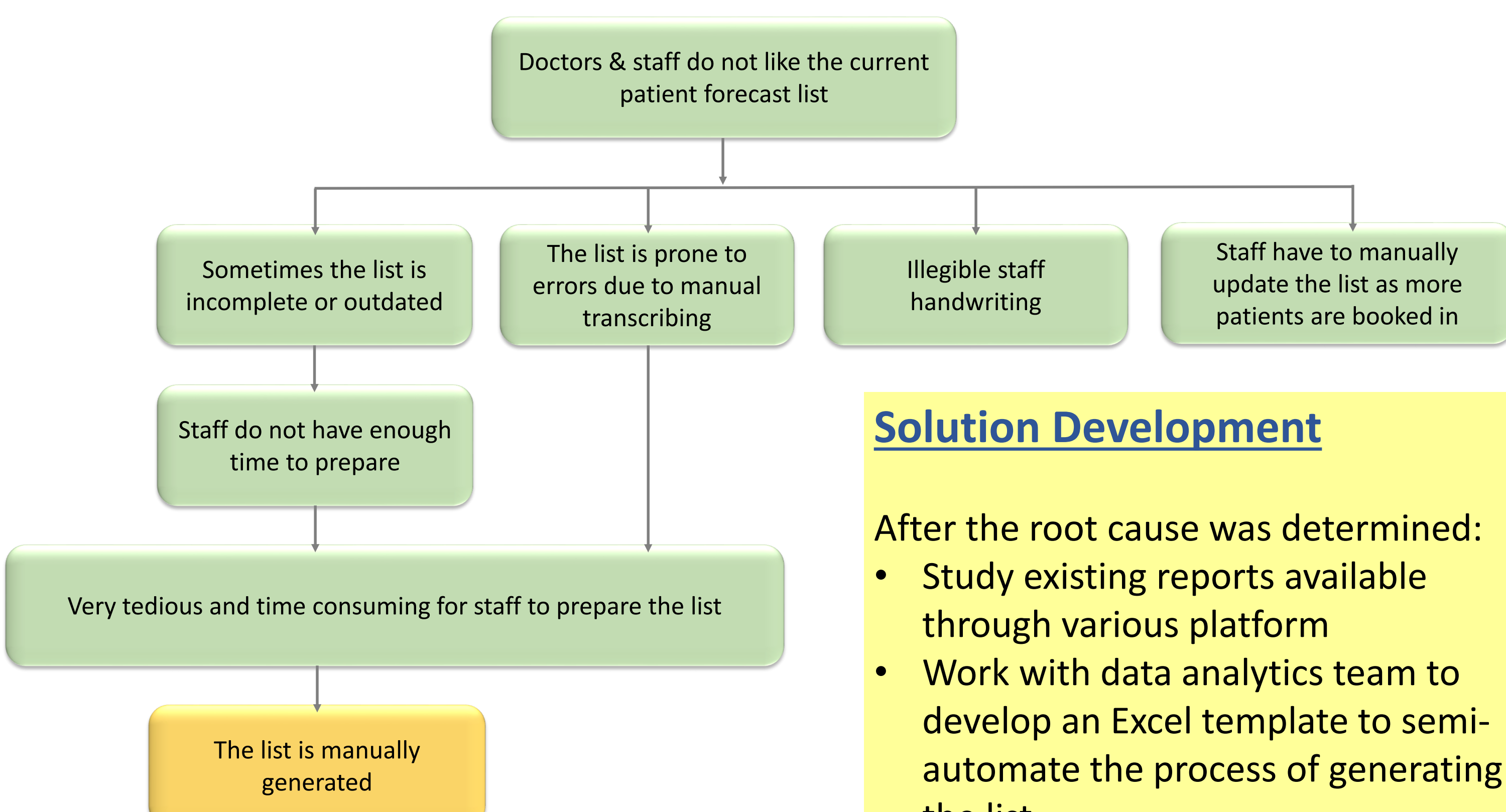
Tan HC PBC PTE END Appointment Slot Management 2015

Wk	Monday	AM	PM	Tuesday	AM	PM	Wednesday	AM	PM	Thursday	AM	PM	Friday	AM	PM
0	05.01.15		10	06.01.15	8	Bik	07.01.15			08.01.15			09.01.15		
1	12.01.15		9+1	13.01.15	12	11	14.01.15			15.01.15			16.01.15		
2	19.01.15		12	20.01.15	9	12.5	21.01.15			22.01.15			23.01.15		
3	26.01.15		14	27.01.15	11	8	28.01.15			29.01.15			30.01.15		
4	02.02.15		Bik	03.02.15	Bik	Bik	04.02.15			05.02.15			06.02.15		
5	09.02.15		7.8	10.02.15	10	11+1	11.02.15			12.02.15			13.02.15		
6	16.02.15		11	17.02.15	8	10	18.02.15			19.02.15			20.02.15		
7	23.02.15		10	24.02.15	7	9	25.02.15			26.02.15			27.02.15		

Sample of a handwritten patient attendance forecast list

## Methodology

The '5 Whys' method was used to determine the root cause of the problem.



### Solution Development

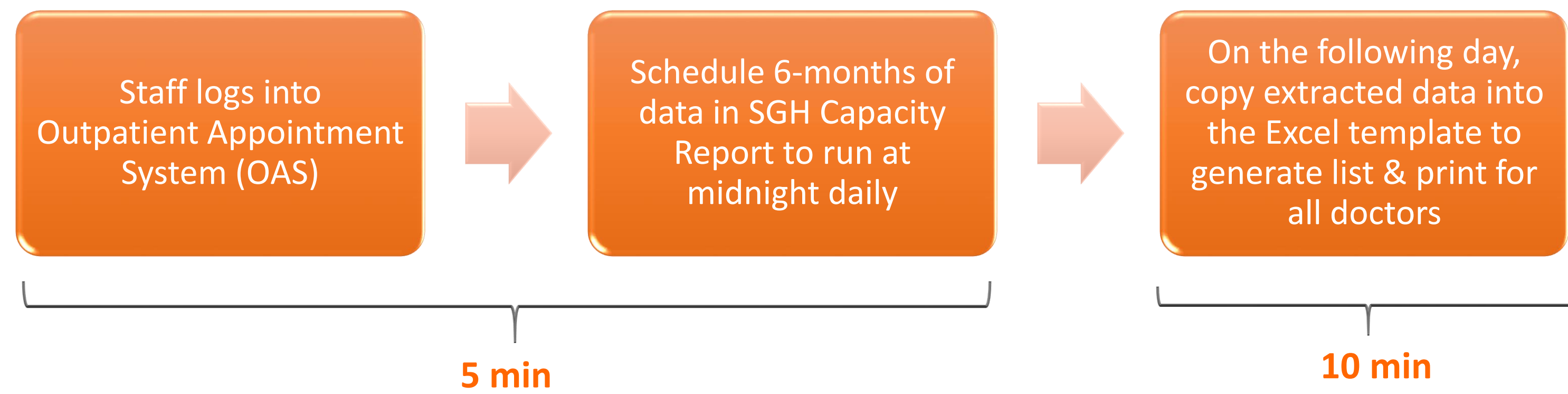
After the root cause was determined:

- Study existing reports available through various platform
- Work with data analytics team to develop an Excel template to semi-automate the process of generating the list
- Gather feedback from doctors & staff for further enhancements
- Pilot in Endocrinology Clinic

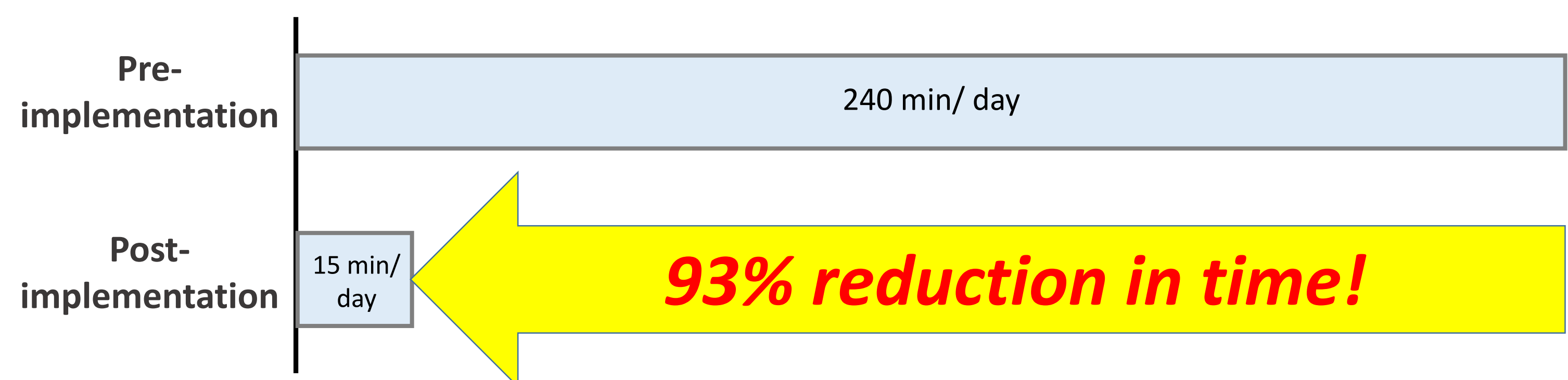
## Results

An Excel template was developed, which will make use of data extracted from OAS to generate the patient attendance forecast lists for all the doctors' sessions.

The new workflow is as follows:



Using this new Excel template, staff now spend just 15 min a day to generate the patient attendance forecast list for all the doctors instead of 240 min. This translates into **total time savings of 938 man-hours annually!**



The new patient attendance forecast list generated using the new Excel template is as shown:

Dr Tan HC

Updated: 4 Mar 2016

WEEK	Wed	AM	PM	Thu	AM	PM	Fri	AM	PM
0	9-Mar-16	22 ( )		10-Mar-16		21 ( )	11-Mar-16		
1	16-Mar-16	0 (Leave)		17-Mar-16		0 (Leave)	18-Mar-16		
2	23-Mar-16	20 ( )		24-Mar-16		19 ( )	25-Mar-16		
3	30-Mar-16	21 ( )		31-Mar-16		19 ( )	1-Apr-16		
4	6-Apr-16	19 ( )		7-Apr-16		17 ( )	8-Apr-16		
5	13-Apr-16	19 ( )		14-Apr-16		19 ( )	15-Apr-16		
6	20-Apr-16	18 ( )		21-Apr-16		15 ( )	22-Apr-16		
7	27-Apr-16	18 ( )		28-Apr-16		16 ( )	29-Apr-16		

### Intangible Results

- Staff morale has greatly improved as it is now much easier and faster for them to prepare the forecast list each day
- Staff are able to spend more time attending to patients due to the resulted time savings
- Doctors' morale has also improved as they are now provided with updated and accurate lists daily, which aid in the planning of their clinic workload
- No more guess work for the doctors as the Excel list solves the problem of illegible staff handwriting



## Conclusion

The project does not involve complex or lengthy analysis or solutions, but it effectively simplifies the process of generating patient attendance forecasts for our doctors and results in sustainable improvements.

By sharing the Excel template with other clinics-in-charge, potentially, the project can result in more than 12,000 man-hour savings a year across all outpatient clinics, which can be re-deployed to handle other tasks.

This project has also proven that it does not always cost a lot to develop "IT" solutions to everyday problems. Sometimes a simple Excel template, like the one presented in this poster, will solve the problem and make life easier for everyone, albeit it being a semi-automated solution.