Improving Service Quality & Productivity in Changi General Hospital Medical Social Services
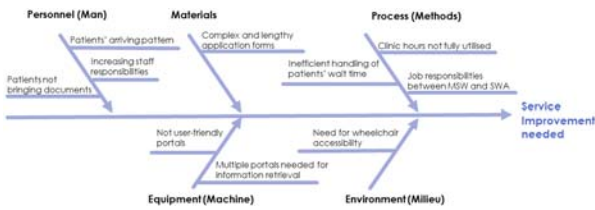
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Changi General Hospital

SUMMARY

PROBLEMS

OBJECTIVES

1 Improve patients' experience
To reduce patients' waiting time

2 Improve clinic's productivity
To allow clinic to cope with patients' inflow

DEFINITION

Medical Social Services (MSS)
MSS attends to patients and their families who require psychological support and assistance to help them cope with their medical conditions and related psychosocial problems.

Medical Social Worker (MSW)
Provides psycho-social assessment and works collaboratively with patients/families, healthcare team and community resources to provide holistic care such as finances, counseling, employment and home care needs .
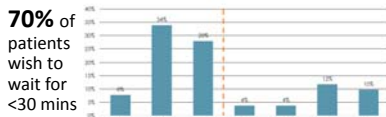
Social Worker Assistant (SWA)
Provides support to MSWs in delivering psychosocial care to patients, including registering of patients, scheduling of appointments to home visits, et cetera.

METHODOLOGY

1 Identification of factors → **2** Data Collection → **3** Data Analysis → **4** Preliminary Solution → **5** Simulation Execution → **6** Verification & Validation

IDENTIFY

8 out of 10 cases are Financial

70% of patients wish to wait for <30 mins

COLLECT

4 main aspects
1. Staff work schedules (no. of staff on duty etc.)
2. Patients' Profile (arrival rate, no-shows)
3. Clinic procedural process time
4. Survey on patients' perception of service quality

ANALYSE

2 Problems
① Highly **variable** patients' arrival rate
② Staff schedules result in **low utilisation** of clinic hours

SUGGEST

MEASURE service

Patients' waiting time
Comparison of actual waiting time against patients' desired waiting time

Clinic Hours Utilisation
Time spent on clinic processes

Target
Limit waiting time to **30** minutes
Improve clinic hours **utilisation**

Proposed change

Staff divided into strict consultation and admin schedules.

Remove the distinction between consultation and administrative shifts.

SIMULATE

Use of AutoMod Simulation Software

Simulation algorithm

Registration: Patient registers with SWA at counter → Pass to SWA any supporting documents. → Wait to be called by MSW.

Consultation: MSW receives arrival SMS & conducts case review → SWA hands documents over to MSW → MSW calls patient after case review → Actual consultation

VERIFY & VALIDATE

| Methods	Description	Results
Heuristic	Check logical relationships	✓
What-If Analysis	Test of model assumptions	✓
Input- Output Comparison	Check model output against expected results	✓

RECOMMENDATIONS

RESULTS from simulation
Waiting Time

| Parameters	Before	After	Change
Wait Time	27.1 min	8.61 min	68.2% ▼
Average queue length	0.61	0.1	n.m.
Max queue length (per MSW basis)	4.25	0.75	n.m.
Total Clinic Overtime (per week)	11.23 hrs	2.77 hrs	75.3% ▼

SENSITIVITY
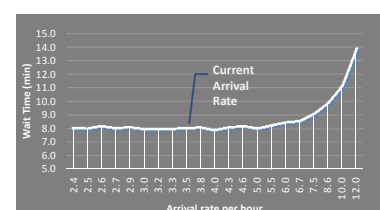
Solution is relatively robust with respect to **changes in arrival rates**

OTHER CONSIDERATIONS

1 **Allow SWAs to take on greater responsibilities**

Allow MSWs to focus on providing **quality consultation sessions** for patients

2 **Improvement in design of applications forms**

Easy to understand forms (Human Factors Engineering) will **reduce consultation time** due to less clarifications.

Additional benefit of **reduction in** administrative time due to better completed forms.

Utilised Clinic Hours on Consultations (aggregate)

Clinic hours increased by **7.6%**
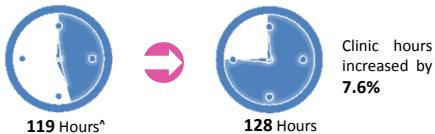
119 Hours^   128 Hours
*Previous clinic hours were fulfilled with overtime working hours

Available Hours for Administrative Work (per MSW basis)

Admin availability hours increased by **82%** #
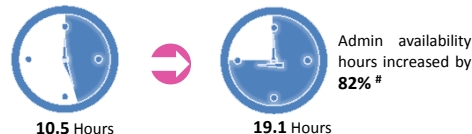
10.5 Hours   19.1 Hours
#Increase made available through the allocation of idle time during consultation hours to admin work

CONCLUSION

Flexible scheduling allows for better patient service quality (waiting time) and overall higher clinic productivity (less overtime and more hours for administrative work).

LIMITATIONS
• Recommendations will not work if number of patients increase continuously -> **More sustainable solutions** have to be worked out
• Inherently difficult to estimate **subjective responses** [patients' perceptions on service quality] and model **human behaviour** [arrival patterns can vary drastically]

FURTHER DIRECTIONS
• Use **design of experiment techniques** to test out the main interaction effects [between flexible scheduling and other improvement suggestions]
• **Extension** of model to consider more factors
• Creation of **model documentation** for subsequent improvement works