Improvements in Antenatal Thalassaemia Screening in a Maternity Hospital

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Background:

Thalassaemia and Haemoglobinopathies are prevalent in Southeast Asia. In KK Women's and Children's Hospital, Thalassaemia Screening serves as an important antenatal test for obstetric patients to be followed up at the O&G Department. Early detection is crucial for subsequent genetic counselling.

Previously, the patients' MCV and MCH had been used as the first screening criteria. (See figure 1).

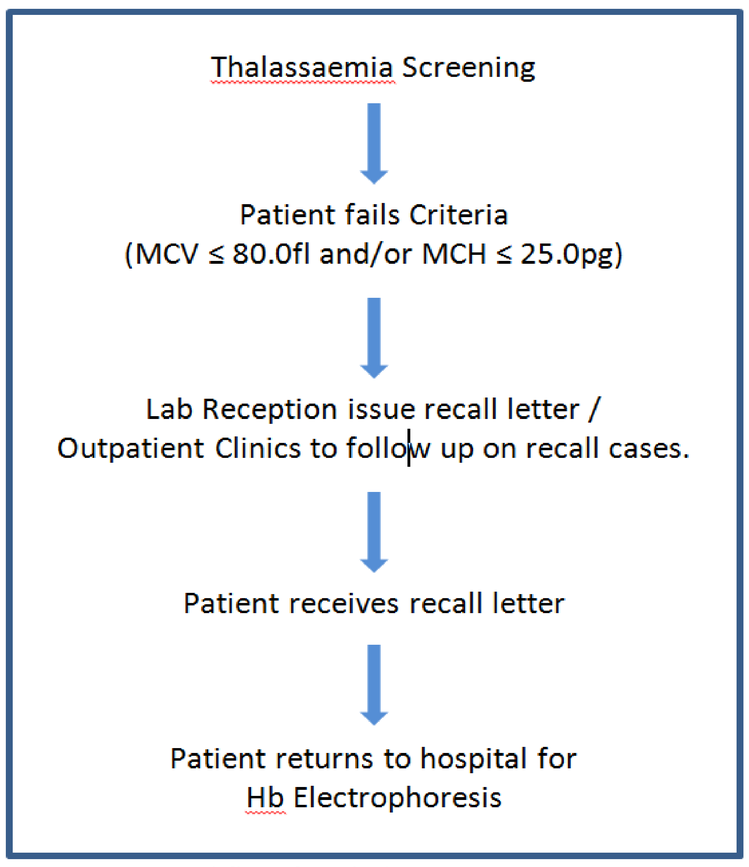

Figure 1: Workflow for Thalassaemia Screening.

Over the years, following issues have been observed:

	Issues
1	Patients with normal MCH and MCV who were in fact carriers of Thalassaemias or Haemoglobinopathies may have gone undetected.
2	Due to the increased awareness of Thalassaemia and Haemoglobinopathies, some patients whom had test done before, were worried to receive the recall letter.
3	Too many steps in the recall process, which involved multiple departments.

Methodology:

Fishbone diagram was used to study and identify issues that required improvement. (See figure 2).

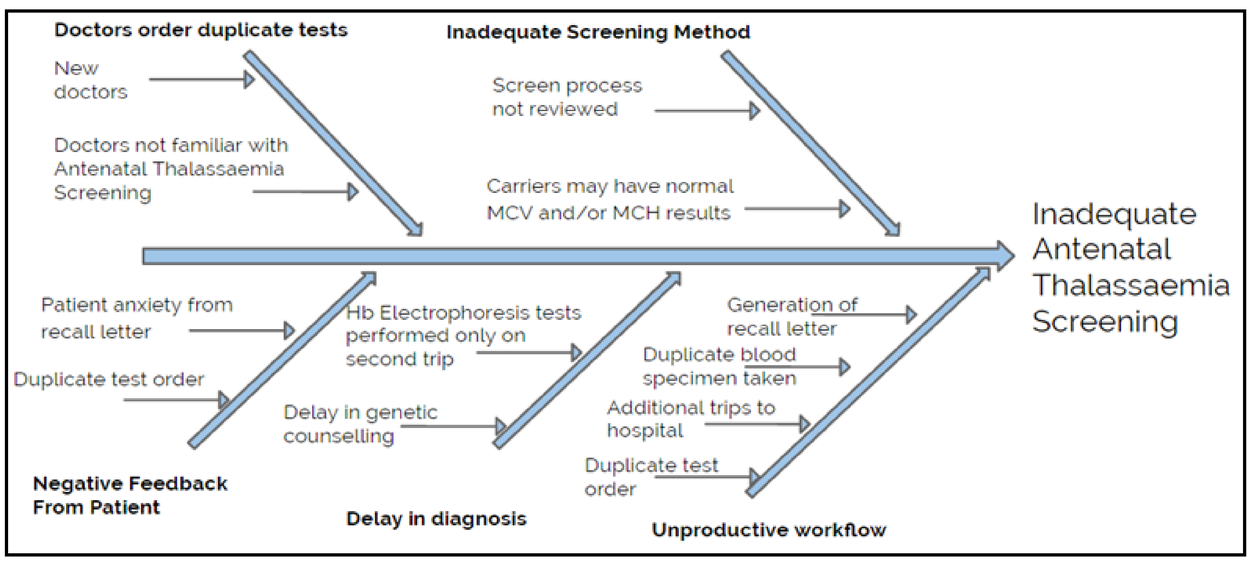

Figure 2: Fishbone diagram

Results:

Changes implemented to improve the workflow and effectiveness:

	Before	After
Doctors and nursing staff	Doctors request for Thalassaemia Screening. The Hb Electrophoresis is only performed on the 2nd visit when patient's MCV and/or MCH fails the criteria.	Doctors are given the option to request for a full Thalassaemia Screening panel on the 1st visit: • Full Blood Count (FBC), • Peripheral Blood Film (PBF), • Haemoglobin-H (HbH) Inclusion Bodies • Hb Electrophoresis
	Different tests in Thalassaemia Screening are performed on different visit and at different facilities: • FBC and PBF in KKH • HbH inclusion bodies and Hb Electrophoresis in SGH Doctors may find it difficult to correlate the lab findings.	By performing all tests together on the same visit and within the same facility (KKH), the doctors are able to correlate the lab findings better.
	Follow up to recall patients base on the recall letter list generated by the lab.	Issuing of recall letter has discontinued, hence no more recall letter list.
Lab	MCV and MCH was used as 1st criteria. Carrier with normal MCV and/or MCH may be missed.	The use of MCV and MCH as the initial screening step was discontinued.
	The issuing of recall letters had generated negative feedbacks from patients.	No more negative feedback as the issuing of recall letter has discontinued.
	Too many steps in the patient recall processes.	Work processes are cut down, better productivity in Lab.
Patient	Patient was inconvenienced by making at least 2 trips to KKH for Thalassaemia Screening.	All the tests are performed on the same blood sample collected on the 1st visit.
	At least 2 different samples were collected for Thalassaemia Screening. Hb Electrophoresis was only performed on the 2nd visit when MCV and/or MCH failed the criteria.	By performing all tests together on the same blood sample, the likelihood of missing thalassaemia carrier or other haemoglobin variants is greatly reduced. Overall patient waiting time is also reduced.
	Patients were worried to receive the recall letter.	No need to issue recall letter.

Conclusion:

The changes had greatly benefitted patients in terms of convenience, patient experience and the quality of the antenatal thalassaemia screening.