What is the Obstetric Triage Decision Aid?

In an Australian first, the Obstetric Decision Triage Aid (ODTA) supports the consistent, accurate and timely triage of pregnant and postpartum women in both the Emergency Department and Maternity Unit.

Funded by Better Care Victoria, this approach reduces variation in clinical assessment by standardising assessment and triage for obstetric and non-obstetric conditions, reducing the clinical risk of under triage which may result in delays to intervention.

Key Achievements of the OTDA

- Improved self-rated confidence and competence of nurses and midwives to conduct obstetric triage
- Appropriate prioritisation of care with higher triage categories associated with increased need for hospitalisation – with improved timeliness of care according to clinical urgency
- Reduced waiting time from arrival to triage for women presenting to the Maternity Assessment Unit (MAU)
- Reduced waiting time from triage to CTG, according to clinical urgency, for women who present with concerns about fetal wellbeing
- Reduced number of women who ‘left on own accord’ prior to being seen or during care when the OTDA was used
- Improved ability to document volume and nature of workload in the MAU, resulting in an increase in staff for peak periods, an escalation process if workload becomes extreme and ‘real time’ monitoring with Birth Suite able to view MAU patient load
- A number of obstetric triage performance indicators that are routinely being measured and monitored in the ED and MAU

TESTIMONIAL

“Werribee Mercy is a busy obstetric unit with 3800 births per year. The introduction of the OTDA saw a marked difference in assessment – both in quality and timing. The tool leads to accurate diagnosis and correct management of patients. Patients with high risk presentations are easily identified using the prompts that follow logically in the triage questions and even less experienced midwives can be guided by these. Patients feel safe as they are assessed within 15 min of arrival, given a triage score and then managed according to their score. This allows for both good patient care and education of midwives. Implementation was relatively simple and the tool was easily adopted by all levels of medical and midwifery staff. I do feel we cannot run an emergency obstetric unit without this tool.”

- Dr Jacqueline Van Dam, Director of Obstetrics, Werribee Mercy Hospital

Brochure Contents:

- Project History and Overview
- Summary of Project Components
  - Obstetric Triage Expert Panel Workshop
  - Pre & Post Staff Survey on Obstetric Triage
  - Implementation Support
  - Pre-implementation Observation Study & Clinical Audit
  - Stakeholder Forum
  - Post-implementation Clinical Audit
  - Validation
- The Project Team
- What is next?
- Conclusion
- References
Project History and Overview

The OTDA project lead was Mary McCarthy, Emergency Department Nurse Unit Manager, Mercy Hospital for Women (MHW). Mary, after 20 years in the women’s health emergency field, had created an obstetric triage decision aid to improve the triage of women in the department. The MHW ED is a unique department in Victoria, as it is staffed primarily by midwives and sees over 16,000 maternity and gynaecology presentations per year, the majority being related to pregnancy – and all presentations regardless of gestation or presentation type are triaged and managed by the department. As an ED, the department must meet all the Victorian requirements regarding ED performance and Mary found that the Australasian Triage Scale (ATS) was not ideal for application to maternity presentations. Consequently, as part of a Master of Midwifery, Mary created the OTDA and tested it in her department, specifically looking at the consistency and documentation of triage assessment. This work was published in the BMJ Emergency Medicine Journal in February, 2013 – manuscript available at http://emj.bmj.com/content/30/2/117.1

However, the MHW ED was a special women’s health ED and the challenges of obstetric triage persisted in general EDs as evidenced by work led by Associate Professor Marie Gerdtz, which had identified that emergency nurses were inconsistent with the allocation of ATS triage score for maternity presentations.2 Furthermore, in many hospitals, maternity presentations in the second half of pregnancy bypassed the ED altogether, with women presenting directly to maternity services – which routinely did not apply the triage concept.

Better Care Victoria funded the OTDA project to implement the OTDA into the general ED and the Maternity Assessment Unit (MAU) at Werribee Mercy Hospital (WMH) and to undertake a validation study of the OTDA. The OTDA was a comprehensive project with many elements to enable full understanding of the obstetric triage environment prior to the implementation of the OTDA, and then the implementation, evaluation and validation of the OTDA.
Triage decision aid makes it much safer in assessing clinical urgency and has improved the process of priority in clinical care.

Other common features such as systolic and diastolic blood pressure, heart rate, oxygen saturation and vaginal bleeding were also worked through with discussion until consensus was reached. The descriptors for the ATS were referred to throughout, with consideration of how pregnancy may impact on the framework. For example, the Australian College of Emergency Medicine ATS descriptors do not refer to systolic hypertension. However, hypertension is highly relevant in the second half of pregnancy when the condition preeclampsia may present, and so the expert panel added systolic hypertension to the descriptors. We ran out of time to complete all of the common presenting complaints and so the remaining ones were completed by e-mail. In all, ten complaints with associated key signs and symptoms underwent review and discussion until consensus was reached on parameters and allocated triage categories.

Pre and Post Staff Survey on Obstetric Triage

Prior to the implementation of the OTDA, triage nurses in ED and midwives working in the Maternity Assessment Unit (MAU) were invited to complete a survey on obstetric triage. Staff were asked to self-rate their level of confidence and competence to conduct obstetric triage/maternity assessment, each on a scale of 0 to 10 (with 10 completely confident & full competence respectively). Ten obstetric triage scenarios were also completed with an opportunity to free-text any comments. The same survey was re-invited post the implementation of the tool to enable the measurement of changes in confidence and competence. All surveys were coded to enable paired analysis of the pre and post-survey responses.

Quite varied responses were evident in the returned surveys. Some staff self-rated themselves 10/10 in the pre-survey, then following education and implementation of the tool, rated themselves at 9 in the post-survey. It is possible that following education, staff reflected on their prior knowledge and revised their self-rating lower, with the belief that they hadn’t fully appreciated the skills and knowledge to undertake obstetric triage before the education.

However, the majority of staff felt that their confidence and competence improved through the implementation of the OTDA, evidenced by higher self-rated scores in the post-survey. Overall, and in the ED sub-group, confidence and competence statistically improved; in the MAU sub-group confidence was statistically improved and although there was improvement in self-rated competence, this did not reach significance.

Implementation Support

A Local Implementation Team was formed to guide the day-to-day implementation of the OTDA. This group of clinicians and leaders from the ED and MAU met fortnightly and were very engaged with the decisions and changes. Additionally, obstetric triage procedures were written and endorsed by the group for the ED and MAU areas, prior to the procedures following the organisation’s usual process for new procedure approval. Key leadership positions in the organisation, such as, Clinical Director of Women and Children, NUM of ED, NUM of Maternity Services, and Director of Obstetrics and Gynaecology were instrumental in supporting the implementation of the OTDA.

Critical to the successful implementation of the OTDA was the project lead, Mary McCarthy. Mary was co-opted to the project lead role and committed full-time to the project. She instituted a multi-faceted education program involving formal education sessions; computer laboratory sessions; one-on-one instruction; regular communication by poster of audit findings and individual feedback using real episodes of obstetric triage. Additionally, a twilight seminar was held on “Pregnancy, triage and clinical urgency” which enabled multi-disciplinary attendance. The twilight seminar was repeated by popular demand with a total of 38 attendees. Over 150 ED and MAU staff received OTDA specific education, which covered 95% of staff conducting obstetric triage. The OTDA became part of orientation for new staff.

Pre-implementation Observational Study & Clinical Audit

Prior to any education or OTDA implementation, an observational study of the current obstetric triage and assessment processes in the ED and MAU was undertaken. Obstetric triage and assessment episodes were observed and a standard survey, adapted from Gerdtz and Bucknall, was completed by the observer. Additionally, as there were no routine data available on pregnant and postpartum presentations, it was necessary to undertake a manual clinical audit to establish the current standard of care prior to the implementation of the tool. An audit of 62 medical records was completed from 26 June to 3 July 2016. The audit was challenging with difficulty determining time stamps due to incomplete or absent documentation. However, in the MAU, it was evident that there was no triage process in place. Women who presented unscheduled, had their arrival time noted by a clerk.
A multidisciplinary and multi-institutional breakfast forum was held to provide insight and guidance to the overall project.

and then were asked to sit in the waiting room until a midwife was available to see them. Women were assessed and treatment commenced in the order they arrived. If a woman arrived who needed a lot of intervention, the next women who presented sometimes waited more than one hour before being seen by a midwife. There was no triage – assessment of clinical urgency, and only 42% of women were seen in ≤ 15 minutes following arrival. Twenty-five percent of women waited longer than 40 minutes, with the longest wait time recorded as 165 minutes. This is the wait time before the woman was seen by a midwife for the first time – as no triage process occurred. The pre-audit highlighted the potential clinical risk associated with the current processes – long wait times without consideration of clinical urgency for women who presented unscheduled to the MAU.

As expected, the ED pre-observational audit demonstrated routine use of a triage process. Women were seen promptly when they presented to ED for triage. Once triaged, their wait time to see a nurse or doctor was reflected by their triage score allocation. Women with Triage Category 3 or 4 waited significant amounts of time in the waiting room before being seen by a nurse – time ranged from 43 minutes to over three hours. No woman with a Triage Category 3 or 4 was seen within the ATS recommended time frames according to their triage category.

The two areas operated quite differently when a pregnant or postpartum woman presented unscheduled. In ED, women were triaged within a couple of minutes of arriving and then waited long periods of time in the waiting room before being attended to. In MAU, women waited extensive periods of time in the waiting room before being seen by a midwife, with care provided based on order of arrival and not on clinical urgency as no triage process took place.

Stakeholder Forum

A multidisciplinary and multi-institutional group of stakeholders was gathered at a breakfast forum in June 2017 to provide insight and guidance to the overall project on:

- the feasibility and generalisability of the OTDA for widespread adoption
- the scope of the OTDA across different care settings and clinical context
- the key functional elements of the purposively developed IT software
- the core Obstetric Triage Performance Indicators that may be developed and incorporated into the OTDA software
- integration with current systems without duplication of data entry

Post-Implementation Clinical Audit

After a three-month bedding-in time, obstetric triage and clinical data were extracted from the OTDA for a three-month period 7 August to 5 November 2017, representing the ‘post’ data for the MAU. ED data for the same time period were downloaded from the ED software programme and likely pregnant and postpartum presentations identified by the use of codes and keywords. Data were imported into the data analysis software SPSS (v24) and data cleaning and management conducted.

Once non-eligible cases were excluded (e.g. planned presentation to MAU prior to admission for elective caesarean section; neonatal presentations), there were 2,829 presentations; 708 in ED and 2121 in MAU. The OTDA was used in 88% of presentations; OTDA use was more likely in the MAU, as the obstetric triage process was new for midwives and the OTDA was the only option. In ED, nurses could use the OTDA or triage pregnant and postpartum women using their usual triage method. The OTDA was a change in triage practice for

I’ve found the triage tool helpful in tracking patients and categorising their urgency for review.

- Midwife at Mercy Health
experienced triage nurses and was not always used.

We looked at the ED presentations and compared the presentations based on whether the OTDA had been used or not. Triage nurses who did not use the OTDA, awarded the same triage category in just over half the presentations as would have been allocated by the OTDA; about 20% were given a lower triage score than the OTDA and 20% did not have enough detail documented by the triage nurse to know what the OTDA would have allocated the presentation.

The most common presenting complaint was abdominal pain in women who were ≥ 20 weeks pregnant – this included women who were in labour. The other two main complaints were per vaginal loss in women ≥ 20 weeks pregnant and women who were concerned with fetal wellbeing. Pain and per vaginal bleeding was the most common presenting complaint for women < 20 weeks pregnant.

By the end of the post-audit period, 78% of presentations to the MAU were triaged within 15 minutes of arrival – a substantial improvement. Ongoing audit has demonstrated continuing improvement with 87% triaged within 15 minutes in January 2018. Part of the improvement was achieved by the documentation enabled by the OTDA. It was evident that the single midwife rostered for the MAU was not able to achieve the expected triage standard during peak periods of workload. Consequently, a second midwife was routinely rostered to cover the busiest period of the day enabling triage to occur in a timely manner. Furthermore, an escalation process was put in place when the MAU became very busy with large numbers of women waiting to be seen. These measures were implemented as the OTDA facilitated the documentation of workload, patient throughput and waiting times.

Validation

An important component of the project was the validation of the OTDA. No validation study has been conducted on the ATS. Validation studies of other five-level triage scales have used a variety of variables for validation. Accordingly, measures for ‘% of admissions’, ‘resources used in ED’, and ‘leaving without being seen’ were variables used to validate the OTDA. In keeping with the only obstetric triage acuity scale validation study (applied in a maternity setting only), ‘% admission to birth suite and maternity ward’ were also included in the OTDA validation study. Further, for those presentations ≥ 28 weeks’ gestation when no/reduced fetal movements was a feature, the % of women admitted to hospital was also examined.

Higher triage category was significantly associated with admission to hospital (including admission to birth suite), and in the ED sub-group, intravenous (IV) cannulation and with a trend for blood test taken. In the MAU sub-group of women with nil/reduced fetal movements at ≥ 28 weeks’ gestation, higher triage category was associated with admission to hospital.

Overall, for women who were triaged without the OTDA being used, nearly 8% left without treatment, compared to 2% of women in whom the OTDA was used. However, there was a large difference in both the OTDA use and ‘leaving without being seen’ between the clinical areas; 96% of ‘leaving without being seen’ were women who presented to the ED. In the ED sub-group, over 11% of women left without being seen with a slightly higher proportion of women triaged without the OTDA leaving. This difference may reflect either dissatisfaction with the care they perceived they needed (i.e. under-triaged), or the tool was less likely to be used when the ED was very busy and the wait times were longer. The OTDA was proven valid.

The triage tool made it easier and a more organised approach.
Mary is in the process of presenting the results of the OTDA project to a variety of audiences and professional conferences by oral and poster presentations. We are also preparing manuscripts for publication in peer-reviewed journals. Mary has had a lot of interest in the OTDA and had a number of visitors to the Mercy to be shown how the OTDA works in practice.

Part of our project was the development of the validated OTDA ready for scaling up to Victorian health services. This final phase of the project will include a sector consultation so that we can determine the strength of interest in the OTDA and what a ‘scaled-up’ OTDA will look like – e.g. a stand-alone app, an extension of ED software, part of a patient monitoring program. The sector consultation is planned for July and we intend to invite a much larger number of stakeholders than our stakeholder forum held in June 2017.

What is next?

The Project Team

Mary is in the process of presenting the results of the OTDA project to a variety of audiences and professional conferences by oral and poster presentations. We are also preparing manuscripts for publication in peer-reviewed journals. Mary has had a lot of interest in the OTDA and had a number of visitors to the Mercy to be shown how the OTDA works in practice.

Part of our project was the development of the validated OTDA ready for scaling up to Victorian health services. This final phase of the project will include a sector consultation so that we can determine the strength of interest in the OTDA and what a ‘scaled-up’ OTDA will look like – e.g. a stand-alone app, an extension of ED software, part of a patient monitoring program. The sector consultation is planned for July and we intend to invite a much larger number of stakeholders than our stakeholder forum held in June 2017.

Conclusion

The BCV-funded OTDA project saw the OTDA successfully implemented into a general ED and a MAU. The implementation process was complex and required strong organisational leadership and a dedicated project officer. Critically, the OTDA was proven valid, with increased likelihood of hospital admission, IV cannulation in ED and blood test sent off in ED, with each more urgent triage category. For women who reported reduced or no fetal movements as part of their triage, higher triage category was significantly associated with admission to hospital. Overall, staff self-rated improved confidence and competence to undertake obstetric triage. Thank you.

References


