Preparing parents for discharge from hospital with their infant after complex cardiac surgery using the Congenital Heart Assessment Tool.
An online learning resource for health care professionals

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E-resource development - Acknowledgements

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Technology Enhanced Learning Unit, TEL Me More Seminar Video

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Aim

The aim of this session is to present an online learning resource developed within a portfolio of research around the Congenital Heart Assessment Tool (CHAT).
Background – Phase One

• CHAT, is an early warning tool for parents to use at home to monitor their infant following the first stage of surgery for complex Congenital Heart Disease (CHD)
• It was developed in 2012 and implemented within a feasibility Study (phase one) at one specialist centre during 2013-2015

• Gaskin K, Barron D and Daniels A (2016) Parents’ preparedness for their infants’ discharge following first-stage cardiac surgery: development of a parental early warning tool, *Cardiology in the Young*, 26(7):1414-1424

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Phase two

- To evaluate the CHAT in four children’s cardiac centres in the UK
- Health Improvement Project during 2017 (Smith et al, 2018), resulting in an updated version of the tool (CHAT2).

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**Ethics Approval:** University of Worcester Institute of Health & Society Ethics Committee
Evaluating an early warning tool
Setting the standard of safe care for infants with complex heart conditions at home

Overview
CHAT2 was developed for parents/caregivers of infants with complex congenital heart disease, supporting assessment and decision-making in the community setting. The key aim is to improve the safety, quality of care & standardize decision-making.

CHAT2 (Diagram 1)
CHAT2 uses a traffic light system: red (emergency), orange (seek advice) & green (continue usual care). There are 9 domains:
1. Activity of infant
2. Skin colour and warmth
3. Breathing
4. Oxygen saturations
5. Feeding and supplies
6. Parental concerns level
Parents/caregivers were assessed on their ability to use CHAT2 & received education within a Home Monitoring Programme (HMP) bundle. Parent/caregiver response to the parameters will be one of 3 levels: action, green, orange or red.

Parents/caregivers are taught to make a daily assessment of their infant or at any time their infant is not well (Goldschmidt 2013).

Community teams will use CHAT2 to support joint decision-making (Troyer 2016).

"With the training in hospital, I just thought this was what all mothers did who had babies who needed an operation. It came to me when I was at home with (baby) that I had to make these decisions on my own..."

"Parents of other discharged home"

The problem (Diagram 2)
These infants have a higher risk of mortality between first & second stage surgery, called "interstage 1" due to their altered circulation at this stage of their surgical pathway. Early parental recognition & escalation of changes in an infant's condition reduce mortality and morbidity.

The results (Table 1 & 2)
CHAT2 triggers correctly in all the scenarios. Feedback from groups & experts provided a cycle of improvement & real-time changes using a PDMA cycle. Parents/caregivers who used CHAT2 in the clinical setting within their HMP team found CHAT2 supported decision-making & signposting.

Next steps
• family focus groups & individual interviews
• development of a parent/caregiver assessment tool for capacity to partake in HMP
• development of a parent/caregiver educational package
• standardised care using CHAT2 role out to other centres
• app development (Wolverhampton University)

Lessons learnt
• collaborative learning and working
• the power of teamwork
• complexity of standardizing care bundles
• time expectations for collaborative work
Acknowledgements

**THF Project Lead:** Liz Smith, Lead Nurse, Cardiac Unit; Great Ormond Street Hospital for Children, London

**Principal Investigator for Clinical Simulation and Parent Workshops:** Dr Kerry Gaskin, Principal Lecturer, University of Worcester

**Participants Clinical Simulation Exercise:** – Amanda Daniels, Associate Lecturer; Ben Pickering, Mel Carpenter, Victoria Reynolds, Students Children’s Nursing, University of Worcester; Suzie Hutchinson, Chief Executive, Little Hearts Matter; Debra Rutter & Debbie Lawson, Cardiac Nurse Specialists, Children’s Cardiac Unit, Freeman Hospital, Newcastle upon Tyne

**THF Project Collaborators:** - Dr Jo Wray, Senior Research Fellow – Health Psychology; Dr Kate Brown, Consultant Intensivist, Great Ormond Street Hospital for Children, London; Justine Kidd & Kay Dyer, Cardiac Nurse Specialists, Cardiac Unit, Birmingham Children’s Hospital; Dr Anna Seale, Consultant Fetal Cardiologist, Mr David Barron, Consultant Cardiac Surgeon, Cardiac Unit, Birmingham Children’s Hospital; Collette Cochran & Gill Harte, Cardiac Nurse Specialists, Children’s Cardiac Unit, Southampton General Hospital
Evaluating an Early Warning Tool: setting the standard of safe care for infants with complex heart conditions at home.

The Aim
The aim of the collaborative improvement project is to implement in the clinical setting the CHAT 2 Early Warning Tool for infants with complex congenital heart disease home across 4 national cardiac children's centres. The tool is expected to be part of a bundle of care for a national home monitoring programme (HMP), including a training and education programme. The tool will support decision making by families and children’s community teams to improve safety, quality of care and standardize care provision.

Evaluation
- Organisation of key domains into mutually agreed visual formatted tool
- Focus group work with parents and stakeholders acceptability to families, understanding of the tool
- Trial of the tool using retrospective clinical record review
- Scenario based (table top) with stakeholders and clinical experts
- Correctly triggers with escalation plan in the clinical setting within local HMP bundle

Progress to date
- Standardisation & review of the HMP at each centre
- Review of tool & discussion against national guidelines
- Evaluation of tool across professional groups
- Clinical simulation scenario (Warneford) very positive event using telephone consultation & discharge preparation. Outcomes included training time & package for tool use, changes to the tool layout, how would it fail in the discharge bundle

Planned
- Focus & feedback work with parents - acceptability, design, training & education support plan, understanding of words used (Little Hearts Matters)
Phase three- Develop e-resource

The Congenital Heart Assessment Tool

Preparing parents for discharge from hospital with their infant after complex cardiac surgery

Funding: University of Worcester Learning, Teaching and Student Experience Project Fun 2017/18
Features

- Entirely online
- User friendly, accessible, flexible
- Video footage to support learning
- Audio and written format to support different learning styles
- Learn to assess six key symptoms using the CHAT2
- Activities: customise your own learning
- Resources section: guide to other learning resources
- Professional Development Certificate on completion
Demonstrate e-resource
Learning Outcomes

1. To enable health care professionals (HCP) looking after infants with complex congenital heart disease (CHD) to learn about the Congenital Heart Assessment Tool [version 2] (CHAT2) and to explore the underpinning evidence supporting its development.

2. To reflect upon aetiology, epidemiology and incidence of complex CHD; the anatomy and pathophysiology of complex CHD and the staged surgical approach to enhance own knowledge and understanding.

3. To enable HCPs to teach parents about the signs and symptoms of clinical deterioration they need to look out for in their infant, between stages one and two of surgery.
Learning Outcome 4

Enable HCPs to teach parents how to use the Congenital Heart Assessment Tool (CHAT2) to identify changes in their infant’s condition
Learning Outcome 5

Enable HCPs to use the Congenital Heart Assessment Tool (CHAT2) to support decision making about management strategies when contacted by parents.
Implementation of CHAT

Registering your interest

If you are the Lead Nurse or Lead Consultant for the Network (or Cardiac Unit) and are considering implementing CHAT as part of your discharge process for infants following
Before You Start

Find a pen and a notebook so that you can make notes and complete the activities. You will need to turn on the speakers on your device to listen to the audio and video clips. If you are in a public place viewing this on your phone or tablet you may like to use earphones! You will be able to stop and start this e-resource whenever you like and come back to it at a convenient time. You don't have to complete it all in one attempt.
Hypoplastic Left Heart Syndrome

Hypoplastic Left Heart Syndrome is a congenital heart condition (a problem that a baby is born with). Below is a description of the heart condition and possible treatments offered.
Develop an understanding of the CHAT, who is it for, what it does and why is it used?

Parents are taught using an early warning tool called CHAT, to assess their infant’s activity level, skin colour, breathing, circulation, feeding and weight and to decide actions based on the information in each of the three columns (green, amber and red). The CHAT is based on a traffic light system:

- **green (low risk). parents can ‘carry on as normal’**
Thank you

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