Developing a product to commercialisation
- from a clinician’s perspective

Dr Graham Tydeman
Consultant Obstetrician
NHS Fife
Me, in the genes?

- Father: Art / woodwork teacher
- Mother: Nurse / Headmistress
- 3 daughters
  - 2 studied product design
Problem solving
without any fuzzy front or rear ends

1. Define issues
2. Solutions
3. Modelling
4. Intellectual property
5. Funding
6. Commercial viability / agreements + market
7. R+D / Prototypes
8. CE marking
9. Sales / distribution
Problem solving
without any fuzzy front or rear ends

1. Define issues
2. Solutions
3. Modelling
4. Intellectual property
5. Funding
6. Commercial viability / agreements + market
7. R+D / Prototypes
8. CE marking
9. Sales / distribution
4 examples

• Ultrasound reporting/ archive

• Fetal heart model

• Tydeman Tube

• Simulation models:
  – Desperate Debra/ Amnio Abby/ Cervical Cerclage
Management Audit Digital Archive and Telemetry System

Chancellor launches pioneering scanning system at Forth Park

Published
17:08 Thursday 29 May 2003

FIFE is now at the forefront of maternity care after a state-of-the-art scanning system was unveiled at Forth Park, Kirkcaldy.

The new system, which took three years to develop, is the only one of its kind in the UK.

In a ground-breaking move, video and still pictures taken at the time of the pregnancy scan can be electronically updated onto the new integrated system.
Management Audit Digital Archive and Telemetry System

• No funding
• No preservation of IP
• No maintenance contract
• 2 companies involved with different agendas
• Parts of the system still used by 1/3\textsuperscript{rd} of O+G units in UK
3. Fetal heart model

Problem
• Visualisation of 3d structure from 2d images

Is it a common problem?
• yes

Is it a serious problem?
• Yes – serious congenital heart disease is missed 50% of time
3. Fetal heart model

Solution
• Only one considered – make a model

Intellectual property/ commercial viability/ funding/ market research?
• Largely ignored

Did it work? – yes and no
• Sold about 50 made about £500
• ‘sales’ video 45 000 YouTube hits
3. Tydeman Tube

Problem
• Impacted head at Caesarean Section

Is it a common problem?
• No data

Is it a serious problem?
• Yes – anecdotal reports of death/ injury
The Team

Prof

R+D

IP/ Commercial

Boss

Shed
3. Tydeman Tube

Funding
• After several false starts - success

Design
• Subcontract to commercial product design company

Testing
• Need a simulator
  – back to the shed!
  – more funding
3. Tydeman Tube

Research concerns/ Commercial agreement
• Who would be sponsor?
• Not binding

CE marking
• Vicious circle
• Tried and published
• New company – want finished product
• Setting up independent company to CE mark and manufacture
3. Tydeman Tube

10 yrs on
- Still going...
4. Desperate Debra
4. Desperate Debra

- Market research
- Funding
- Model
- IP considered
- Commercial agreement
- R+D and testing
- In production 2 yrs from concept
- Version 2 now being developed
NEW AR58 Desperate Debra® - Impacted Fetal Head Simulator

£3,950.00
Price excludes carriage and VAT

Developed in collaboration with Dr Graham Tydeman, Consultant in Obstetrics and Gynaecology at NHS Fife, Professor Andy Shennan - Professor of Obstetrics, Maternal and Fetal Research Unit, Guy's and St Thomas' Hospital and Annette Briley – Consultant Midwife, Clinical Trial Manager, Maternal and Fetal Research Unit, Guy's and St Thomas' Hospital, the Desperate Debra® simulator has been designed to facilitate the training and implementation of correct clinical procedures when confronted with impaction of the fetal head - a serious and potentially life threatening event.

Obstetrics has taken the lead in reducing the number of perinatal and neonatal complications by developing emergency drills for major events such as shoulder dystocia and breech delivery using simulators. Until now, however, no simulator has previously been available for training in dealing with an impacted fetal head.
Publications


3. **Experimental evaluation of a new device and estimation of forces applied to the impacted head at CS.** Tydeman G.S.J., Briley A., Sheenan A., Seed P. *Archives of Disease in Childhood: Fetal and Neonatal Edition*


Other projects

- Amnio Abby
- Cervical Cerclage simulator
- Others..
Summary

• Clinician lead Innovation can make a difference – keep going!

• Be sure its not just your problem

• Test variety of solutions

• Find a team