“Next steps’ in managing anxiety in a dental setting

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- The role of Engineering Design
- Exploring the Problem
- Looking at Solutions
- Reflections on what we have learnt

@DOT_Cambridge #ExploreCreateEvaluate

The Role of Engineering Design

What was...
What is...
What if...

HISTORY
SCIENCE
DESIGN

"Scientists investigate that which already is; Engineers create that which has never been."
- Albert Einstein

"Engineers operate at the interface between science and society..."
- Dean Gordon Brown, MIT

“A Genius in the Art of Living”

Healthcare Design Toolkit
The 3 Fundamental Questions of Design

1. What is the need?
2. How can the needs be met?
3. How well are the needs be met?

Dental decay is the most common chronic disease of childhood

Public Health England: Dental Aims for children 2016-2020

- Less General Anaesthesia
- Fewer Sleepless Nights
- Fewer Missed School/Work Days
- Less Pain
- Reduced Tooth Decay
- Reduction in gap for disadvantaged families

The Autistic Spectrum - Special Needs Dentistry

Listening to Parents: A Qualitative Look at the Dental and Oral Care Experiences of Children with Autism Spectrum Disorder

“He is in the dental chair and he’s gagging. He probably feels like he is being tortured. It’s scary... I just hate it so much that I even push it off, and then I feel negligent. So it is just this big vicious circle.”

Dental View

“Feeling of failure if you can’t carry out examination, but multiple introduction visits use up a lot of target time – unrealistic.”

Listening to Dentists and Parents

Parent View

“If you can do anything – give TMD. If you start thrashing (my) child into the room are pointless. What is this about?”
Do not repeat commands but allow time to process.

Dental View

Dentists have target based NHS earnings (units of dental activity). Getting things done quickly and efficiently is important to reach targets.

“Feeling of failure if you can’t carry out examination, but multiple introduction visits use up a lot of target time – unrealistic.”

Listening to Dentists and Carers

Carer View

“The trauma that my son and the dentist went through could have been avoided if they would have put him to sleep.”

Dental View

Brighton SN dentistry: general anaesthesia data (May 2014 to June 2016)
278 patients, 54 were on the autistic spectrum (19.4%)

Mum says that she will not cope with LA and will hit her mouth/face if feels different and the less people around her the better.

Pre-assessment Paediatric Nurse Nov 2016

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Parent View

"Sensory toys might be helpful... maybe a functional unit like something in the light or suction that could be useful to the visit but child would touch feel move an 'toy' - play but help."

Dental (CQC) View

"CQC (Care Quality Commission) inspections – cuddly toy not allowed as cross infection risk"

"I have no idea what the dentist does when I am sitting in that chair – I can't see inside my mouth"

An autistic adult reflecting on his experiences

The challenge

None of the strategies in use are completely effective in securing cooperation.

Behaviour techniques used for typically developing children with dental fear are often ineffective for children with autism

What’s it all about

Healthcare Design Toolkit

Pride
Beyond the mouth

Care System
Health System
Family
Person
Mouth

Stakeholder Map: All the people who ‘influence’ or are ‘affected’ by the success of the service

Patient Types

- A distinction is drawn between the underlying condition the patient has e.g. autism and the functional issues this influences. In this instance the focus is the functional impact as this is considered to be key to providing suitable provision

- Key functional issues that need addressing during a consultation/treatment:
  - Communication: Non-verbal & difficulty expressing fears
  - Anxiety: Leading to not attending, sitting in chair or complying with treatment
  - Sensory: Hyper-sensitivity to visual, auditory and tactile stimulus
  - Movement: Patient not sitting still or reaching out at equipment
  - Mouth: Not opening mouth wide enough for long enough and Bite risk

Patient Journey for First Appointment or Check-up

Determining the ‘best next step’

The ‘treatment’ loops
The foundations of an effective consultation

- Insight
- Time
- Flexibility
- Resources
- Creativity

Some initial ideas...

- Sofa Chair (bariatric chair)
- Preparation Toolkit
- Local Lighting
- Gamification

Next Steps...

1. Participatory Workshop with Patients & Parents
2. Prototype solutions

A new perspective

- Videos for Patients
- Videos for dentists & parents

The greatest gains are potentially outside of the clinical setting

Questions

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