

The Distraction of Virtual Reality

Using Virtual Reality Headsets in paediatric phlebotomy to decrease medical anxiety and improve collection quality

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Paediatric phlebotomy – stress response

- Children who are extremely anxious or upset at the time of venepuncture can elicit a stress response.
- This stress response can lead to:
 - Elevation of vW factor, F8 and neutrophil counts
 - Activated coagulation (shortened PT / APTT)
- This normal physiological response to stress can mask diseases such as haemophilia/vWD
- It can be misconstrued as diseases such as infection
- Reduction in stress levels at the time of venepuncture leads to:
 - More reliable results
 - Reduction in clotted samples / haemolysed samples
 - Re-collection events

Aim of Innovation

- Paediatric venepuncture can be traumatic for children, and is often undermanaged in the health care system.
- Extra psychological, physical and pharmacological resources are required to manage pain and anxiety in paediatric patients.
- Several techniques are implemented by phlebotomists to soothe and distract patients in preparation for venepuncture, with varying success.
 - Toys and wall art
 - Smart phones of care givers
 - Music therapist, Clown Doctors, “Captain Starlight”
- The use of the VR Headset is an additional tool to support children through the procedure.
 - Is interactive, 3 dimensional and stimulating.

Key Changes Implemented

- Phlebotomists will assess the patient on presentation and offer a number of distraction options to involve and empower the patient.
- Children ages 6+ who display extra anxiety are targeted to try the VR headset.
- Case 1 – Chad
 - First blood test!
 - Anxiety associated with hospital environment and needles
 - Used headset and reported to not notice needle
 - Good experience for Chad, decreases anxiety for subsequent visits.



Key Changes Implemented



- Case 2 – Liam
 - Regular blood tests for existing medical condition
 - Not typically overtly anxious, but appreciative of additional measures to make collection more comfortable
 - Reports “best blood test ever”.
 - Care giver expressed gratefulness for different strategies
- Case 3 – Patient “A”
 - Patient A is neurodiverse and struggles in the hospital environment.
 - Required blood collection – fled department twice and returned to car to avoid collection.
 - Discussed with patient using the VR headset.
 - Patient thought it was cool, and complied with collection.
 - Successful and stress free collection for this patient!

Outcomes So Far

- Positives:
 - Positive feedback from care givers, patients, families and hospital safety department
 - Increased compliance from patients who have used headset
 - Improved experience for children who are anxious and neurodiverse
- Negatives:
 - Headset in use is large and heavy, and is only suitable for larger children (6+ years of age)
 - Seeking funding to get “SmileyScope” which is smaller and lighter
 - “SmileyScope” also has targeted programs for a venepuncture experience
 - Can be time consuming to set up and calibrate before use, which presents a challenge due high workload periods
 - Model used requires reliable home WiFi to update software and download programs.

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Problem

Venepuncture can be a traumatic experience, particularly in the paediatric population

Need to increase and diversify our methods of increase compliance and satisfaction during collections, and be able to empower patients to make decisions.

Solution

VR Headsets have been added to suite of methods

Targeted at children 6+ with anxiety over procedure or healthcare environment

Offered for use in neurodiverse children

Results

Feedback from all parties has been positive

Need to explore option for smaller patients due to weight and size of current model



Distraction of Virtual Reality – A truly positive outcome

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