ANTICIPATING ERROR: ANALYSING BLOOD GLUCOSE MONITORS FOR POTENTIAL PATIENT USE ERRORS

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Introduction

Self-monitoring of blood glucose should provide support for patients that make errors in use.

Yet the potential for procedural errors during the SMBG process exists[1].

We apply Human-Computer Interaction methods to determine where use errors may occur.

Background

David Price[2] described a patient suffering from recurrent Hyperglycaemia and impending Ketoacidosis.

Glucose meter regularly displayed ‘LO’, indicating Hypoglycaemia. Insulin dosage was adjusted.

Patient's testing process was observed and the patient regularly failed to supply a sufficient blood sample.

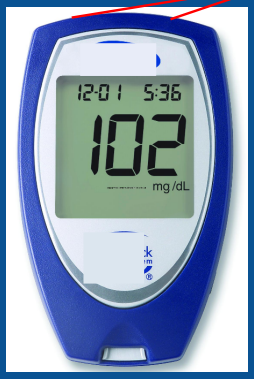
Meter should have provided a meaningful message to infrom patient.

Meter failed to recover from the patient's procedural error - providng an insufficient sample.

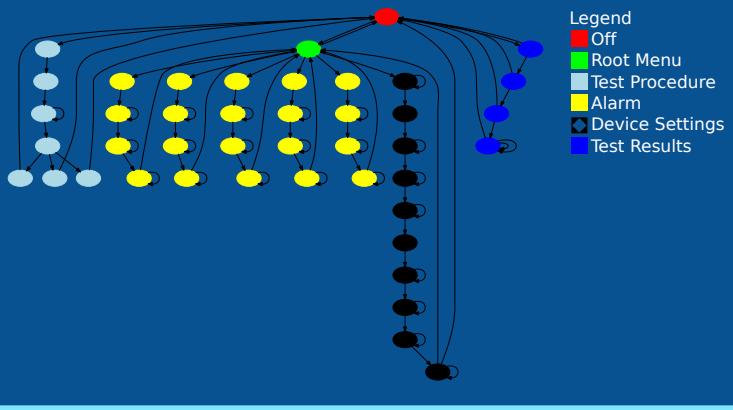
Results

Error Messages unclear

Hidden Buttons



Complicated Menu Trees



References

[1] Wendy A. Rogers, Amy L. Mykityshyn, Regan H. Campbell, and Arthur D. Fisk. Analysis of a ”simple” medical device. Ergonomics in Design, 9:6–14, Winter 2001.

[2] David Price. Case Study: Recurrent Diabetic Ketoacidosis Resulting From Spurious Hypoglycemia: A Deleterious Consequence of Inadequate Detection of Partial Strip Filling by a Glucose Monitoring System, Clinical Diabetes October 15, 2009 vol. 27 no. 4 164-166.

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