Does estimation of scar area improve the clinical utility of the Modified Vancouver Scar Scale?
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BACKGROUND
In 2006 the Burn Service of Western Australia at Royal Perth Hospital (RPH) added three new components to the modified Vancouver Scar Scale (mVSS), to improve its ability to describe the extent and heterogeneity of the scar.
1. mVSS score is categorised as 'good' (<5 points), 'moderate' (5-10 points) and 'bad' (>10 points).
2. 'Best' and 'worst' points within a scar or scars located on the upper limb, lower limb, head, chest and/or back are identified and rated using the mVSS.
3. Total %TBSA represented by the aforementioned mVSS categories is estimated.

Hypothesis: Estimation of TBSA of worst scar categorised by mVSS score is a valid and useful addition to scar assessment.

Validity of the measure will be demonstrated if a) area of worst scar changes significantly between one and 24 months post burn and b) burn severity predicts area of worst scar. Temporal change in quality of scar represented by highest mVSS rating will also be presented to further illustrate scar outcome.

RESULTS
The sample of 567 burn patients had 1865 scar assessments (average three per patient). The sample consisted of 69% males, 72% of whom had at least one skin graft. The median age was 35 years (IQR 14-88), median TBSA was 3% (IQR 0.5-65) and median LOS was 5 days (IQR 0-102).

PATIENTS AND METHODS
Burn patients managed between January 2006 and February 2013 with available scar data comprised the sample for analysis. Scar assessments are planned to be administered at one, three, six, 12 and 24 months post burn by trained Occupational Therapists. First the scar is assessed with the mVSS followed by estimation of the %TBSA of scar area that fall into the three mVSS categories described previously. Recent work by our group established that inter-rater reliability of estimating area of scar categorised as ‘good’ (0-4) or ‘bad’ (5-15) was ‘good’ to ‘excellent’ (ICC 0.63-0.80) due to the relative paucity of scars with a rating of 11 points or more (Gankande, Wood et al, 2013). Subsequently, for analysis, the categories of moderate and bad scar were combined. Rate scar outcome.

DISCUSSION AND CONCLUSION
The estimation of AWS (area of scar rated 5 points or more on the mVSS) improves significantly over time and can be predicted by measures of severity (TBSA, LOS). Therefore measurement of AWS has demonstrated a degree of criterion and construct validity in the RPH burn population.

Addition of estimation of AWS to the assessment of scar quality enhances clinical understanding of scar outcome post-burn. Different injury factors influence size and quality of scar: LOS appears to be the strongest overall predictor, with fewer days in hospital linked to improvement in both size and quality of scar; TBSA predicts scar size not quality; while conversely, surgery predicts quality but not size of scar. The data shows that burn scars demonstrate obvious reduction in area and improved appearance from six months after injury. AWS can be used to track patient progress and could potentially be used to inform the implementation of alternate treatment strategies at significant stages in the recovery process to optimise final outcome.

REFERENCES