

Appendix

This appendix was part of the submitted manuscript and has been peer reviewed. It is posted as supplied by the authors.

Appendix eFigure 1: Bland Altman plots of the Effect of Different Forms of Data Collection on APACHE II scores.

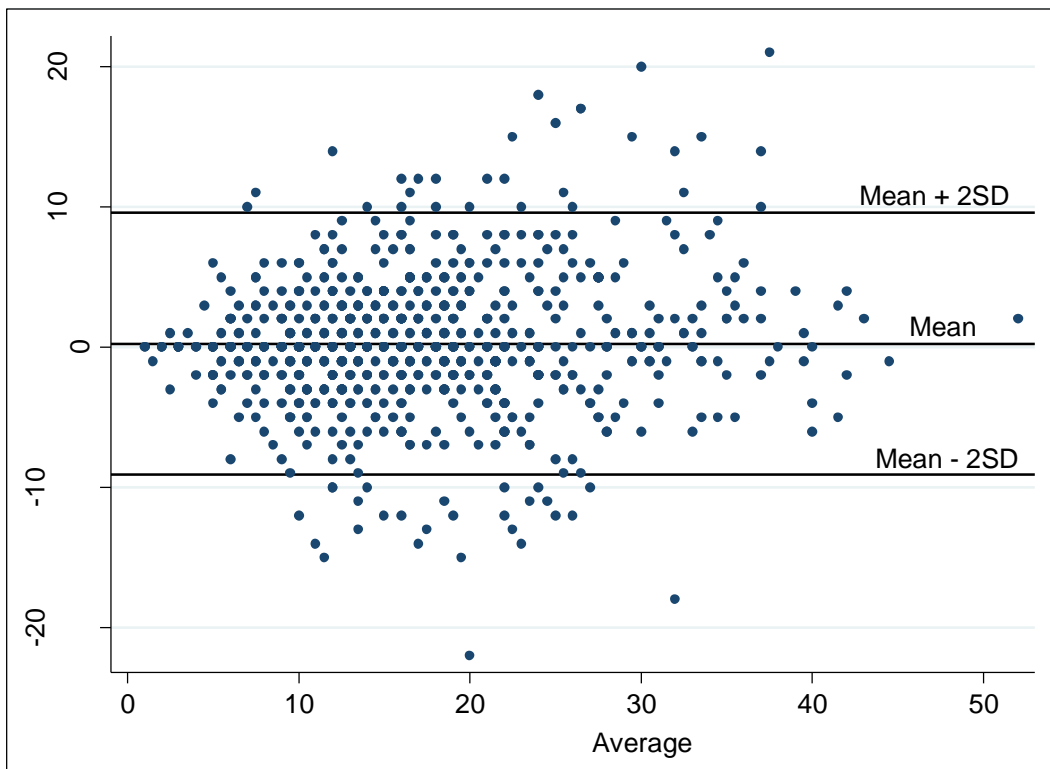


Figure 1a. Bland-Altman plot of difference against mean of audited and submitted APACHE II total scores (869 patient records from 43 ICUs)

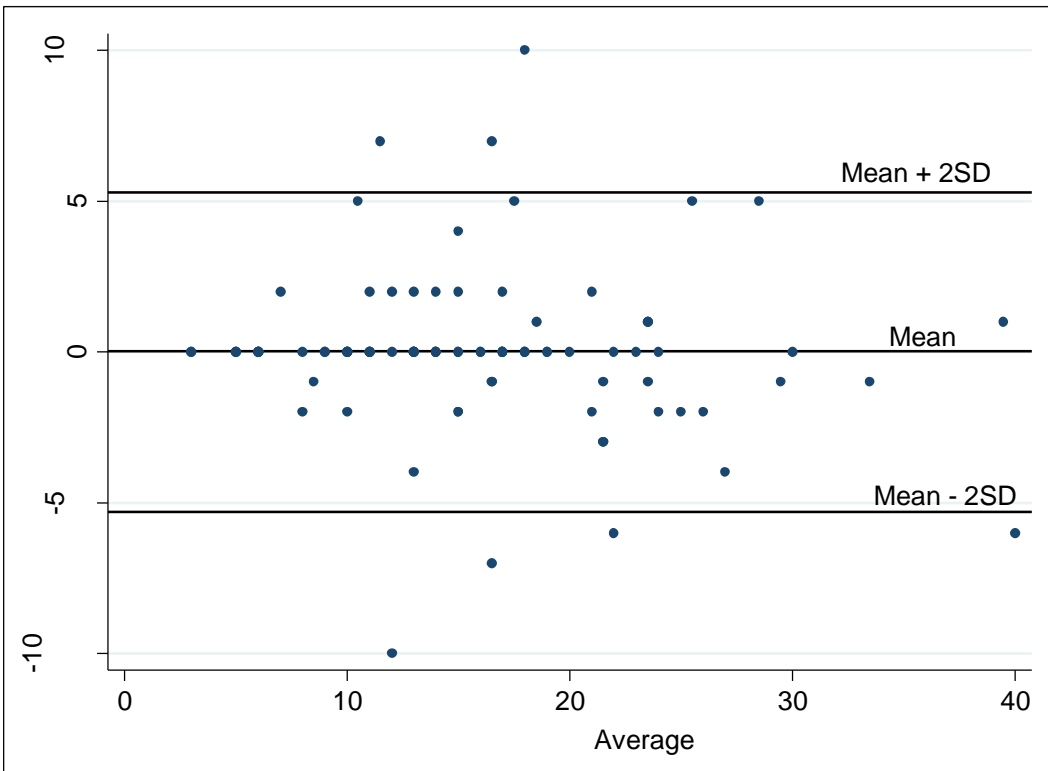


Figure 1b. Bland-Altman plot of difference against mean of audited and submitted APACHE II total scores in ICUs with trained dedicated data collectors (94 patient records)

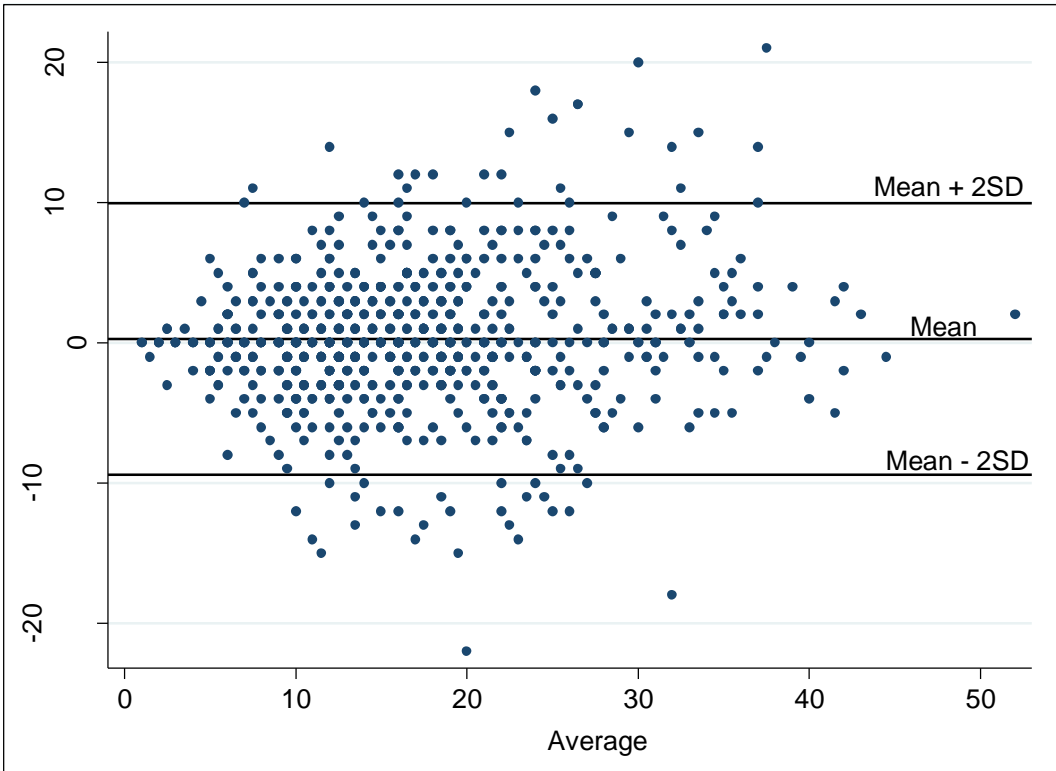


Figure 1c. Bland-Altman plot of difference against mean of audited and submitted APACHE II total scores in ICUs without trained dedicated data collectors (775 patient records)

Appendix eTable 1.

Levels of agreement between independently audited values and submitted APACHE II sub-score values obtained during audits of data quality (869 patient records from 43 ICUs)

Variable	Original score Mean (SD)	Audited score Mean (SD)	Mean difference (95% Confidence Interval)
Age score	3.424 (2.27)	3.422 (2.27)	0.002 (-0.002 to 0.007)
Temperature score	0.63 (0.82)	0.66 (0.78)	-0.03 (-0.06 to 0.01)
HR score	1.71 (1.10)	1.81 (1.07)	-0.10 (-0.16 to -0.05)
RR score	0.92 (1.01)	0.98 (0.99)	-0.06 (-0.11 to -0.01)
Sodium score	0.13 (0.55)	0.12 (0.51)	0.01 (-0.004 to 0.034)
Potassium score	0.375 (0.78)	0.361 (0.77)	0.014 (-0.02 to 0.048)
Creatinine score	1.22 (1.95)	1.11 (1.83)	0.11 (0.05 to 0.18)
Haematocrit score	0.85 (1.07)	0.83 (1.04)	0.02 (-0.03 to 0.07)
WCC score	0.556 (0.88)	0.558 (0.89)	-0.002 (-0.035 to 0.03)
MAP score	1.53 (1.13)	1.63 (1.10)	-0.10 (-0.17 to -0.04)
Oxygen score	1.02 (1.37)	1.25 (1.47)	-0.23 (-0.30 to -0.16)
pH score	1.08 (1.32)	0.99 (1.31)	0.09 (0.04 to 0.14)
GCS score	2.24 (4.01)	2.35 (4.10)	-0.11 (-0.31 to 0.09)
Chronic health score	1.38 (2.15)	0.77 (1.75)	0.61 (0.49 to 0.74)
Total score	17.05 (8.57)	16.81 (8.10)	0.24 (-0.07 to 0.55)

HR: Heart Rate; RR: Respiratory rate; WCC: White Blood Cell Count; MAP: Mean Arterial Blood Pressure; GCS: Glasgow Coma Score

Appendix eTable 2: Time trends in Outlier reports*

Year	Number of Eligible Admissions	Number of sites	Outlier Audit Reports	Potential New Outliers
2014	136338	151	4	2
2013	129153	151	7	5
2012	119687	143	11	8
2011	117831	145	5	2
2010	114146	146	9	9
2009	103946	139	1	1
Totals	721101		37	27

*This excludes admissions without a calculated APACHE III risk of death, repeated analyses and external requests for analysis

Appendix eTable 3: Differential risk of death with differing casemix for APACHE III. Based on Data from all ANZ ICUs in APD (2013 & 2014) with APACHE III exclusions applied.

	Neurological Diagnoses (includes traumatic brain injury)	Cardiac Surgery (CAGS & valves only)	All other Cases
Number of cases	37,249	34,761	192,607
Predicted mortality from APACHE III	14.9%	4.4%	15.1%
Observed mortality	10.4%	1.6%	9.4%
Ratio of Observed to Expected (SMR)	0.70	0.37	0.62