Appendix A

STARD checklist for reporting of studies of diagnostic accuracy

(version January 2003)

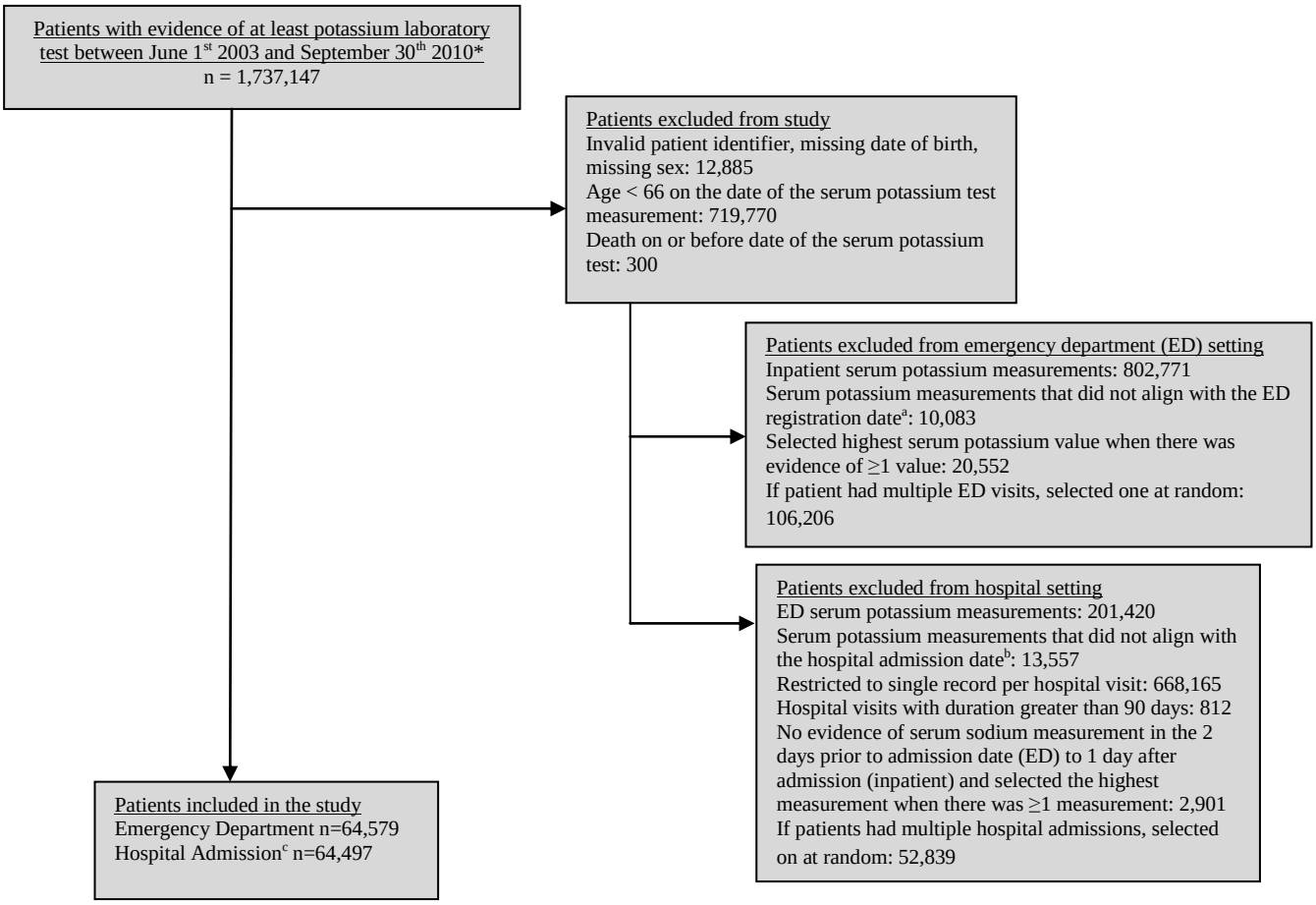
Section and Topic	Item #		On page #
TITLE/ABSTRACT/ KEYWORDS	1	Identify the article as a study of diagnostic accuracy (recommend MeSH heading 'sensitivity and specificity').	Abstract
INTRODUCTION	2	State the research questions or study aims, such as estimating diagnostic accuracy or comparing accuracy between tests or across participant groups.	Introduction
METHODS			
Participants	3	The study population: The inclusion and exclusion criteria, setting and locations where data were collected.	Methods – Participants; Appendix C
	4	Participant recruitment: Was recruitment based on presenting symptoms, results from previous tests, or the fact that the participants had received the index tests or the reference standard?	Methods – Participants
	5	Participant sampling: Was the study population a consecutive series of participants defined by the selection criteria in item 3 and 4? If not, specify how participants were further selected.	Methods – Participants; Appendix C
	6	Data collection: Was data collection planned before the index test and reference standard were performed (prospective study) or after (retrospective study)?	Methods – Study design
Test methods	7	The reference standard and its rationale.	Methods
	8	Technical specifications of material and methods involved including how and when measurements were taken, and/or cite references for index tests and reference standard.	Methods – Potassium laboratory value
	9	Definition of and rationale for the units, cut-offs and/or categories of the results of the index tests and the reference standard.	Methods – Potassium laboratory value
	10	The number, training and expertise of the persons executing and reading the index tests and the reference standard.	Methods – Administrative database codes
	11	Whether or not the readers of the index tests and reference standard were blind (masked) to the results of the other test and describe any other clinical information available to the readers.	n/a
Statistical methods	12	Methods for calculating or comparing measures of diagnostic accuracy, and the statistical methods used to quantify uncertainty (e.g. 95% confidence intervals).	Methods – Data analysis; Appendix A
	13	Methods for calculating test reproducibility, if done.	n/a
RESULTS			
Participants	14	When study was performed, including beginning and end dates of recruitment.	Methods
	15	Clinical and demographic characteristics of the study population (at least information on age, gender, spectrum of presenting symptoms).	Results; Table 1
	16	The number of participants satisfying the criteria for inclusion who did or did not undergo the index tests and/or the reference standard; describe why participants failed to undergo either test (a flow diagram is strongly recommended).	Results; Table 1; Appendix C
Test results	17	Time-interval between the index tests and the reference standard, and any treatment administered in between.	Table 1 Footnote; Appendix C
	18	Distribution of severity of disease (define criteria) in those with the target condition; other diagnoses in participants without the target condition.	Results; Tables 2,3,4
	19	A cross tabulation of the results of the index tests (including indeterminate and missing results) by the results of the reference standard; for continuous results, the distribution of the test results by the results of the reference standard.	Tables 2,3,4
	20	Any adverse events from performing the index tests or the reference standard.	n/a
Estimates	21	Estimates of diagnostic accuracy and measures of statistical uncertainty (e.g. 95% confidence intervals).	Results; Tables 2,3,4
	22	How indeterminate results, missing data and outliers of the index tests were handled.	n/a
	23	Estimates of variability of diagnostic accuracy between subgroups of participants, readers or centers, if done.	n/a
	24	Estimates of test reproducibility, if done.	n/a
DISCUSSION	25	Discuss the clinical applicability of the study findings.	Discussion

Appendix B

		Reference Standard: **Hyperkalemia** defined by a **potassium laboratory value >5.5mmol/L**	
		> 5.5 mmol/L	≤ 5.5 mmol/L
Hyperkalemia defined by **ICD-10 Code E87.5**	Code Positive	A	B
	Code Negative	C	D

Sensitivity=a/(a+c): the proportion of patients with serum potassium >5.5 mmol/L who are code E87.5 positive
Specificity=d/(b+d): the proportion of patients with serum potassium ≤5.5 mmol/L who are code E87.5 negative
Positive predictive value=a/(a+b): proportion of patients who are code E87.5 positive with serum potassium >5.5 mmol/L
Negative predictive value=d/(c+d): proportion of patients who are code E87.5 negative with serum potassium ≤5.5 mmol/L

Appendix C



*serum potassium measurements that were <0.5 mmol/L and >14 mmol/L were not considered as these were deemed data entry errors (occurred < 1.0% of the time).

[a] date of serum potassium measurement must be on the day of or 1 day after an emergency department registration date.

[b] date of serum potassium measurement must be between a hospital admission date and discharge date, including date of admission and discharge.

[c] patients were included in this cohort irrespective of hospital disposition (i.e. patients may have presented to an emergency department prior to their hospital admission or may have been directly admitted to hospital)

Appendix D – Figure Caption

Change in serum potassium values among patients who had baseline pre-hospital encounter serum potassium result. Patients who were code positive had evidence of the code in the 'all diagnoses' format. Patients who were code negative had no such code. For both presentation to an emergency department, and at hospital admission, patients who were code positive for hyperkalemia had a significantly larger change in their serum potassium value (from baseline) than patients who were code negative. The boxes represent the interquartile range (50% of the values). The line across the box indicates the median. The star indicates the mean. The whiskers extend to the 95^{th} and 5^{th} percentile.