

# Evaluation Of An Automatic Referral System For Inpatients With Hyponatraemia

## Prompt Referral Leads To Active Intervention

J Mannar Mannan , M Joshi, B Whitelaw , B Jafar-Mohammedi , J Gilbert , S J B Aylwin  
 Endocrinology- King's College Hospital, London , United Kingdom  
[simonaylwin@nhs.net](mailto:simonaylwin@nhs.net)

### Introduction

Inpatients with hyponatraemia have a high mortality and longer length of stay. We instituted a system of automatic referral to the endocrinology team where any inpatient with a serum  $[Na^+] \leq 125$ mmol/L was referred automatically from their biochemical results.

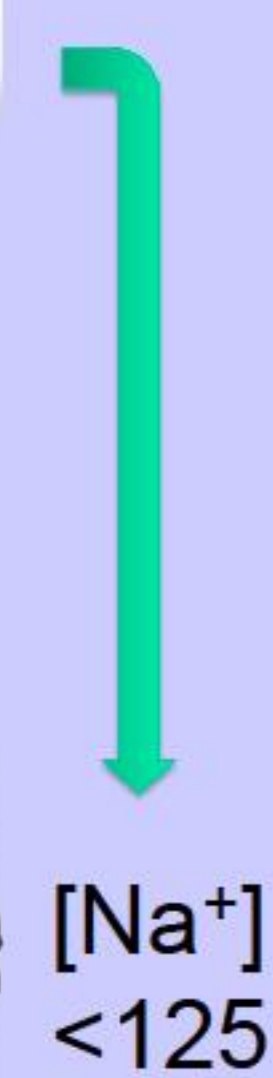
### Aim

We evaluated the diagnosis, management and outcome of the patients referred with hyponatraemia via automated system over 6 months.

### What we did...

- Prospective data
- Data collected: Demographics, serum sodium levels at point of referral and at discharge, Length of stay
- Hyponatremia work-up (paired osmolalities, urinary electrolytes, cortisol status, Thyroid function test )
- Patient categories based on volume status and endocrine diagnosis
- Treatment given: Fluid restriction, Normal saline , Hypertonic (1.8% saline)+/-high dose furosemide, Tolvaptan

### Automate the system      Generate the data



In-patient stages of sNa evaluation	Median (Range)
Referral serum sodium, mmol/L	121 (111-126)
Discharge serum sodium, mmol/L	135 (116-144)
Endocrine input	56/61 (91.8%)
Average days for sNa to reach $\geq 130$ mmol/L	5 (1-12)
No of patients sNa $\geq 130$ mmol/L in percentage	62.3 (38/61)

#### Initial assessment

Hypervolaemia	26%
Hypovolaemia	22%
Euvolaemia	51%

### What we found...

- All patients with  $[Na^+] < 125$  mmol/L alerted to endocrine team
- Experience of first 6 months
- 61 referred, 56 actively managed
- 'True' low  $[Na^+]$  in 54/56
- Cortisol status determined 81.5% ;TFT in 89%
- Correction of sodium ( $[Na^+] \geq 130$  mmol/L) was achieved in 64.8% after a mean of 5 days.

SIADH causes	N (n=25)	Treatment modalities	% of patients (n=56)
Idiopathic	13	Normal saline (0.9%)	66.2
Drug induced	5	Fluid restriction	52.3
HIV	1	Hypertonic saline (1.8%)	29.2
TBI	1	Furosemide + hypertonic saline (1.8%)	12.3
Cancer related	5	Tolvaptan	10.8

Length of stay (days)	29.6 days
Readmission rate	24.6%
Mortality rate	16.9%

### OUTCOME

Automatic referral to a specialist team from the laboratory was appropriate in  $>90\%$  and led to a prompt diagnostic evaluation and active intervention.