

# Emergency Oxygen use in UK Hospitals

## BTS HOSPITAL OXYGEN AUDITS 2008- 2011

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### **Acknowledgements:**

*Tony Davison, Lisa Ward, Rachel Smith, Norma Linaker,  
Christine Bucknall, Sally Welham, Chris Routh, Kerry Reid  
Oxygen Champions and colleagues at 156 hospitals*



# • BTS Emergency Oxygen Audits

Audit 1	July-Sept 2008	<i>Before Guideline launch in October 2008</i>
Audit 2	November 2009	
Audit 3	Oct-November 2010	
Audit 4	Aug-November 2011	

- Oxygen champions conducted audits
- Methodology- BTS online Audit tool



# Overview of results 2008-2011

Year	2008	2009	2010	2011
Hospitals	99	47	90	<b>156</b>
Wards	712	300	1,026	<b>1919</b>
Patients	14,830	7,113	22,017	<b>41,009</b>
Percent on Oxygen	17.5%	18.4%	15.5%	<b>13.7%</b>

*\*Definition of "on oxygen" in 2008-09 included patients with a prescription who were not on oxygen at the time of audit*



# Prescription of oxygen

32% of patients who were using oxygen had some sort of written order for oxygen use in 2008

69% in 2009 (47 Trusts)

56% in 2010 (90 Trusts)

48% in 2011 (156 Trusts)

*?? Effect of selection bias in earlier audits*



# Prescription of oxygen 2011

## 5628 patients on oxygen

- 43% prescription with target range \*
- 5% other written order without target range
- 52% on oxygen but no written order

\*23% range 94-98% 15% range 88-92% 5% other range

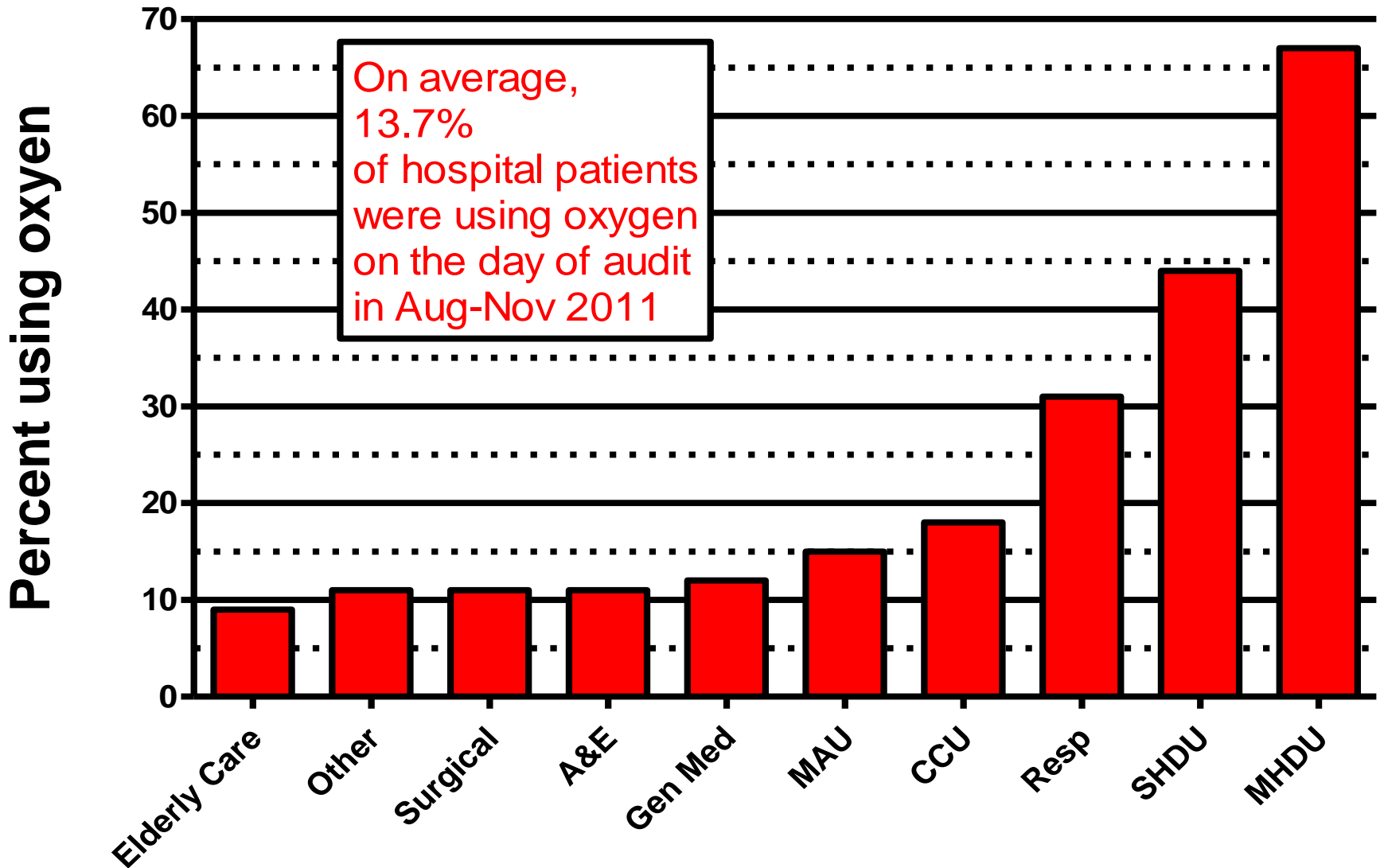


# Oxygen prescribing 2008-2011

Year	2008	2009	2010	2011
Percent On oxygen	17.5%	18.4%	15.5%	<b>13.7%</b>
Target Range	10%	40%	41%	<b>43%</b>
No Written Order	<b>68%</b>	<b>31%</b>	<b>44%</b>	<b>52%</b>
Percent of all hospital patients on oxygen with no written order	<b>11.9%</b>	<b>5.7%</b>	<b>6.8%</b>	<b>7.1%</b>

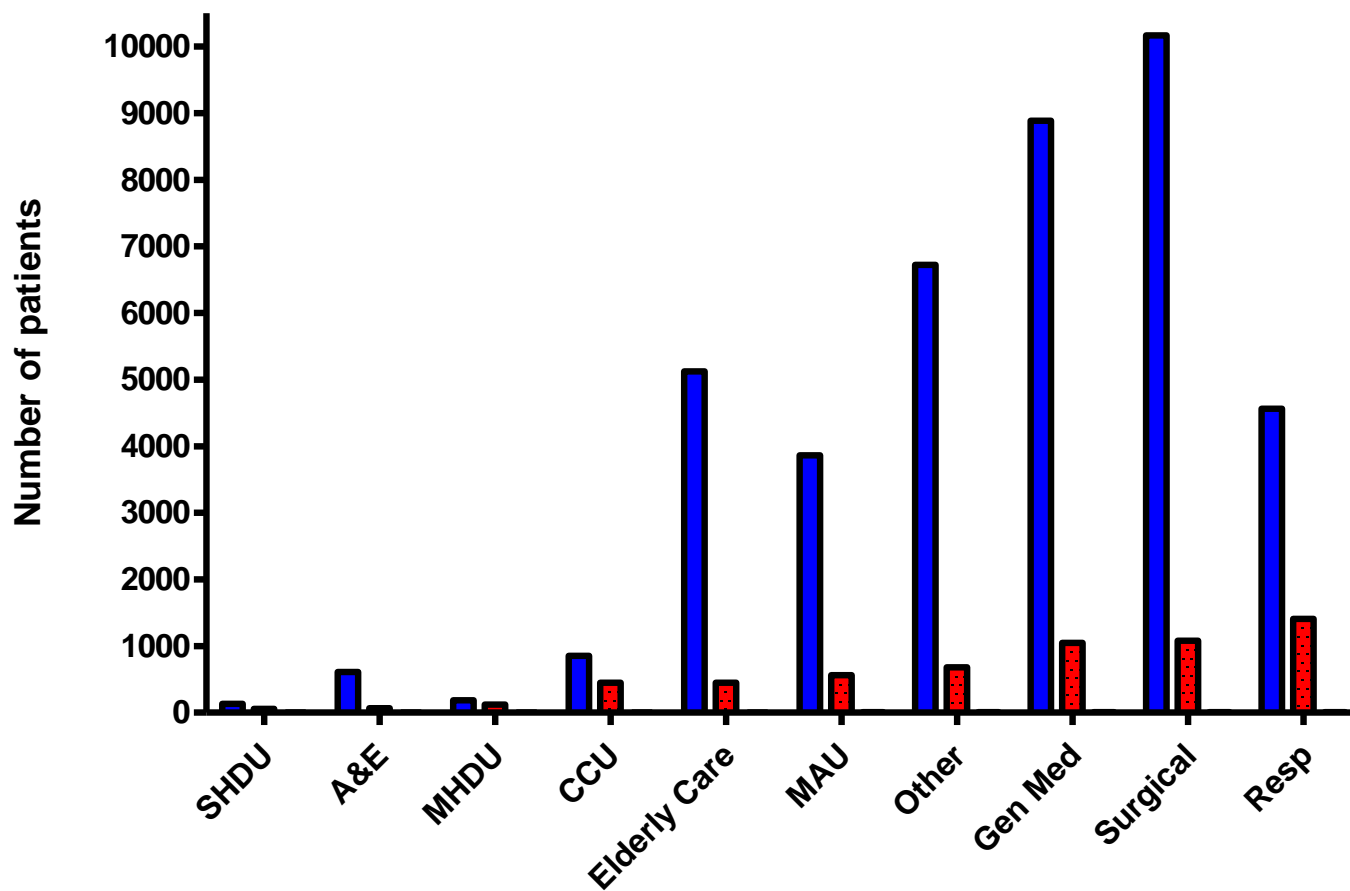


# PERCENT OF PATIENTS USING OXYGEN ON EACH TYPE OF WARD

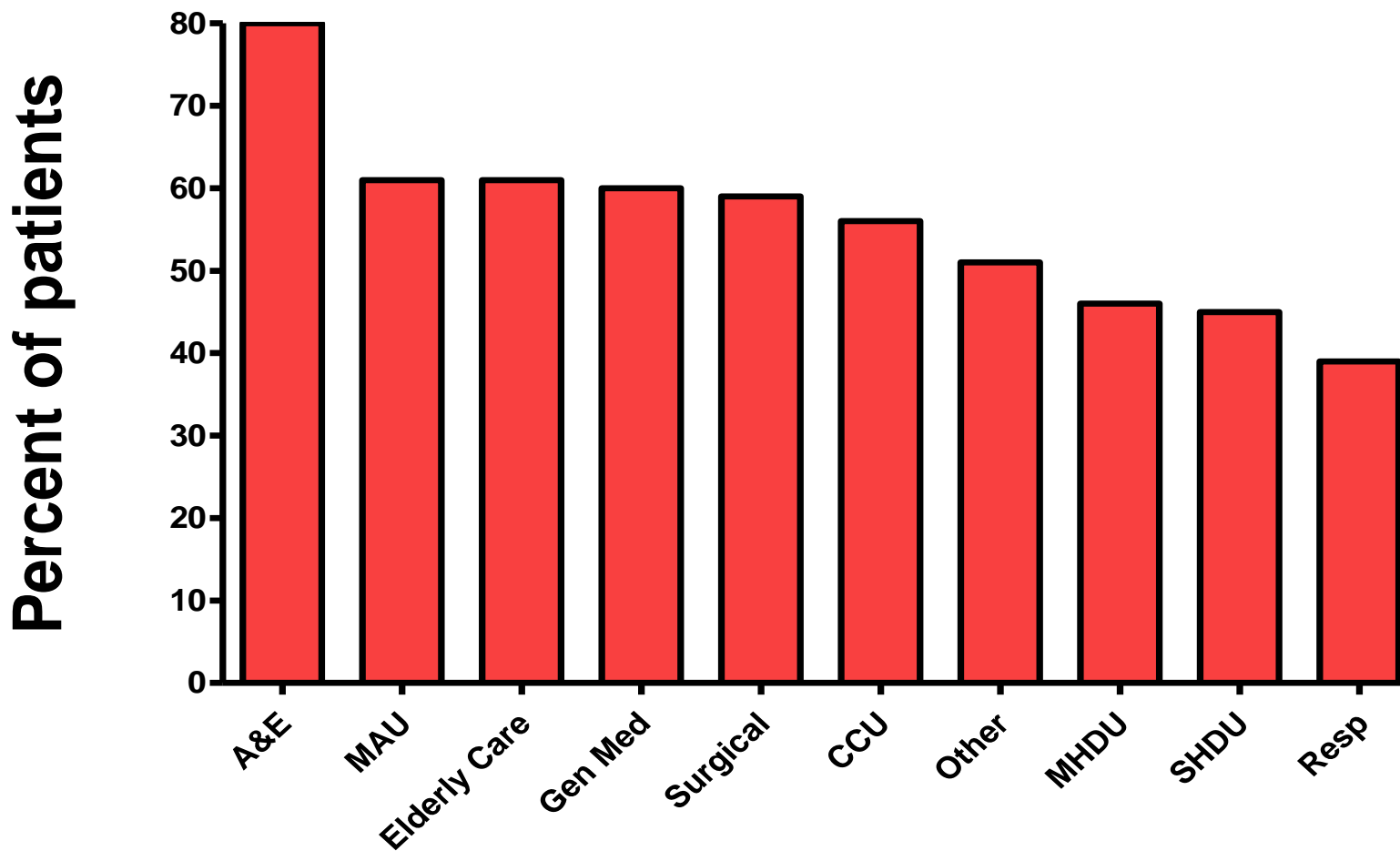


## NUMBER OF PATIENTS AND NUMBER USING OXYGEN

**Blue Bars:** Total number of patients on each type of ward  
**Red Bars:** Number of patients using oxygen in each type of ward



# PERCENT OF PATIENTS WITH NO PRESCRIPTION FOR OXYGEN (LISTED ACCORDING TO WARD OR SPECIALTY TYPE)



# Drug rounds & Observation Rounds

Year	2008	2009	2010	2011
Percent of drug rounds on which oxygen was signed for on the drug chart	5%	27 %	16 %	<b>20 %</b>
Percent of expected observation rounds with oximetry	94 %	93 %	99 %	<b>100 %</b>



# Observations Rounds for 2674 patients on Oxygen with a Target Range 2011

- 67% of patients within the target range
- 33% of patients outside the target range

	<b>Below Target Range</b>	<b>Above Target Range</b>
<b>By 1%</b>	4%	6%
<b>By 2%</b>	3%	6%
<b>By &gt;2%</b>	<b>3%</b>	<b>11%*</b>
<b>Total</b>	10%	23%
	Below target range	Above target range

*\*It is not possible to be more than 2% above target range if the patient's target range is 94-98%. Therefore, all patients who are more than 2% above target must be at risk of hypercapnic respiratory failure.*





# Individual Hospital Feedback All Wards

## British Thoracic Society

### Emergency Oxygen Audit 2011 Analysis

Salford Royal Hospital v All Institutions  
Emergency Oxygen Audit 15 August - 1 November 2011 (National Audit period)  
Ward Type - All Wards

#### Submissions & Institutions

Name	Institutions	Submissions
Other Institutions	155	1 884
Salford Royal Hospital	1	35
Total	156	1 919

#### Number of patients using oxygen in this hospital and nationally

Salford Royal Hospital			National Data		
Number of patients	579		Number of patients	41109	
Number of patients on oxygen	63	10.9%	Number of patients on oxygen	5628	13.7%

#### Number of patients in ward on O2 who have various forms of O2 prescription

Salford Royal Hospital			National Data		
Number of patients using oxygen with a prescription with a target range 94-98%	46	73.0%	Number of patients using oxygen with a prescription with a target range 94-98%	1324	23.5%
Number of patients using oxygen with a prescription with target range 88-92%	6	9.5%	Number of patients using oxygen with a prescription with target range 88-92%	842	15.0%
Number of patients using oxygen with prescription with other target range	1	1.6%	Number of patients using oxygen with prescription with other target range	282	5.0%
Number of patients using oxygen by other written order which is easily accessible by the bedside or in the prescription folder	4	6.3%	Number of patients using oxygen by other written order which is easily accessible by the bedside or in the prescription folder	269	4.8%
Number of patients currently using oxygen with no prescription or bedside order.	6	9.5%	Number of patients currently using oxygen with no prescription or bedside order.	2911	51.7%

Proportion of drug rounds where O2 is signed for





# Individual Hospital Feedback Respiratory Wards

British Thoracic Society

Emergency Oxygen Audit 2011 Analysis

Salford Royal Hospital v All Institutions  
Emergency Oxygen Audit 15 August - 1 November 2011 (National Audit period)  
Ward Type - Respiratory

## Submissions & Institutions

Name	Institutions	Submissions
Other Institutions	127	188
Salford Royal Hospital	1	1
Total	128	189

## Number of patients using oxygen in this hospital and nationally

Salford Royal Hospital			National Data		
Number of patients	24		Number of patients	4566	
Number of patients on oxygen	4	16.7%	Number of patients on oxygen	1408	30.8%

## Number of patients in ward on O2 who have various forms of O2 prescription

Salford Royal Hospital			National Data		
Number of patients using oxygen with a prescription with a target range 94-98%	1	25.0%	Number of patients using oxygen with a prescription with a target range 94-98%	249	19.2%
Number of patients using oxygen with a prescription with target range 88-92%	1	25.0%	Number of patients using oxygen with a prescription with target range 88-92%	394	30.3%
Number of patients using oxygen with prescription with other target range	1	25.0%	Number of patients using oxygen with prescription with other target range	103	7.9%
Number of patients using oxygen by other written order which is easily accessible by the bedside or in the prescription folder	0	0.0%	Number of patients using oxygen by other written order which is easily accessible by the bedside or in the prescription folder	52	4.0%
Number of patients currently using oxygen with no prescription or bedside order.	1	25.0%	Number of patients currently using oxygen with no prescription or bedside order.	502	38.6%

Proportion of drug rounds where O2 is signed for



# Implementation Audits

<b>Year</b>	<b>2009</b> Feb n=72	<b>2009</b> Nov n=61	<b>2010</b> n=51	<b>2011</b> N=127
<b>Oxygen Policy Implemented</b>	6%	21%	37%	<b>89%</b>
<b>Printed Oxygen Prescription</b>	9%	28%	51%	<b>72%</b>
<b>O2 on Monitoring Chart</b>	7%	34%	33%	<b>58%</b>
<b>Nurse Training Implemented</b>	7%	13%	18%	<b>31%</b>
<b>Doctor training implemented</b>	4%	10%	11%	<b>31%</b>



Does your hospital have a policy of setting a target range for all patients on admission to hospital to guide oxygen therapy if an emergency occurs?

Yes

No

60 Hospitals  
(49%)

63 Hospitals  
(51%)



# Electronic Prescribing in 2011

- 9 Hospitals full Electronic Prescribing (8%)
- 8 Partial Electronic Prescribing (7%)
- 103 Paper Prescribing only (86%)



# Summary

- Things are getting better—but slowly
- There are institutional barriers to modernisation of clinical practice
- Training of health care professionals is the greatest challenge

BTS Oxygen Audits are supported by NCAAG and included in Trust Quality Accounts

