



Debate: Patients with Epidural Analgesia should not be nursed on General Wards

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York Teaching Hospital

700 bed acute Hospital - merged with Scarborough Hospital

Serves a population of 500,000 in North Yorkshire

Acute Pain service est.1989





Introduction

Little evidence exists describing the optimum place to nurse Postoperative Thoracic Epidurals.

Clinical evidence from 26 years of continuous CPD audit of Epidural Analgesia from the York Acute Pain service.



Development of the APT in York

1989 Introduction of a 5 day acute pain service
– Epidurals and PCA's to the wards.

1995 – 6 day service

2000 – 7 day service

2006 – Diamorphine/Bupivacaine mix to
Fentanyl/Bupivacaine mix

Nurse led service with Anaesthetic support out
of hours

CPD continuous audit throughout the process



AAGBI 2010

Best Practice in the Management of Epidural Analgesia in the Hospital Setting

Recommendations..

- 1) Patient selection and consent
- 2) Designated personnel and MDT APT
- 3) Standardised equipment
- 4) Standardised drugs
- 5) Agreed Patient Monitoring
- 6) Documentation
- 7) Clear guidelines and protocols
- 8) Audit
- 9) Education



Audit of Epidural Analgesia

Audit began at inception of the service.

10, 15, 20 and 26 years

3 Months data collected as a snap shot and reports produced

1999, 2004, 2009, 2015

APRIL - JUNE in the above years

- Individualised Anaesthetist's feedback
- Led to changes in practice

Source of Data:

- Epidural charts
- Acute pain round information
- PACU CD register
- CPD Data from 2016 optical mark reader prior to this

Auditing and actively managing Epidurals



Epidural Audit Information collected

Number of patients

Demographic data (age, ASA, ward)

Pain Scores

Manipulation of the Epidural

Duration of treatment

Frequency of observations

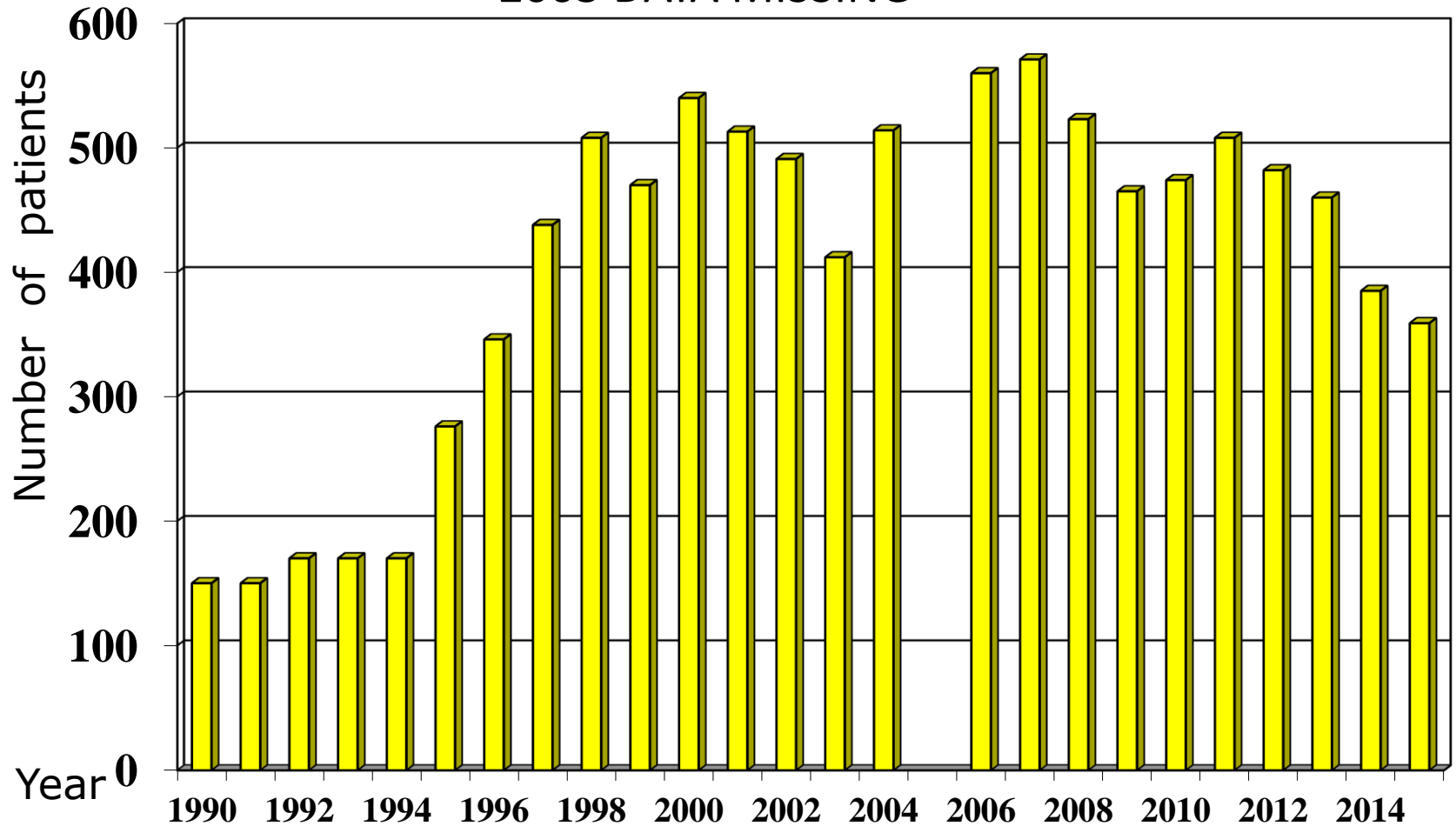
Frequency of out of hours Anaesthetic input

Complications:


- Hypotension
- Emesis
- Itch
- Sedation
- Neurological Complications
- Respiratory Depression
- Motor Block

Number of Patients **EIA since 1989**

2005 DATA MISSING



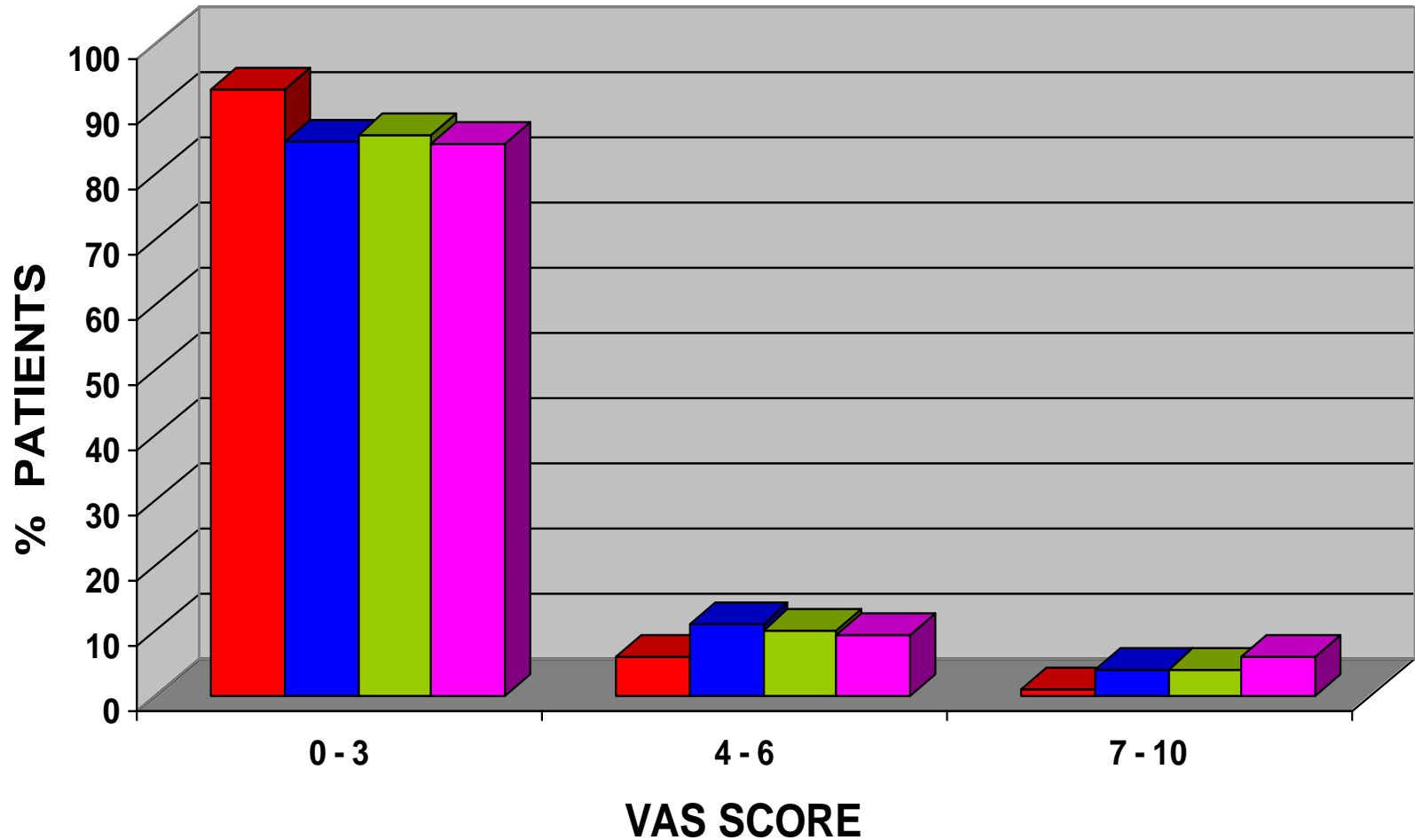
YEAR	2004	2009	2015
Number of patients reviewed	114	96	85
Average age of patients	67	65	68.3
ASA score 3 or above	43%	44%	37%



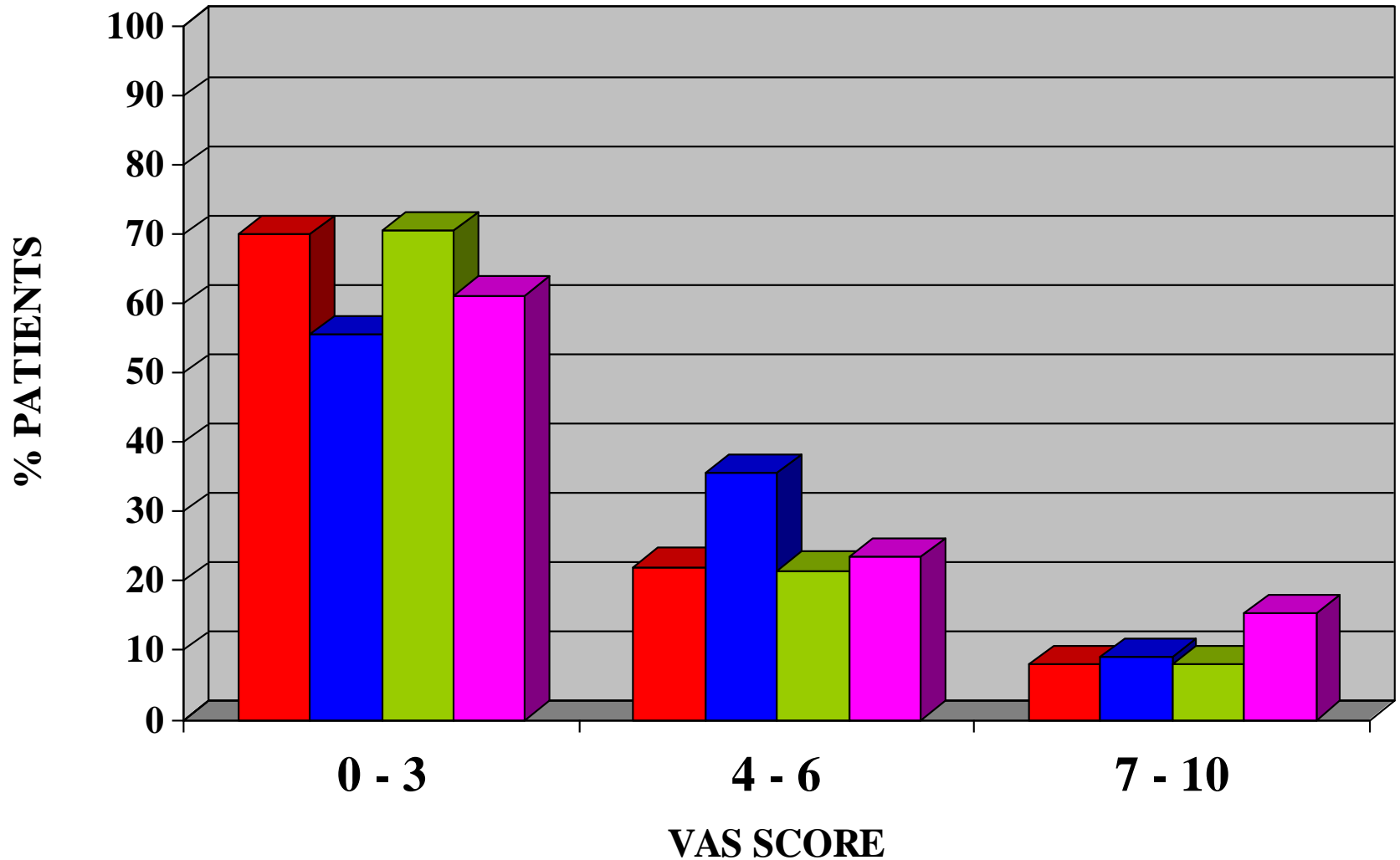
Epidurals cannot be nursed on a
general ward because...


Pain is not adequately controlled with an
Epidural.

Pain Score NRS (Rest) @ 24 Hours



Pain Score NRS (Movement) @ 24 Hours

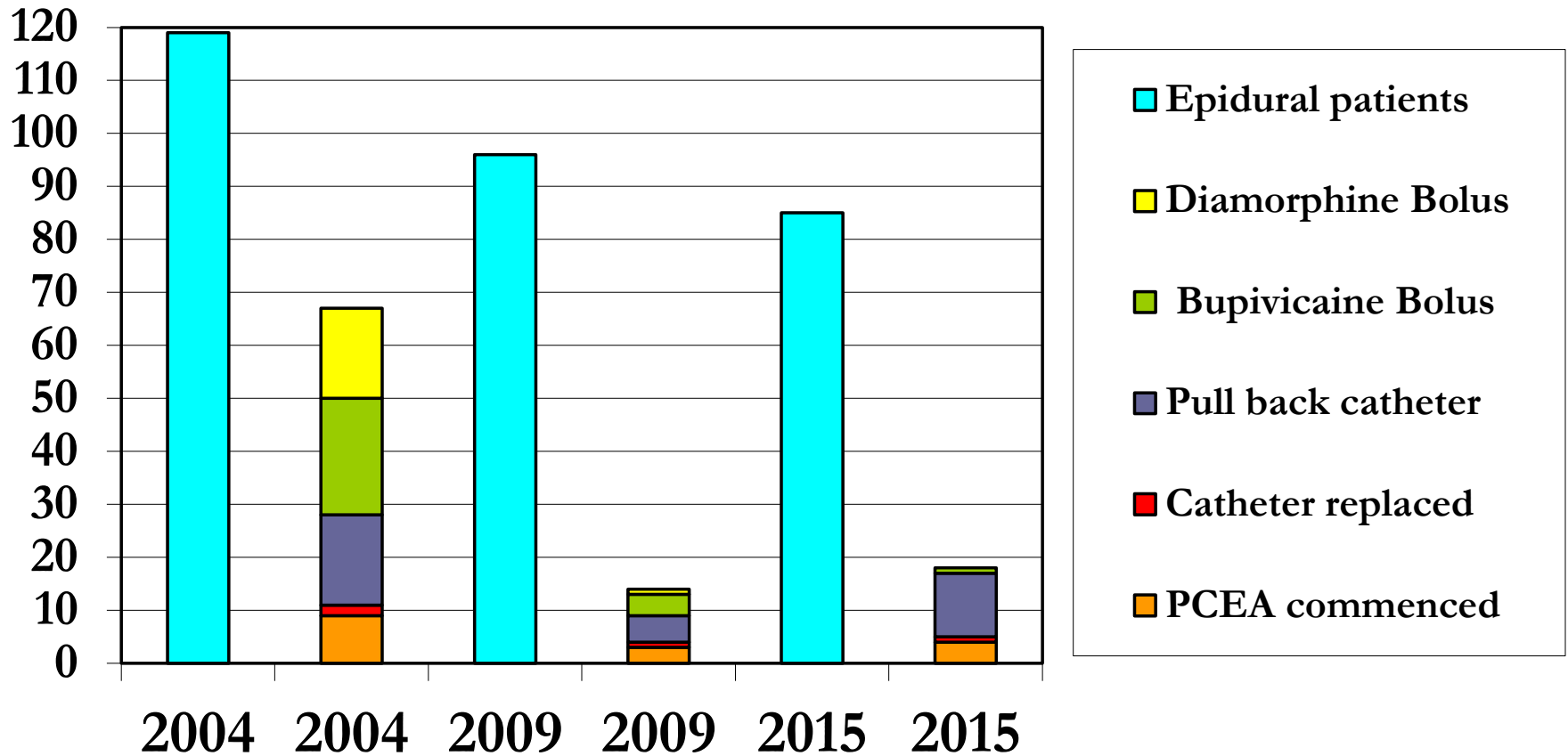




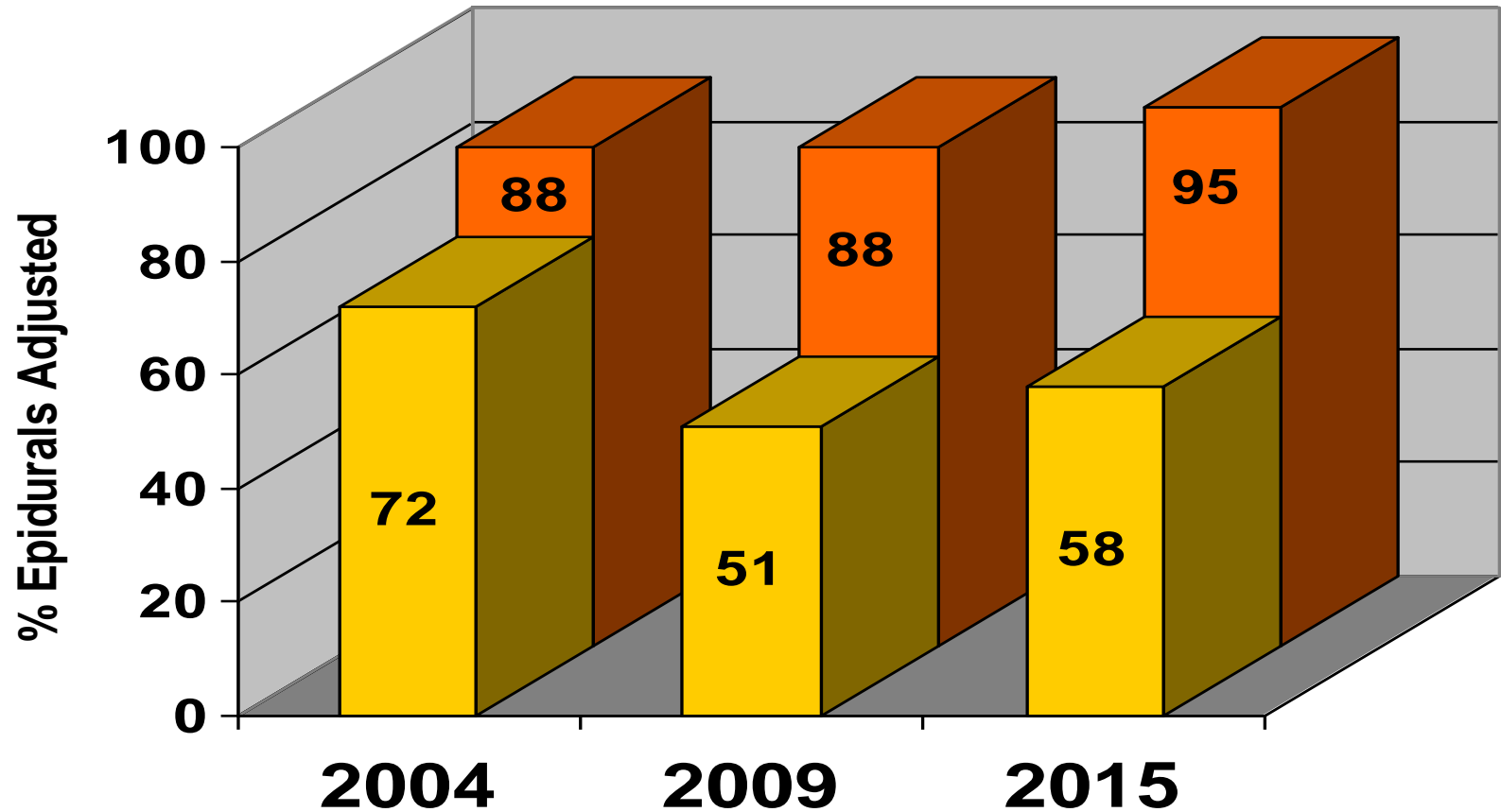
Epidurals cannot be nursed on a
general ward because..

Epidurals need frequent adjustment and
are time consuming to manage....


Epidural Alterations



% of Epidurals Adjusted



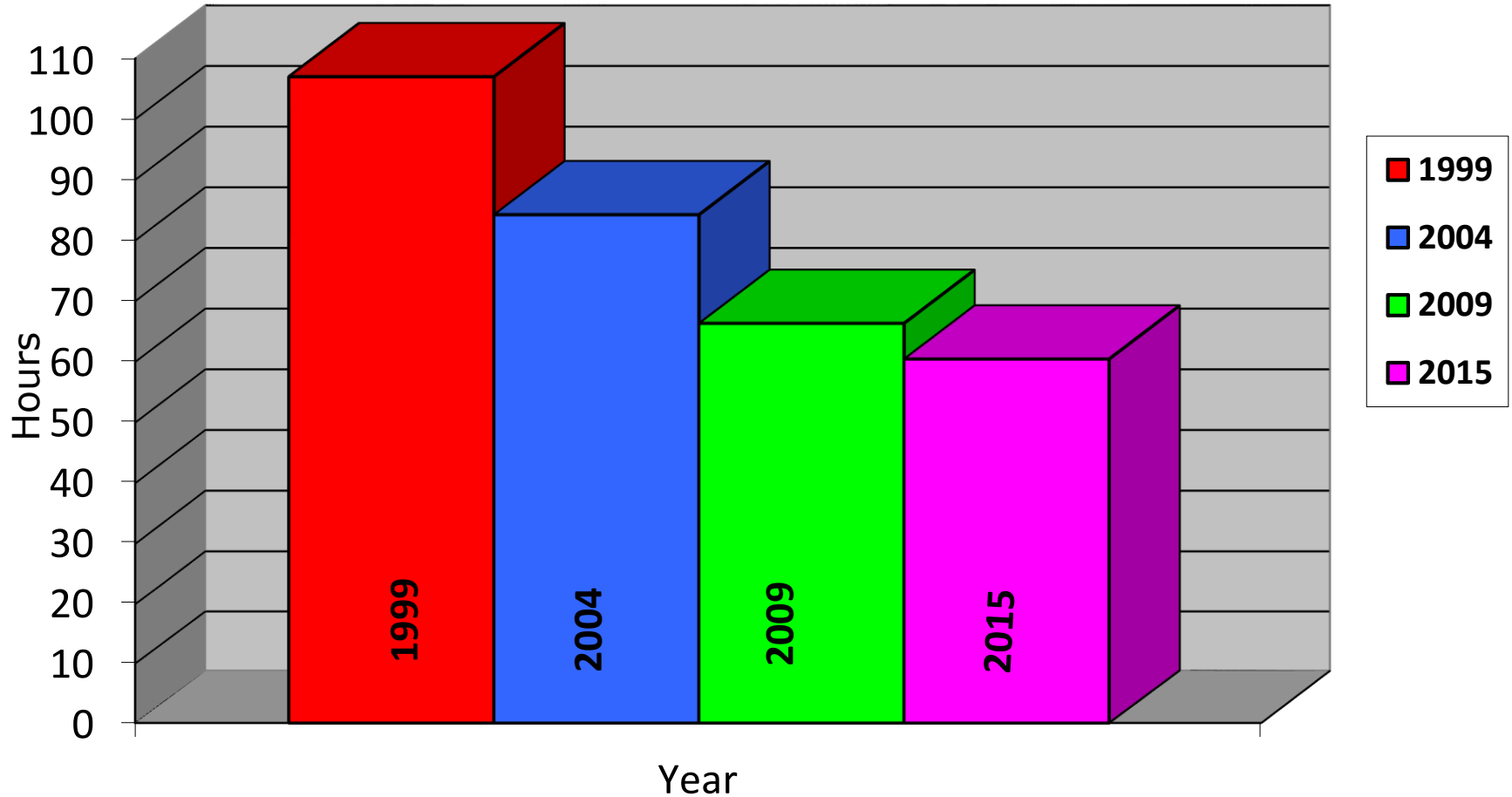
- % Epidurals adjusted to improve pain relief only
- % Epidurals adjusted including weaning



Epidurals cannot be nursed on a
general ward because...


Epidurals stay in too long and delay
recovery.

Average Number of Hours Epidural in situ



Duration Of Treatment

Year	Duration of treatment	Average length Epidural in situ
1994		80 hours (3.3 days)
1999	1-240 Hours	107 Hours (4.5 Days)
2004	1-168 Hours	84.26 Hours (3.5 Days)
2009	0-178 Hours	66.35 Hours (2.77 Days)
2015	2-152 Hours	60.47 Hours (2.52 Days)



Epidurals cannot be nursed on a
general ward because....

Epidurals cannot be nursed on a general
ward because they don't have the staff
to monitor the patients.



Frequency of Observations

Recommended Observations :

15 min in PACU then Hourly for 4 hours
and then 4 Hourly.

AVERAGE 1999 = 3.96 HOURS

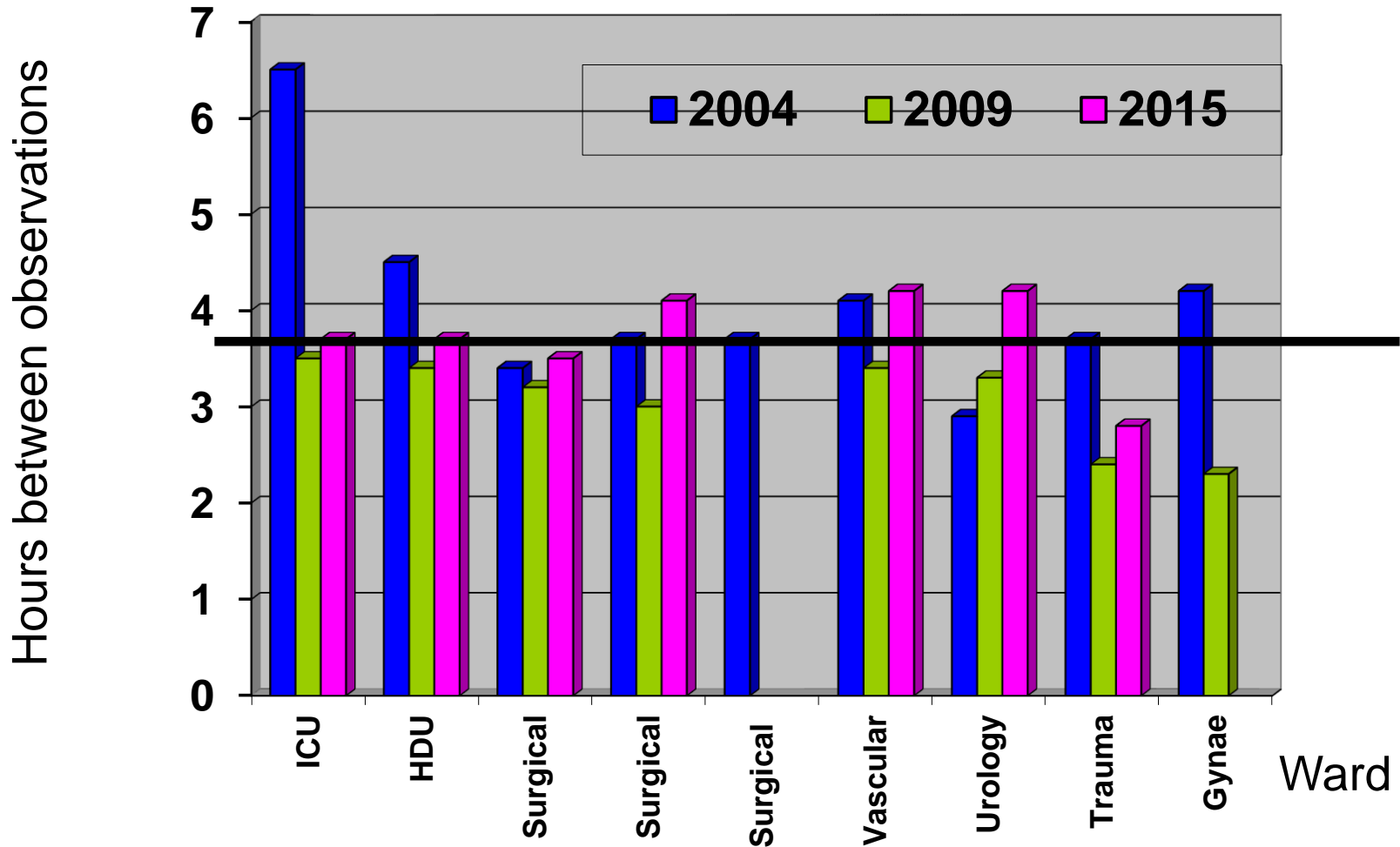
AVERAGE 2004 = 3.81 HOURS


AVERAGE 2009 = 3.22 HOURS

AVERAGE 2015 = 3.79 HOURS

Frequency of Observations per Ward

(Protocol Recommends 4 hourly)






Epidurals cannot be nursed on a
general ward because...

Out of hours Anaesthetists are called out frequently to troubleshoot Epidurals and support the staff on the wards.

Trouble shooting by Anaesthetists

Year	Bag change	Pump change	Filter leak	Epi fell out	Bolus/ rate up	Local bolus	Opiate bolus	Rate down	Epi resite
2004	3	1	1	1	17				
2009	3				21	4	1	1	1
2015			1	2	7	1	1	1	



Epidurals cannot be nursed on a general ward because...

They cause side effects.....

- Hypotension
- Nausea and vomiting/pruritis
- Respiratory depression
- Sedation
- Infection
- Motor block
- Neurological complications



Hypotension Results

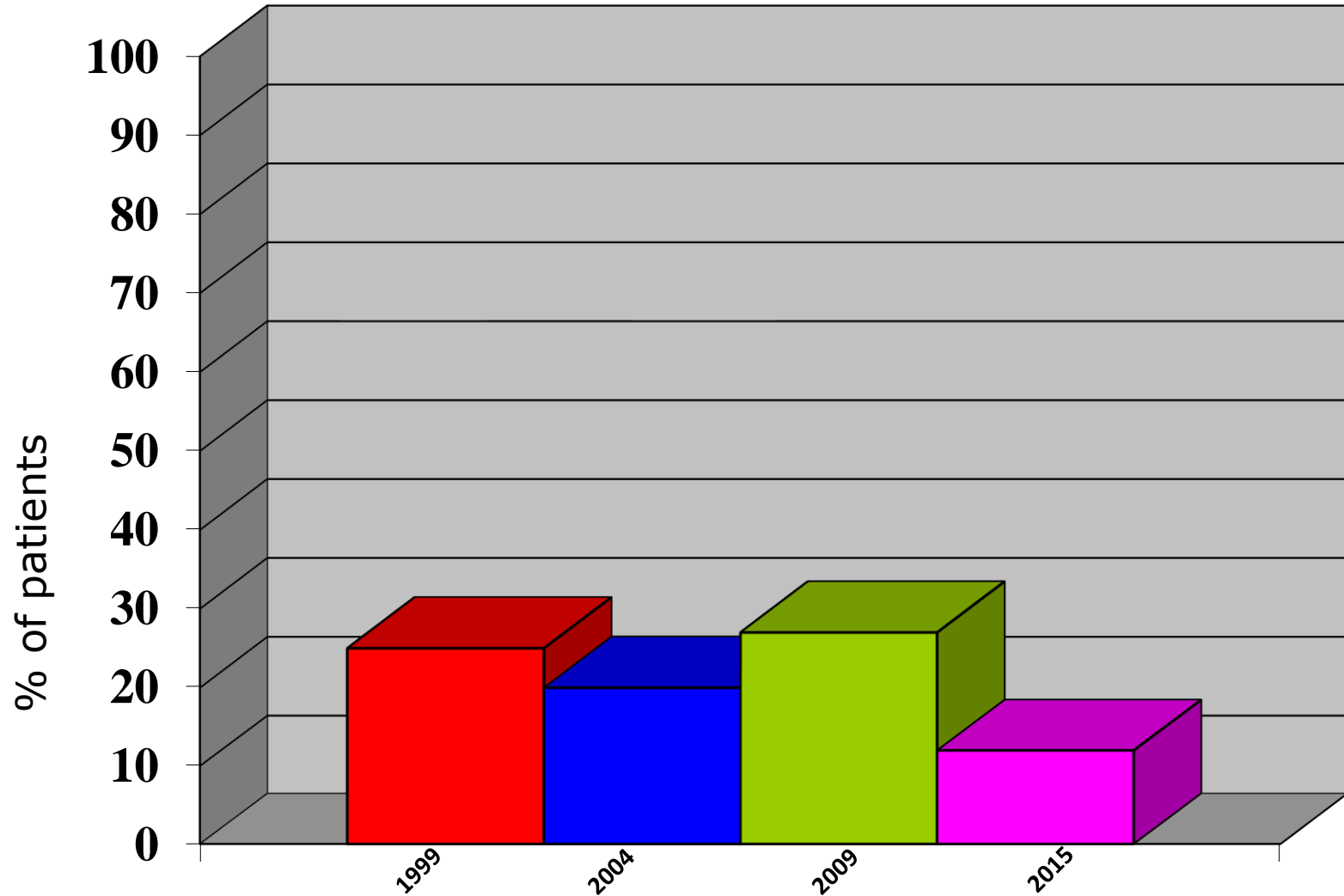
Hypotension for these audit cycles defined as systolic BP below 80 for 2 readings (4 hours)

2004	2009	2015
20%	7.2%	4%
(23/114)	(7/96)	(3/85)

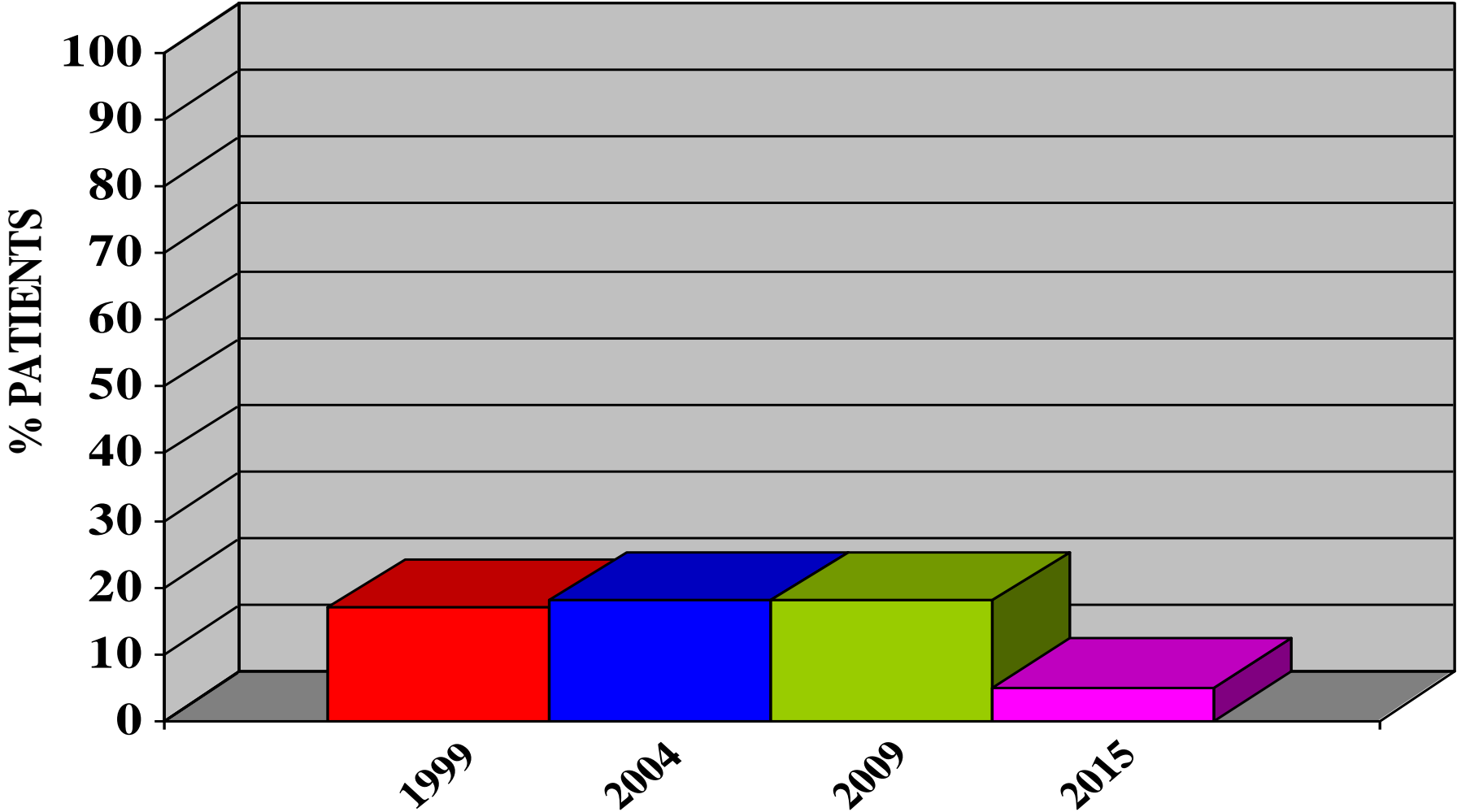
* In 1999 incidence of hypotension was significantly greater at 45% measured as systolic below 100.

Guidelines introduced have led to improvement in fluid management.

Emesis Requiring Treatment



Itching Requiring Treatment



Adverse Events

- No reported epidural related neurological cases during any of the audit cycles
- Excessive sedation / Respiratory Depression:
 - 1999-1 patient on ICU – opioid removed
 - 2005-1 patient on ICU – opioid removed
 - 2009 and 2015 – No reported cases
- Infection at Epidural site:
 - 1999 -2 cases reported
 - 2009 -2 slight redness at Epidural site-no growth
 - 2005 and 2015 - No reported cases

4 CASES 1989-1993

Incidence of Motor Block

Year	Number of Patients with some degree of motor block	Of which were Lumbar Epidurals
2004	10/114	5/10
2009	2/96	2/2
2015	9/85	2/9



2015 Motor Block

9.4% (9/85) had incidence of some motor block

Score 1 (Just able to flex knees and toes)

- 2 patients had lumbar epidurals
- 4 patients had low thoracic Epidurals T11 - 12
- the above 6 patients motor block improved first day post op

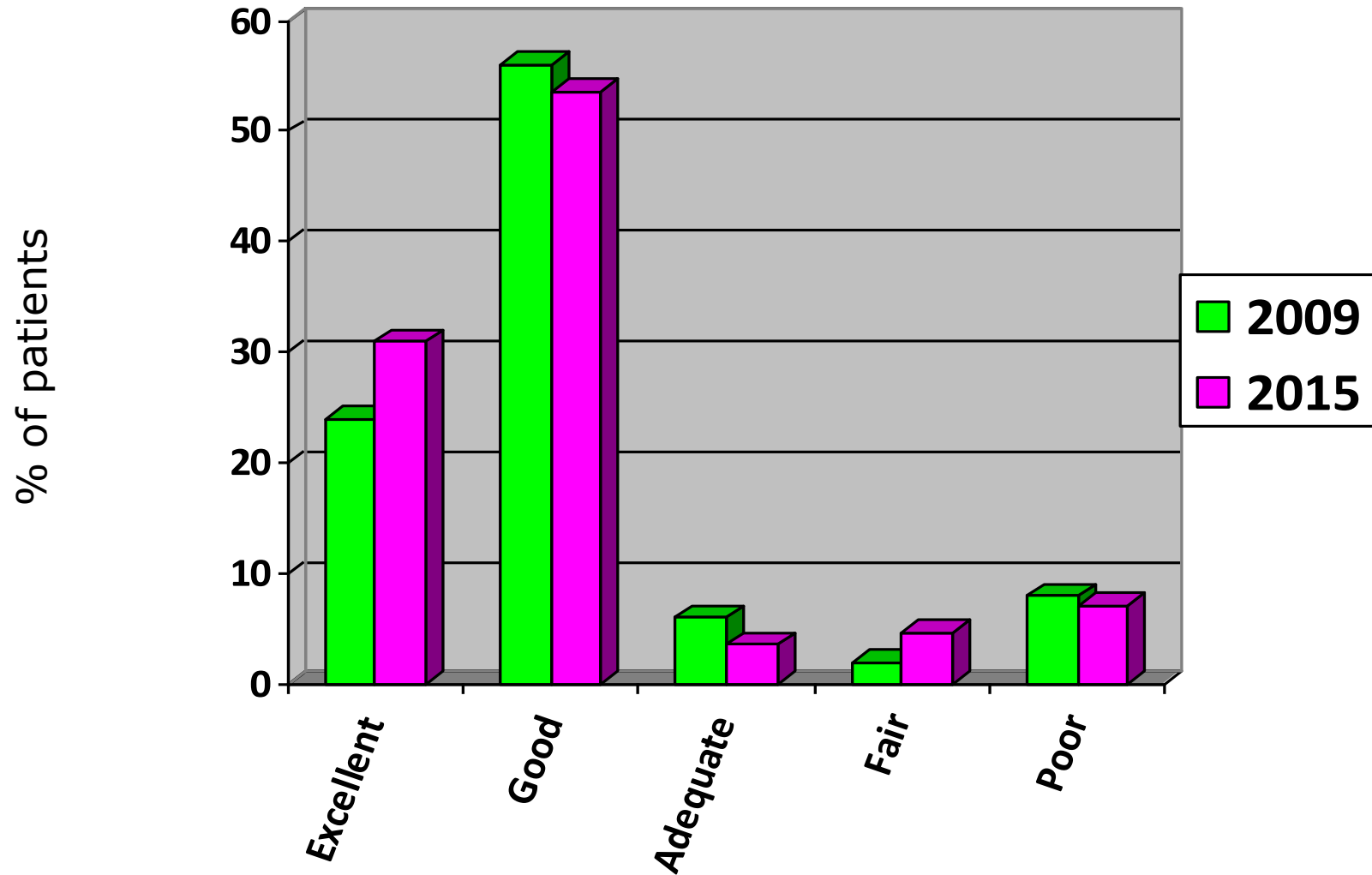
Score 2 (Unable to flex knees)


- 2 patients - both sited T10-11. Improved first day post op.

Score 3 (Unable to flex knees or feet)

- 1 patient – Post AAA repair. MRI scan – no epidural lesion – thought to be surgically related. Numbness gradually improved.

Epidural Satisfaction Ratings






Epidurals cannot be nursed on a general ward because...

- Staff on the Ward are not adequately trained



Staff Training

- 2 half day training sessions including pump competencies
- Pre reg nurses
- Post reg nurses
- Pain Placement York University Nursing students
 - Spoke placement
- Hull York Medical School
- Link nurse system
- Visible presence on the wards.



In summary

Epidurals can be nursed on a general ward if.....

- Designated personnel
 - Nurse led 7 day service – Consultant support and out of hours cover
 - Experienced staff with Acute and Chronic roles and NMP
- Adequate Competency based Training
 - Anaesthetists
 - Nurses
- Use Standardised equipment and drugs
 - Dedicated pumps and prefilled drugs
- Appropriate Documentation
 - Policies and protocols
 - Monitoring forms
- Continuing CPD Audit of the Service to implement changes in practice
 - 3 monthly
 - 5 yearly

References

- Wheatley, R.G. Shug, S.A. Watson, D. (2001)
Safety and efficacy of postoperative epidural analgesia.
- Hughes, M.J. et al (2014)
Analgesia after open abdominal surgery in the setting of enhanced recovery surgery: a systematic review and meta-analysis.
- Young, JHY. Gates, S. Naidu, BV. Wilson, MJA. Gao Smith, F. (2016)
Paravertebral blocks versus thoracic epidurals for patients undergoing thoracotomy.
- Guay, J. Kopp, S. (2016)
Epidural pain relief versus systemic opioid-based pain relief for abdominal aortic surgery- Cochrane systematic review.
- Royal College of Anaesthetists (2010)
Best practice in the management of epidural analgesia in the hospital setting.