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Assessment of physical monitoring following rapid tranquillisation

Stephen Dye

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Aims

X

- Lecture on developments in RT
- Review of recent studies
- Discussion of specific medications

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- Containment measures
- Definition
- Importance of Monitoring
- Other organisations

Introduction

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Containment Measures

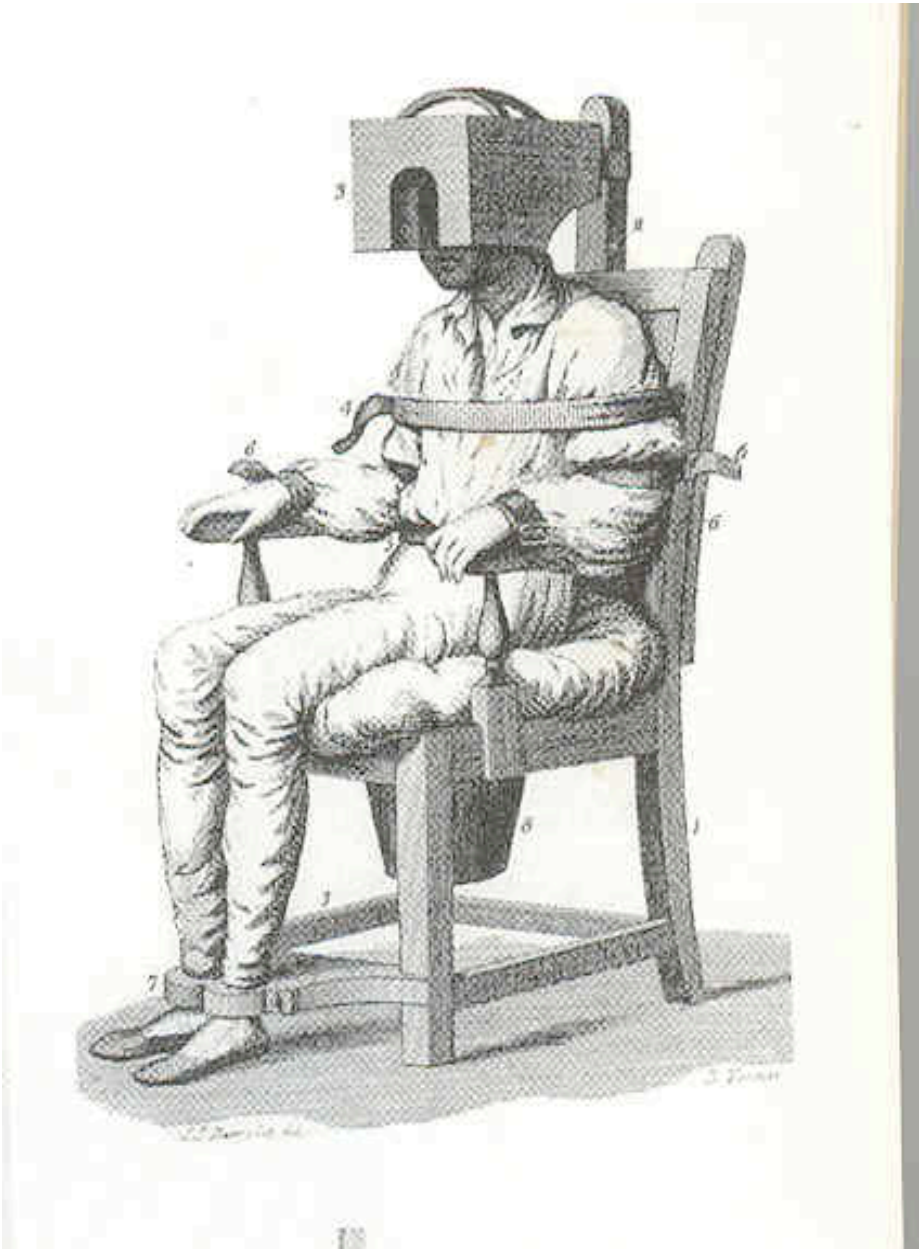
Close Observation

Leave restriction

Physical Restraint

Seclusion

Rapid Tranquillisation



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- James Norris was an American marine kept for 14 years in this harness apparatus, being – allegedly – an exceedingly dangerous homicidal maniac.

- The revelation of his treatment formed part of the reformers' campaign to clean up Bethlem Hospital in the early 19th Century

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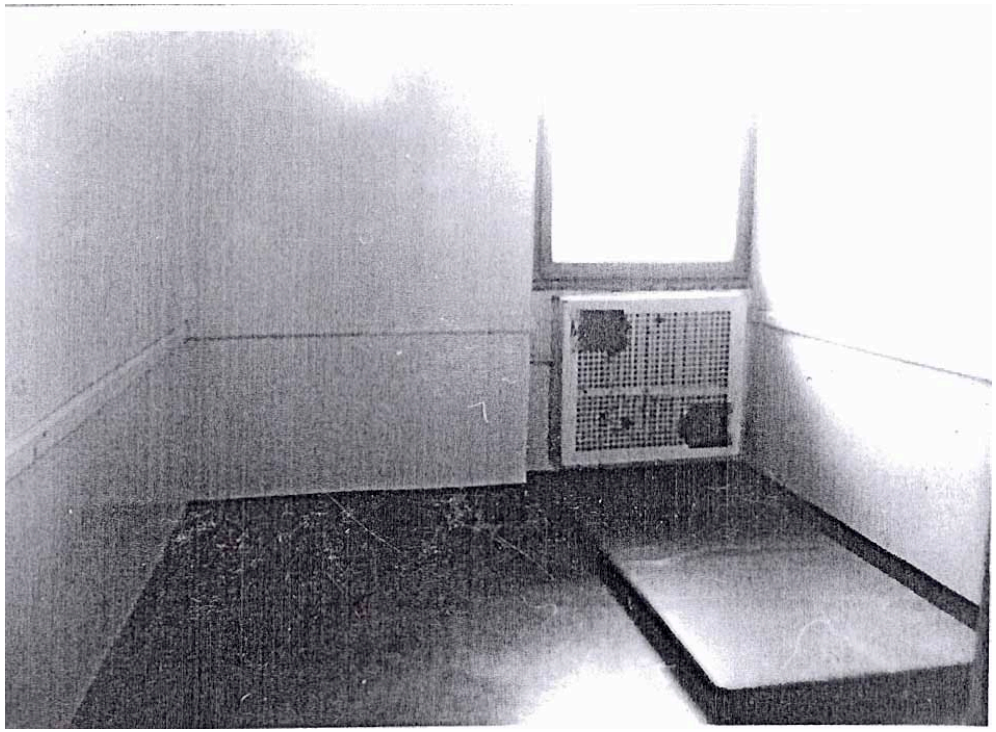

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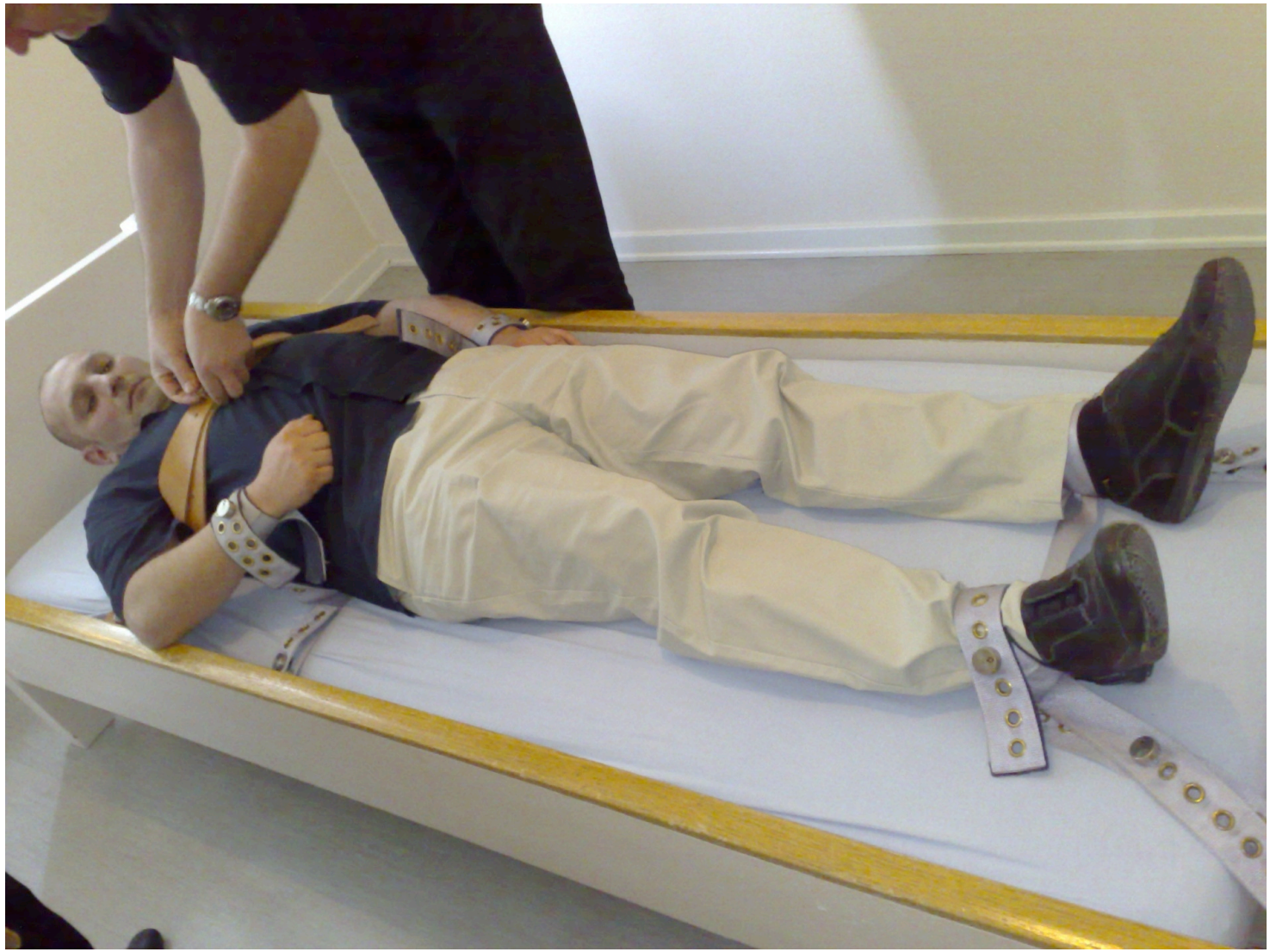

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Case Report

Tasers and psychiatry: the use of a Taser on a low secure unit

John Little, Michaela Burt

Bowman Low Secure Unit, Bodmin Hospital, Bodmin, Cornwall, UK

Abstract

The exceptional use of a Taser by the police on a low secure unit, and the extent to which the clinical team had gone to in managing the man, is described. A companion article discusses clinical and ethical aspects to taser use in psychiatry.

Keywords

Taser; low secure unit; severe mania

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Service Users Perspective

What do consumers say they want and need during a Psychiatric Emergency ?

Allen et al. J Psych Prac 2003

- Service users want to be listened to, spoken to, treated with respect and given oral medication of their choice.
- Rated distraction highly, such as art or music and access to staff they knew and spiritual counsellors.
- Preferred space to be able to walk about and access to food and drink.
- Although over 50% wanted medication they complained of forced administration and unwanted side effects
- Benzodiazepines were preferred option, haloperidol the least preferred option.
- The increased use of advance directives was supported

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Rapid Tranquillisation

- RT one aspect in management of disturbed behaviour
  - Strategies & Guidelines

- Exact definition varies
  - “Use of medication to calm / lightly sedate the service user and reduce risk to self and / or others”
  - “aim to achieve an optimal reduction in agitation and aggression, thereby allowing a thorough psychiatric evaluation whilst allowing comprehension and response to spoken messages throughout”

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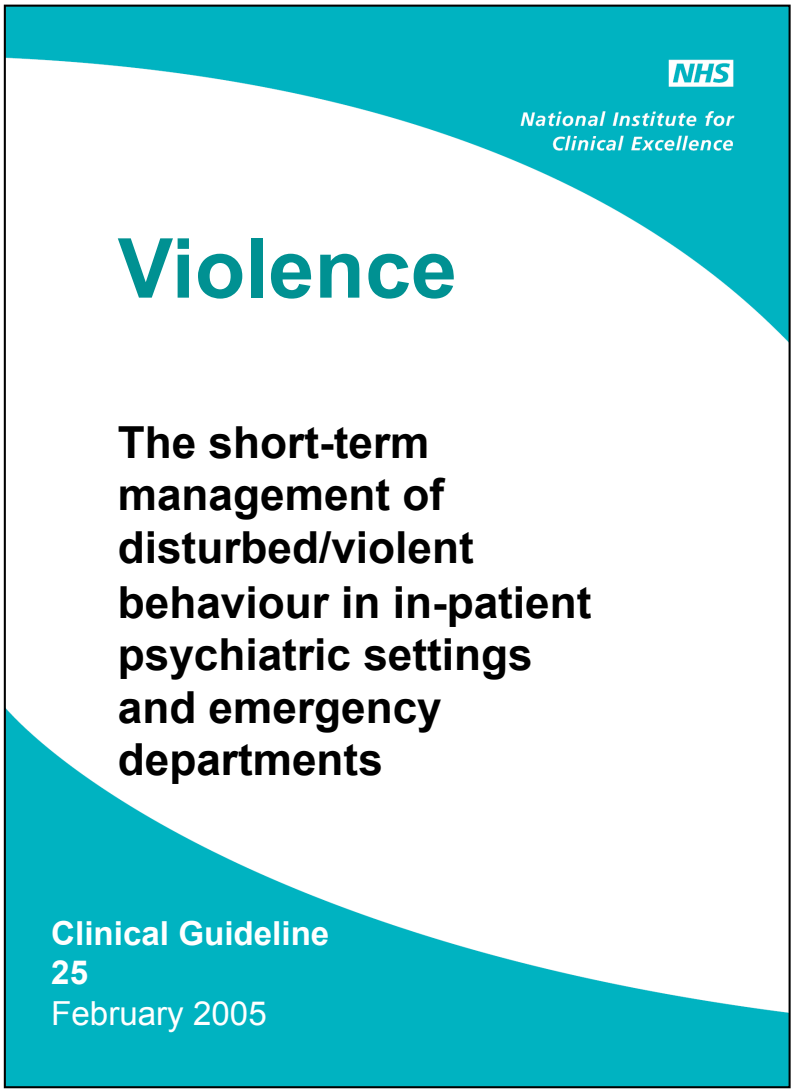
NICE Guideline on Violence 2005

- De-escalation
- Seclusion
- Rapid Tranquillisation
- Restraint
- "Containment Strategies" (Bowers)
- All medication given in the short-term management of disturbed / violent behaviour should be considered as part of rapid tranquillisation (including PRN medication)



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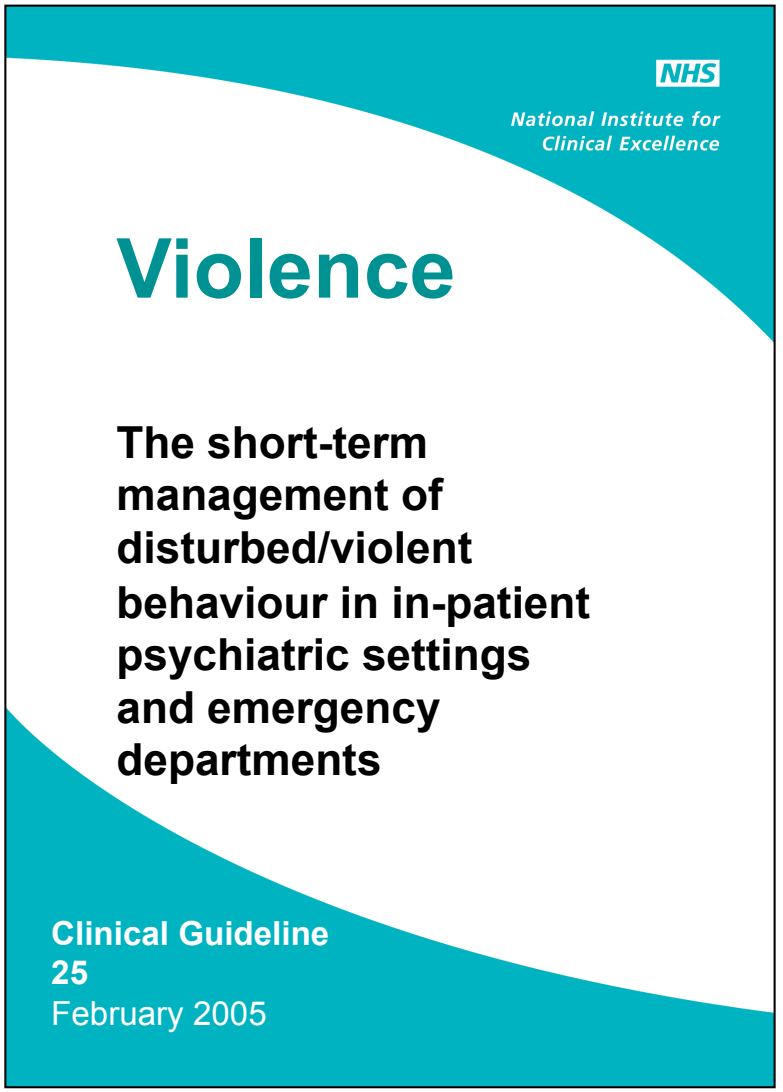
NICE Guideline on Violence 2005

- In the UK deep sedation/ sleep is not considered a desirable endpoint

- Medication is used when other less coercive techniques of calming, such as de-escalation or intensive nursing techniques, have failed



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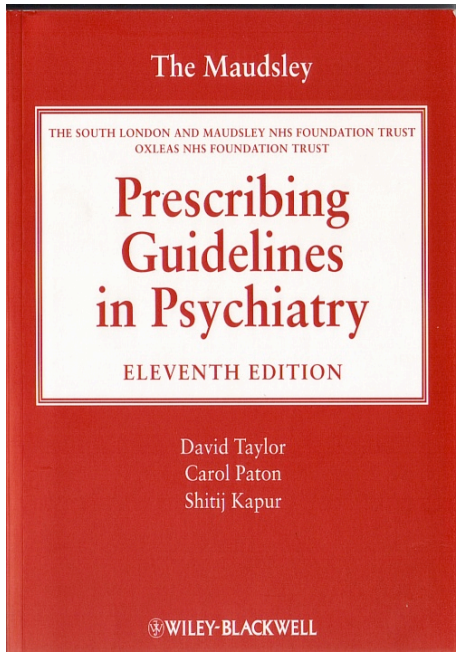
Maudsley Prescribing Guidelines

- “essentially a treatment of last resort”
- “when other approaches have failed to de-escalate acutely disturbed behaviour”
- Protocols, offer oral prior to im, mention specific drugs
- Clopixol acuphase contentious



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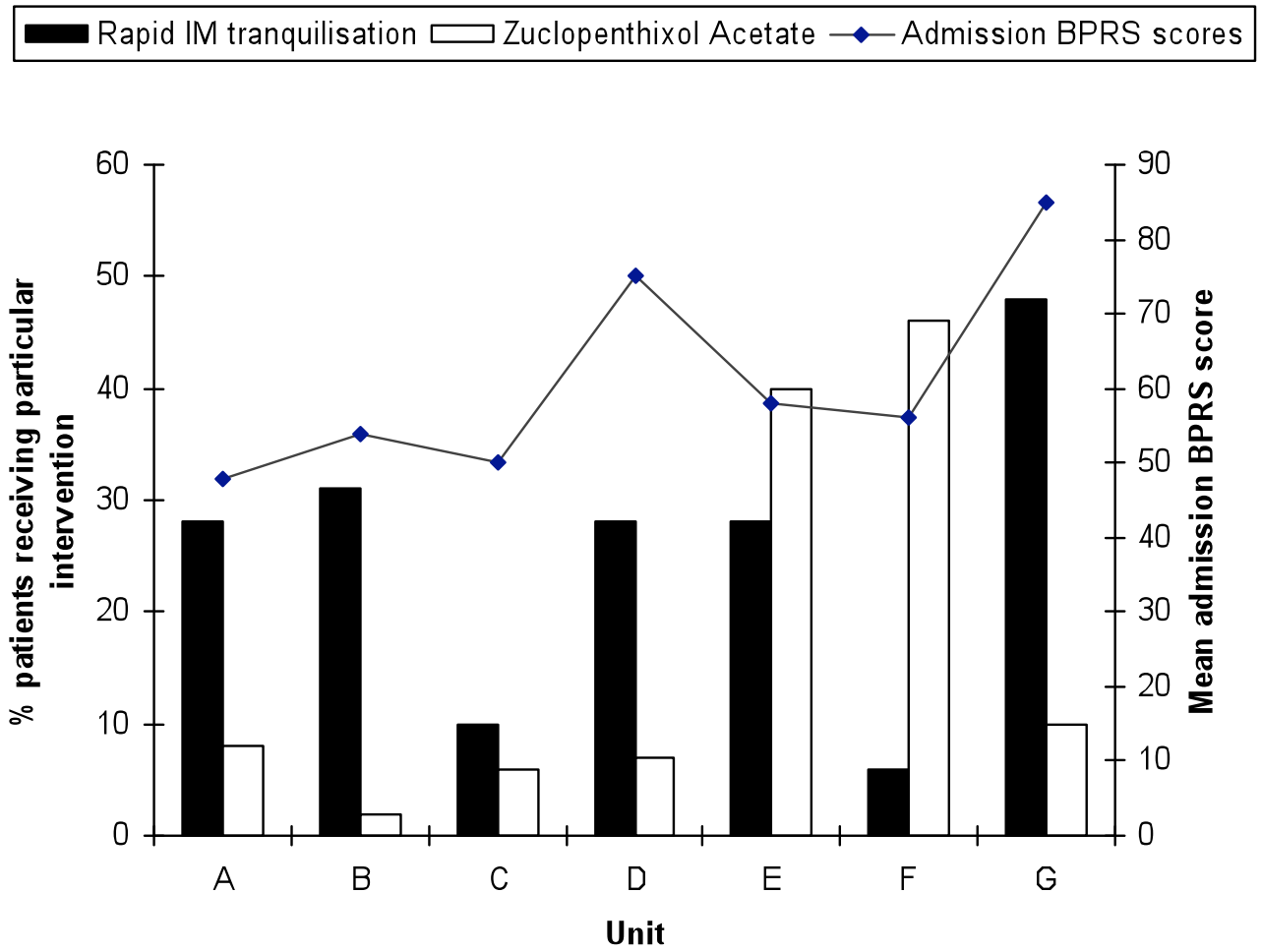
Proportion of patients in different PICUs receiving RT and Zuclopenthixol Acetate by IM injection



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Other Guidance

- Royal College of Psychiatrists CR138

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Review

What is new in rapid tranquillisation?

Caroline Parker[1], Masum G Khwaja[2]

[1]*Consultant Pharmacist, Adult Mental Health, St Charles' Hospital, Central & North West London NHS Foundation Trust, UK;* [2]*Consultant Psychiatrist and Honorary Senior Lecturer, Central & North West London NHS Foundation Trust, West End Community Mental Health Team, London, UK*

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Box 1. *Good practice principles in prescribing medication to prevent or control violence*

- Medication should only be used when it is judged that not to do so would present greater risks.
- The indication for which any pro re nata (PRN) medication is prescribed should be clearly stated.
- All PRN prescriptions should be reviewed on a regular basis.
- Oral (PO) and intramuscular (IM) should be prescribed separately, `PO/IM' should not be used.
- As few medicines as possible should be used.
- The lowest dose compatible with effective treatment should be used.
- The use of combinations from the same class of medicine should be avoided where possible.
- The choice of medication and dose prescribed should also be individually tailored to the patient, after an attempt has been made to establish a provisional diagnosis.
- Patients should be monitored for clinical benefit from administered doses.
- Patients should be regularly monitored for side effects of medication.

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***Box 2**. Patient factors affecting the choice of medication and dose prescribed for RT*

- Psychiatric history, e.g. in the presence of dementia avoid antipsychotics if possible.
- Current mental states, e.g. the presence of a known psychosis prompts the use of an antipsychotic.
- Previous response to RT medicines.
- Medical history, including head injury.
- Learning disabilities.
- Physical state: avoid benzodiazepines in patients who are physically unwell, delirious or have significant respiratory impairment.
- In older adults, consider the physical `fitness' of the individual.
- Any existing advanced directive about medicines.
- Co-morbid physical disorders.
- Concomitant medication.
- Concurrent substance or alcohol misuse.
- Young age: there is a higher incidence of disinhibition or paradoxical reactions with benzodiazepines in children when compared to adults.
- Pregnancy.

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Review Article

Establishing gold standard approaches to rapid tranquillisation: A review and discussion of the evidence on the safety and efficacy of medications currently used

J Peter Pratt[1], Jacqueline Chandler-Oatts[2], Louise Nelstrop[3], Dave Branford[4], Stephen Pereira[5], Susan Johnston[6]

[1]*Chief Pharmacist, Sheffield Care Trust;* [2]*Research Fellow, Royal College of Nursing Research Institute, Warwick University;* [3]*Research Fellow, Royal College of Nursing Institute, Oxford;* [4]*Chief Pharmacist Derbyshire Mental Health Services NHS Trust;* [5]*Consultant Psychiatrist, North East London Mental Health Trust;* [6]*Consultant Psychiatrist, Rampton Hospital, Nottinghamshire Healthcare NHS Trust*

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- Rapid Tranquillisation is used when control of agitation, aggression or excitement is required in order for psychosocial techniques to be used.

- There is no consensus in the UK over first line drugs.

- Good summary of the published data on use of medication

- There is **no good evidence base** for RT and **no gold standard**, further UK specific research is urgently needed

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- Suitable drugs for rapid tranquillisation need to have a **rapid onset** of action.
- **Frequent small doses** may be safer and more effective than single large doses**,** taking account of half lives
- Antipsychotics traditionally used for RT, probably because violence is commonly associated with psychosis, but….
- Benzodiazepines are also used commonly and have important advantages over antipsychotics in terms of side effects and toxicity.
- Oral medication should always be offered
- Combination of benzodiazepine and antipsychotic may reduce amount of antipsychotic required

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- Avoid antipsychotics in those who have compromised cardiovascular function.
- Avoid benzodiazepines in patients with compromised respiratory function
- If antipsychotics are considered necessary, consider atypicals in those who are antipsychotic naive or who have a history of extrapyamidal side effects.
- Always consider the previous and current medication
- Exceptionally it may be necessary to exceed the BNF dose – rationale for this must be recorded in the care plan, and **all recommended physical monitoring carried out**.

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Drug	Route	Pharmacokinetics	Major side effects	Notes
Short-acting antipsychotics				
Aripiprazole	IM	Peak 1-3 hours t½ 75 hours	Headache nausea	t½ rises to 146 hours in poor metabolisers of CYP2D6
Chlorprom - azine	Oral	Peak 2-4 hours t½ 16-30 hours	Hypotension Arrhythmias Seizures Cardiac arrest	Should never be given parenterally because of the risk of severe hypotension and prolonged unconsciousness, as well as the reported association of high doses with sudden death.
Haloperidol	Oral	Peak 4 hours t½ 21 hours	EPSE Hypotension NMS Increased QT_c, Arrhythmias Seizures	Note risk of acute dystonias and ensure that an appropriate antimuscarinic is to hand. Not recommended for I. V use because of the risk of Arrhythmias
	IM	Peak 20 minutes t½ 21 hours		
Olanzapine	IM	Peak 15-45mins t½ 30 hours	Hypotension Bradycardia	Less likely to cause EPSE than haloperidol **Benzodiazepines should not be given within 1 hour of IM olanzapine** **The MHRA have warned against the use of Risperidone in the treatment of behavioural symptoms in dementia, due to increased risk of stroke**
	Oral	Peak 6-8 hours		
Quetiapine I.R.	Oral	Peak 1.5-1.8 hours t½ 6-7 hours	Hypotension	Limited clinical experience or trial data This drug was not considered by NICE in the violence guideline, but its short half-life justifies its inclusion in this list.
Risperidone	Oral	Peak 2 hours t½ 18 hours	EPSE Hypotension	Limited clinical experience or trial data **The MHRA have warned against the use of Risperidone in the treatment of behavioural symptoms in dementia, due to increased risk of stroke**

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Benzodiazepines				
Lorazepam	Oral	Peak 2 hours t½ 12 hours	Respiratory depression Disinhibition IV must be diluted with equal volume of WFI/saline	A wide therapeutic index & respiratory depression is readily reversed with the specific antagonist Flumazenil **I.M. lorazepam should not be given within 1 hour of I.M. Olanzapine** Disinhibition is more likely to occur in those with organic brain disease, including learning disabilities,and older people **Decision to use I.V. administration of benzodiazepines should not be made in isolation by junior medical staff**
	IM	Peak 60-90 mins t½ 12-16 hours		
Diazepam	Oral	Peak 60 minutes t½ 24-48 hours		
	I. V.	N/A		
Longer acting antipsychotics				
Zuclopenthixol acetate (acuphase)	IM	Onset 2-8 hours Peak 24-36 hours t½ 60 hours	EPSE Sudden death Cardiac arrest Arrhythmias	This is not an appropriate drug for use in RT due to long onset and duration of action. It may occasionally be used as part of a medium term strategy. It should *never* be used in those who are neuroleptic naive, who are struggling, who are sensitive to EPSE, or those with cardiac disease, hepatic or renal impairment or in pregnancy.
Antihistamines				
Promethazine	Oral	Peak 2-3 hours t½ 7-15 hours	Prolonged sedation Seizures Cardiorespiratory depression	Limited evidence for efficacy, but may be of use in patients who are Benzodiazepine tolerant, or who have breathing difficulties
	IM	Onset 1-2 hours t½ 7-15 hours		

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Summary of Risks

- Risks both drug and non drug related
- Blofeld: Bennett inquiry improved physical safety mechanisms
- Posn asphyxia…excited delirium, struggling, exhaustion
- Drug related as above
- RT also includes monitoring
- Ltd evidence of drugs, even less regarding post RT monitor

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Suggested scheme for physical monitoring after administration of medication

•**Alertness** •**Temperature** •**Pulse** •**Blood pressure** •**Respiratory rate**	Every 5-10 minutes for 1 hour then every 30 minutes until patient is ambulatory then continue to monitor alertness, mental state and behaviour. Restart physical observations if there are any concerns.
Fluid balance & electrolyte balance should be monitored as clinically indicated	
ECG monitoring is recommended antipsychotics have been given	
If a patient is unconscious **continuous pulse oximetry** is recommended	

If too behaviourally disturbed: "observe for signs / symptoms of pyrexia, hypotension, over sedation, general physical well being"

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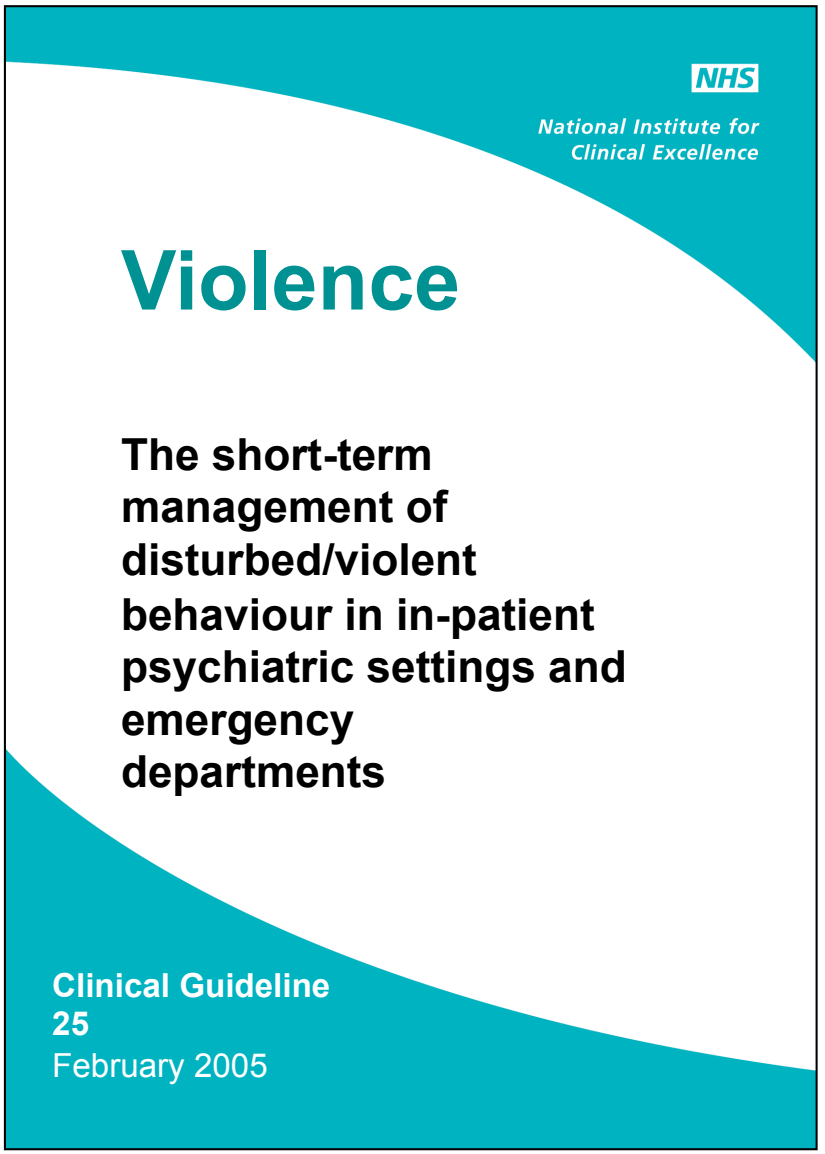
Blood pressure
Pulse
Temperature
Respiratory rate
Hydration status

- Pulse oximeter available
- Attention to resp effort, consciousness in high risk situations
- No frequency



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Journal of Psychiatric Intensive Care

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Original Research Article

A review of the practice and position of monitoring in today's rapid tranquilisation protocols

James Innes[1,3], Lynda Iyeke[2,3]

[1]*Deputy Chief Pharmacist;* [2]*Senior Pharmacist;* [3]*East London NHS Foundation Trust, UK*

- **NHS Trust RT documents**
  - When monitoring takes place
  - What is monitored, at what frequency and for what duration

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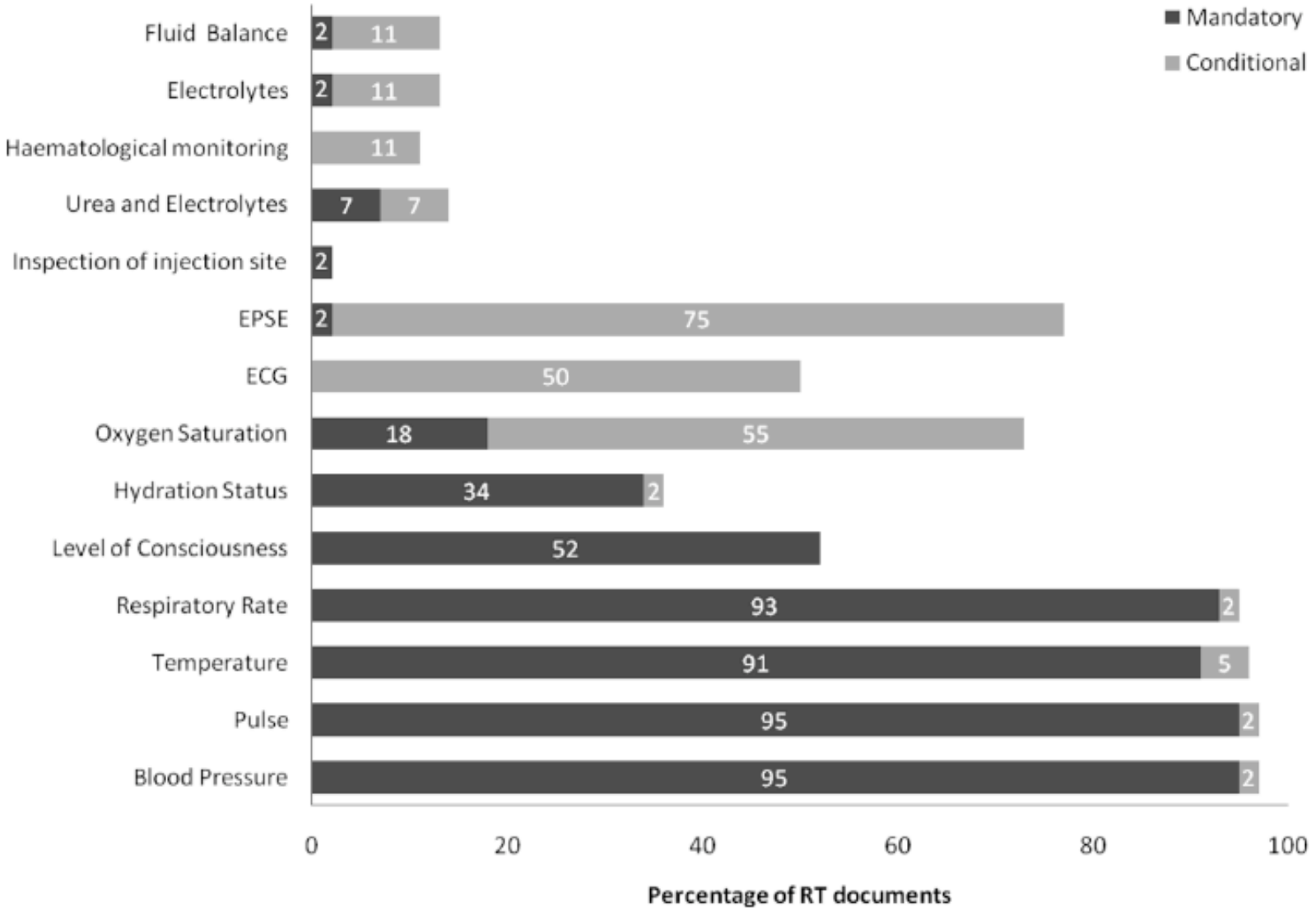

Table 2. Frequency of acute phase monitoring following IM administration of RT medication

Frequency of monitoring*	Percentage of RT documents
Every 5 minutes	22
Every 10 minutes	16
Every 15 minutes	41
Every 30 minutes	2
Varies depending on monitoring parameter	9
Regular intervals	5
Not stated	5

* Where data was defined as a range (e.g. frequency of every 5—10 minutes), the lowest value of this range was recorded (e.g. 5 minutes)

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Assessment of physical monitoring following rapid tranquillisation: a national survey

Benjamin Loynes
James Innes
Stephen Dye

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Method

- 58 NHS Mental Health Trusts
- Request a copy of any audit undertaken relating to implementation of adult RT document
- 1st week March 2011
- Replies received by 1st May examined

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Results

Type of Reply	Number of Trusts (%)
No response	11 (19%)
Confirmed no audit undertaken	25 (43%)
Audit undertaken but **physical monitoring not studied**	2 (3%)
Relevant audit undertaken	18 (31%)
Trust refused to participate	2 (3%)

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Physical Observation	Number (%) of audits	Mean % that observation performed (range)
Pulse	7 (38.9)	55 (25 – 75)
Blood Pressure	7 (38.9)	55 (20 – 75)
Respiratory Rate	8 (44.4)	33 (8 – 75)
Oxygen Sats	4 (22.2)	43 (2 – 85)
Temperature	7 (38.9)	40 (20 – 50)
Hydration / fluid intake	3 (16.7)	19 (15 – 25)

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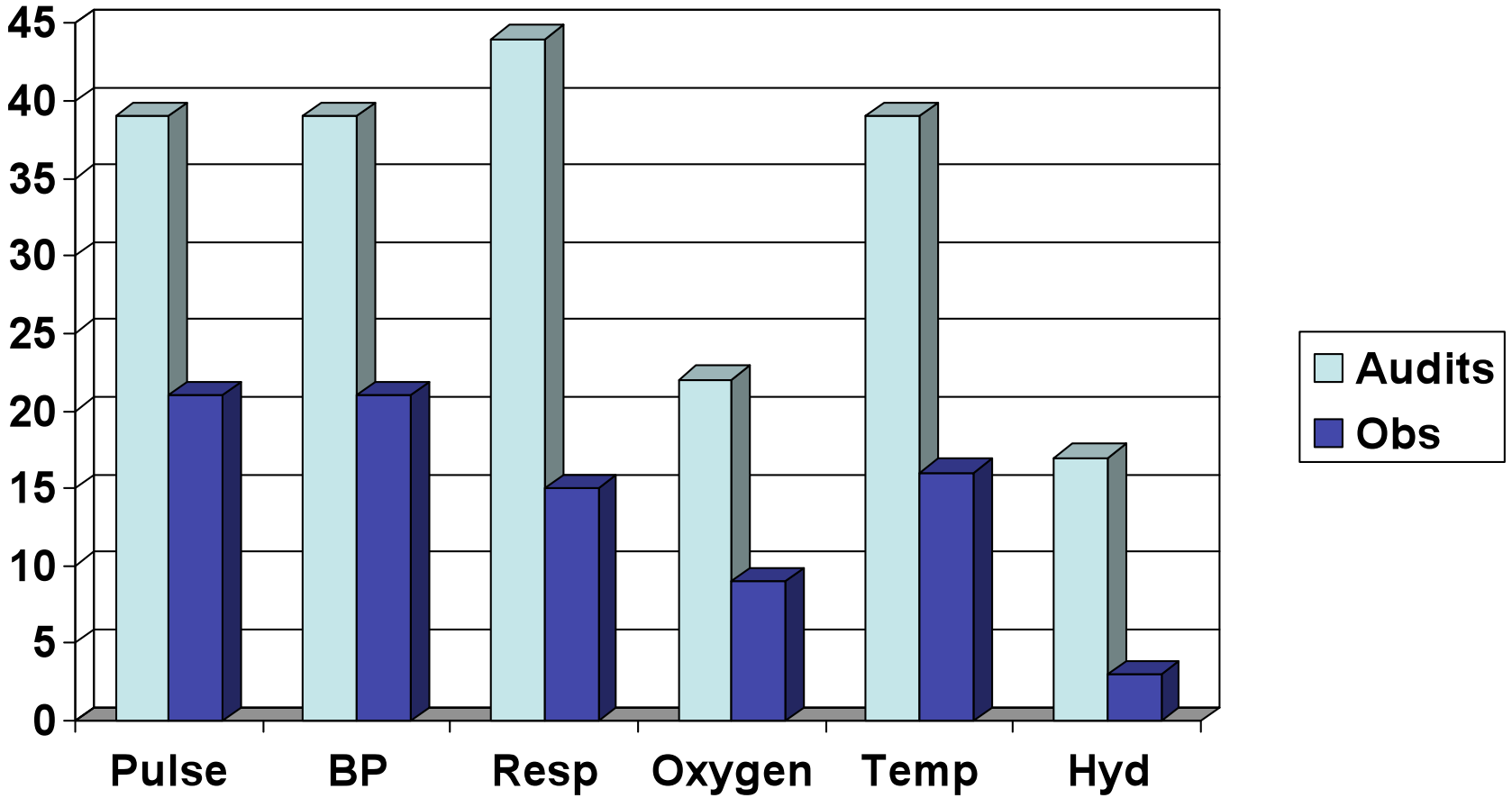

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Physical Observation	Number (%) of audits	Mean % that observation performed (range)
Consciousness / Alertness	4 (22.2)	62 (50 – 82)
Dystonia / movt side effects	0 (0)	N/A
ECG	1 (0.06)	0
ANY blood tests	1 (0.06)	0
Haematology	1 (0.06)	0
Biochemistry	0 (0)	N/A

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- Mean time since audit completed: **16 months** (range 1 – 59)
- Mean no. of RT incidents / audit: **45** (range 4 – 274)
- 10 / 18 specified frequency / duration for which observation should be measured
- 4 / 18 of the audits looked at any reasons for not completing monitoring

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Discussion

- Less than 1/3 produced ANY evidence that ANY physical monitoring post RT took place
- Standards vague
- Variation guidelines → variation standards → variation practice → variation auditing
- Local documents….”policy” / “protocol” / “guideline” / “SOP” / “algorithm”
- Occasions that observations took place also concerning

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Conclusion

- Focus upon measurement of physical obs post RT
- Not look at exact clinical practice but only whether specific items being audited
- Worrying level of demonstration of safe practice
- ?lack of specific NICE guidelines relating to required monitoring

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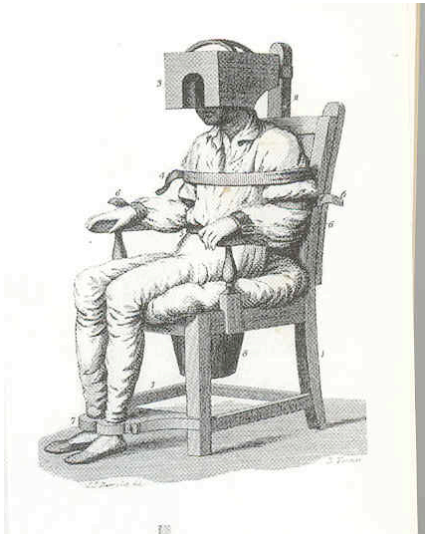
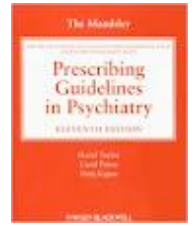
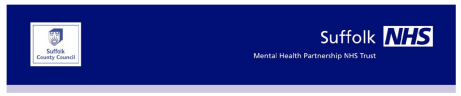
Summary

- “Containment” strategies
- Guidelines
- Monitoring
- Research







RAPID TRANQUILLISATION POLICY