

REHABILITATION & CRITICAL ILLNESS

A cartoon illustration of a man with a large head and small body, wearing a light blue suit and a brown tie. He has a serious expression and is holding a human skull in his right hand, which is raised towards his face. The background is white.

Dr Carl Waldmann

READING

March 2010 DURHAM



Worth1000.com





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NATIONAL REPORT



critical to success

The place of efficient and
effective critical care services
within the acute hospital



AUDIT
COMMISSION
Promoting the best use of public money

Comprehensive Critical Care

A REVIEW OF ADULT CRITICAL CARE SERVICES



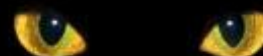
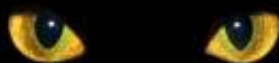












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More than 140 000 patients are admitted to intensive care units in the United Kingdom each year, of whom more than 50 000 die within a year of admission.^{1,2} These patients have an excess long term risk of death compared with the general population matched for age and sex,^{3,4} and a substantial percentage continue to experience both physical and psychological problems after discharge.⁵⁻¹¹ Studies assessing health related quality of life after intensive care suggest that it improves over time but that people do not return to the same level of health that they had before they fell ill and their health related quality of life is lower than the general population norms for at least the first year.^{1,2,12-18} The reported prevalence of anxiety, depression, and post-traumatic stress disorder is also high and may endure for many years.^{7,8,10,17,18} Patients' perceptions of their intensive care experience are also associated with subsequent distress.¹⁹⁻²² These continuing problems have implications for patients and families and carers, and impose a continuing financial burden on primary and secondary health services.

There is more to life than measuring death

King's Fund Report

Q O L

REHABILITATION

PSYCHOLOGICAL

PHYSICAL

...SIVE: Elephant Man tells of new agony

DRUGS TRIAL MAN HAS CANCER

ONE of the six human guinea pigs in the 'Elephant Man' drug trial has been given the shattering news that he has cancer, *The Mail* on Sunday reveals today.

David Oakley, 35, has been diag-

By **Angella Johnson**

nosed with a lymphoid malignancy - one of the most aggressive cancers. He must now endure a terrible wait to discover whether it is treatable.

Until today, the driving instructor

from Ealing, West London, has been known only as Patient A. He has waived his anonymity in an exclusive interview with *The Mail* on Sunday.

He reveals that the drug companies involved have not paid for any of his treatment and calls for them to face

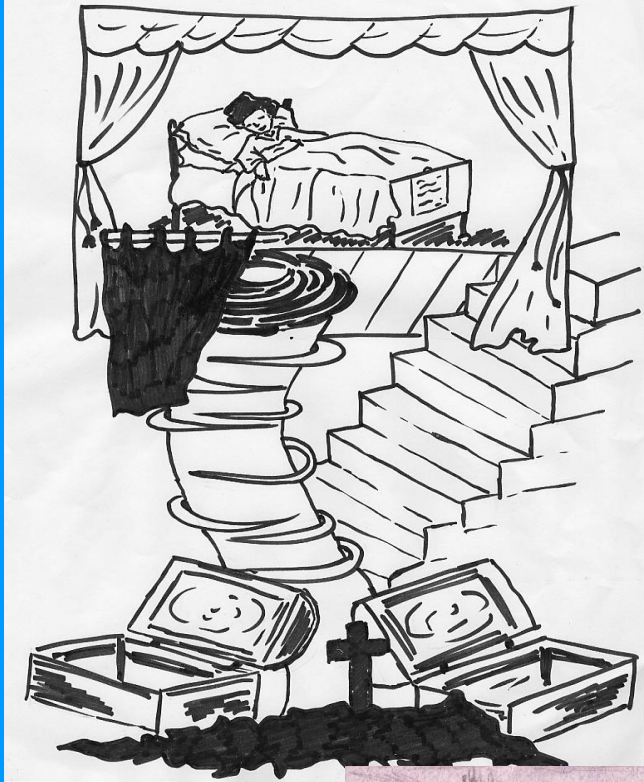
Continued on Page 8



**His Gorgeousness Prince
Charles and me ... by
the Royal Bridget Jones**

Page 3 and **Review** Pages 45, 46, 47, 48

**S
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I cant go, I havent seen satch.

**W
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H**

CASE HISTORY 1

- Mrs R G Bargey aged 39 in 1986 at St Elsewhere's
- Admitted for HYSTERECTOMY
- PH obese
depression
- OPERATION difficult due to bleeding
- POST OP Pulmonary oedema
Poor urine output
Admitted to ICU
- ICU 28 days Sedated
Ventilated 24 days
Tracheostomised 7 days
Inotropes
Antibiotics
Ureterostomy
- POST ICU left hospital 3/12

PHENOPERIDINE

+

PANCURONIUM

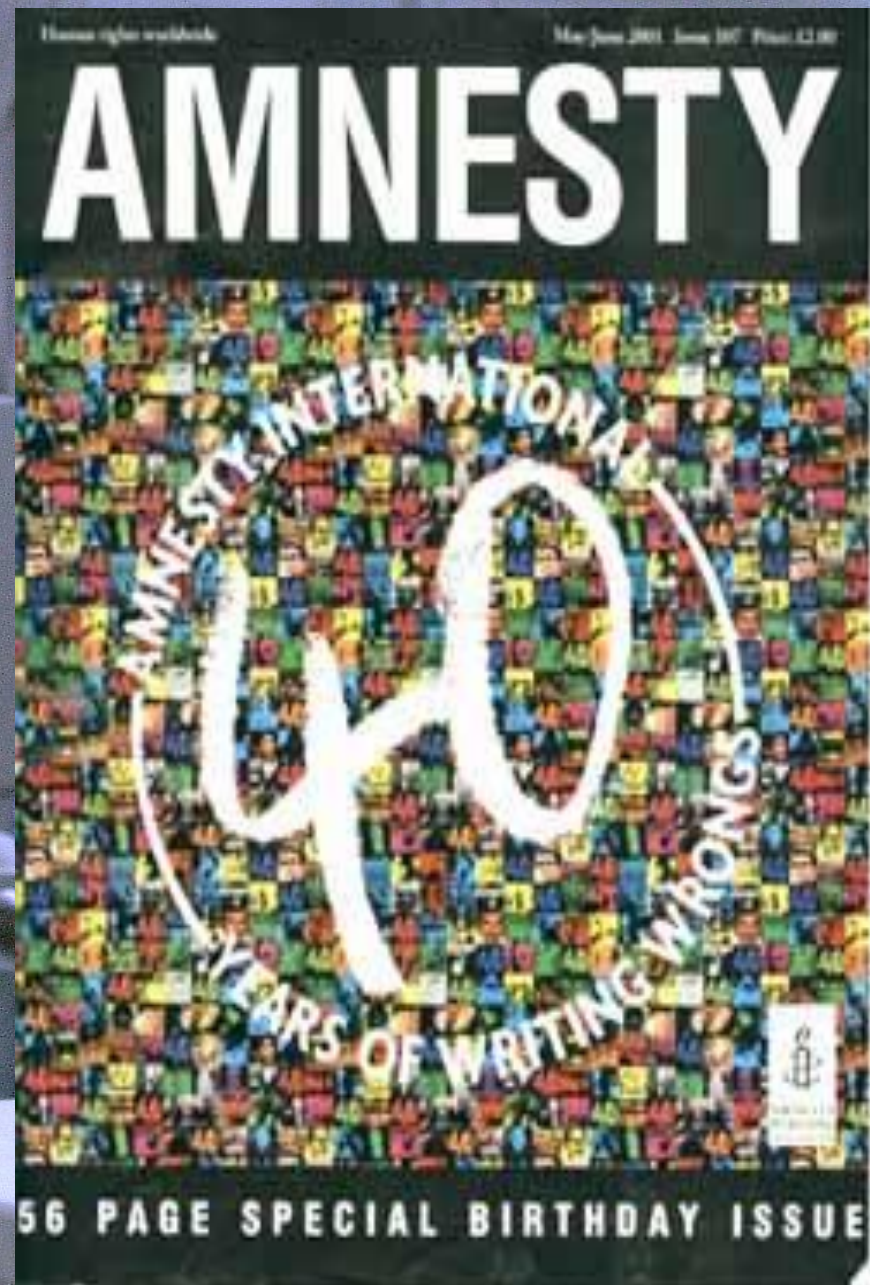
RECENT SURVEY IN ITALY

PANCURONIUM

10% of Doctors thought this was a good analgesic and 20% thought it was good for agitation.

Remembers
‘being bagged’
tape-measure

**Subsequently sued the
hospital for mental torture.
Out of court settlement
£30,000 by Trust.**



TORTURE

Isolation

Debility/exhaustion

Threats

Occasional indulgences

Degradation

INTENSIVE CARE

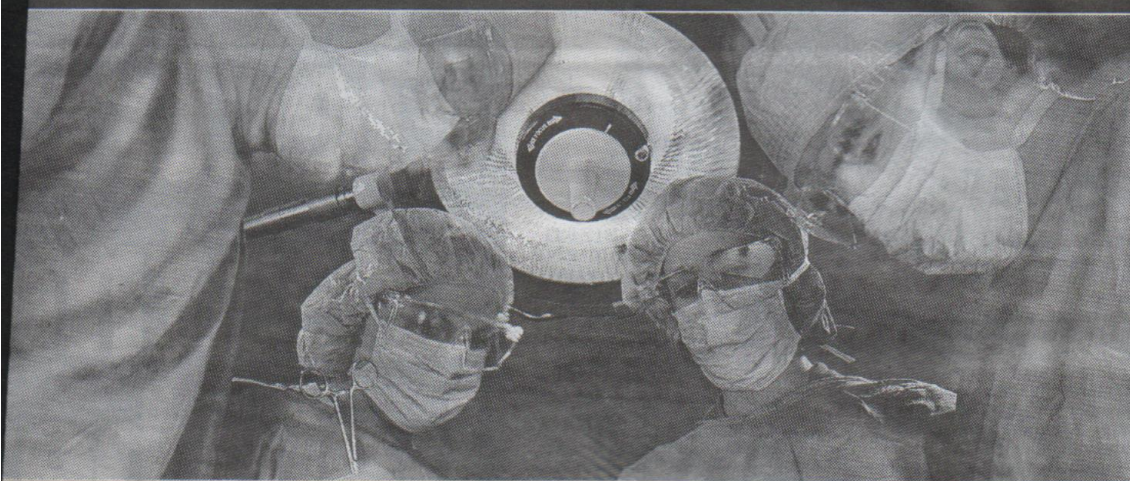
Solitary confinement

Starvation, sleep deprivation

Threats of death, pain

Promises for compliance

No privacy



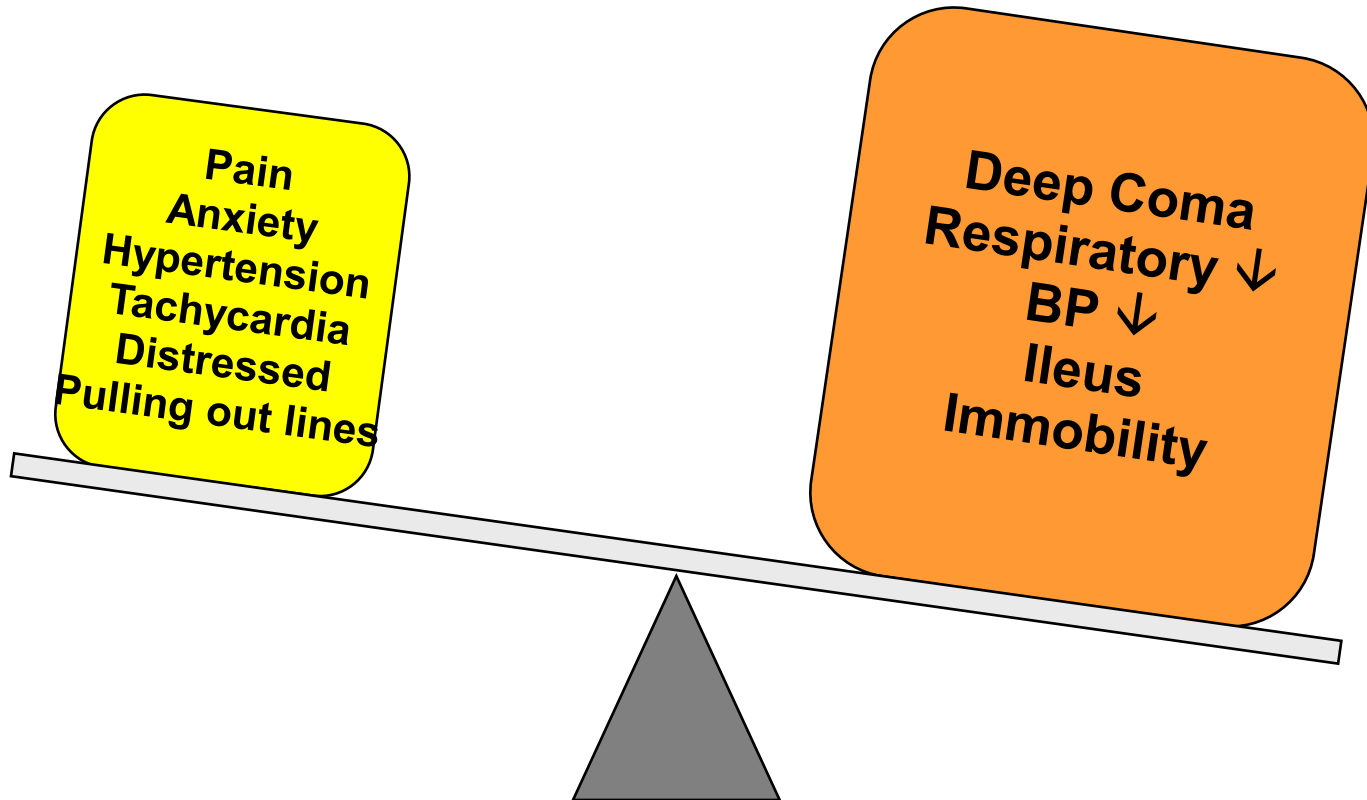
Picture posed by model: GETTY

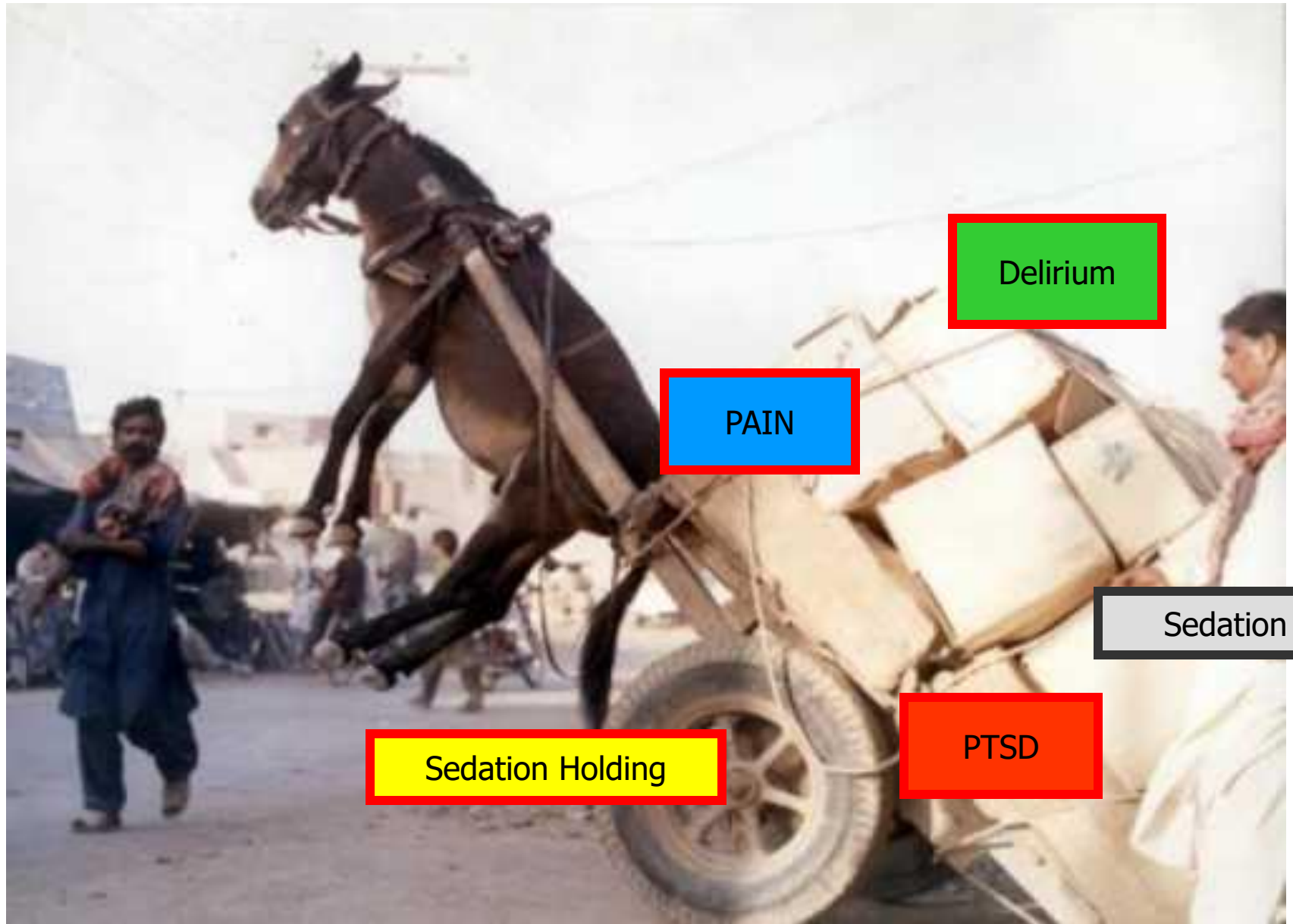
Bizarre delusions. Awful dreams. Why IS intensive care a living nightmare for so many patients?

...Laura Barnett, who runs the
chiatric care, or needing antide-
pressants, or it might mean they

Under-sedation

Over-sedation





Delirium

PAIN

Sedation

Sedation Holding

PTSD





**PTSD
SCALE**

15

DELUSIONS

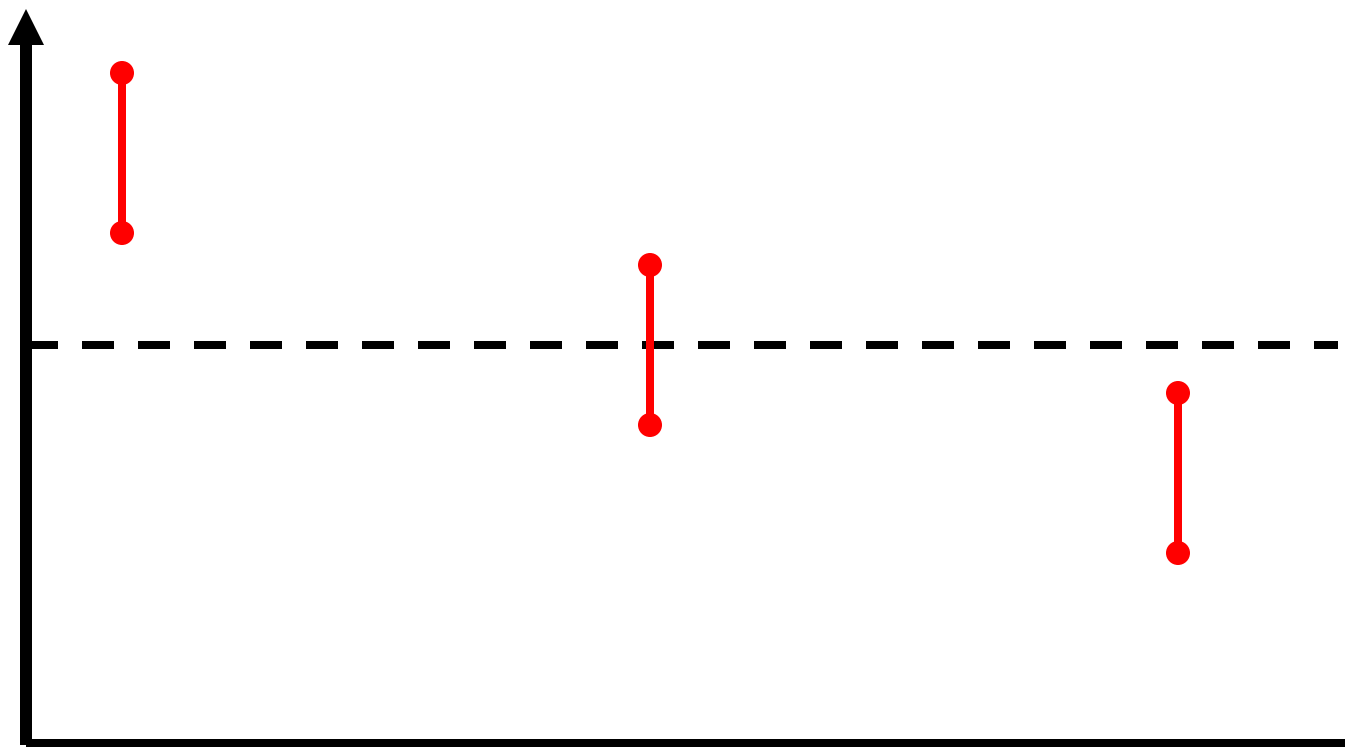
No Recall

DELUSIONS

Recall

NO

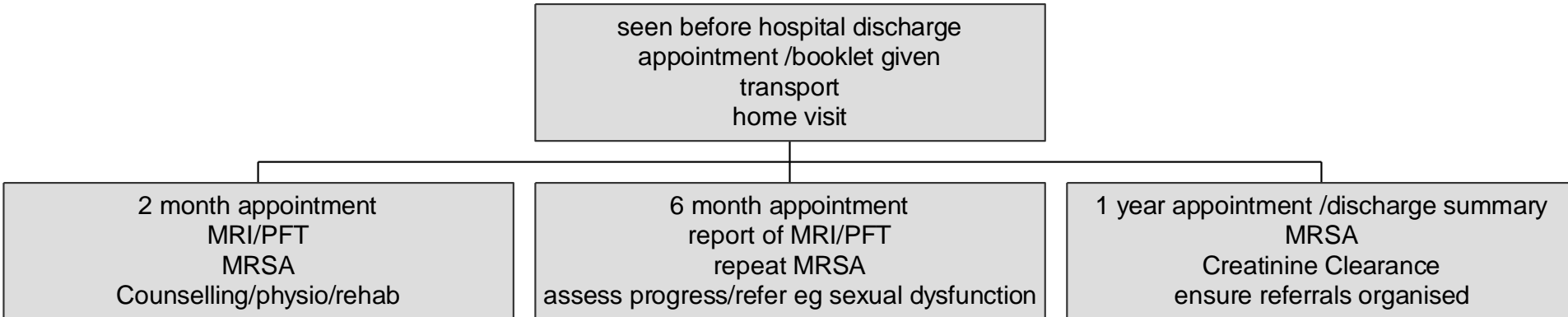
DELUSIONS





Intensive Aftercare After Intensive Care

FUC appointments





Case 2 Age 39yr married 2 children Painter and Decorator

- ICU for 69 days Steven-Johnson after amoxil
- ALI VAP Tracheostomy by ENT
- Multiple bronchial casts
- Oesophageal stricture PEG
- Inotropes CVVHF
- Severe ophthalmic signs, skin/joint/pain

Case 2

- Seen in ICU Follow up poor eyesight, pain, contractures, SOBE, PTSD, inability to swallow –PEG, poor QOL
- Only followed up by Eye doctors
- Needed to organise Resp, Dermatology Pain and ENT referrals as well as physio and counselling for PTSD
- Mortgage company uncooperative and didn't classify **SJS** as a critical illness.
- Feels completely unsupported and is now questioning wisdom of the £120,000+ to keep him alive

Dear I.C.U Follow up team,

I would just like to write a few words to say thank you to all the team for all the help and support over the last year or so.

The biggest help has been after each visit. Any concerns or problems that I may have had with my rehabilitation has been dealt with brilliantly. If appointments had been slow or forgotten about, Mr (and the team) have chased it up 3 to 5 days I've had appointments through the post. It possible has been done so slip through the net!

Many thanks again!

Yours (still living!!)

B A

Critically Ill patients are at high risk of serious neurological complications including long-term cognitive impairment

LTCI

LTCI

- De novo cerebral atrophy
- Delirium may be the cause
- ARDS, Sedation weaken links between cerebral cortical regions and ascending reticular activating system (ARAS)
- Independent predictor of mortality

Russell, Singer et al Changing pattern of organ dysfunction in early human sepsis is related to mortality. Crit Care Med 2000 28 3405-3411



VIDEO CLIP

Long term effects

- Anecdotal evidence from running follow-up
 - Forgetful of appointments
 - forgetting to put the water in the kettle
 - Poor recall for telephone numbers
 - Need lots of rehearsal to get things into long term memory
 - Unable to change to a new mobile phone (40 year old woman)
 - Unable to cope with divided attention (changing gear on car ended up on other side of road!)

Neurocognitive Sequelae

1. Physical
2. Critical Illness Neuropathy
3. PTSD
4. Cognitive deficits

What are the current tools used in critical care

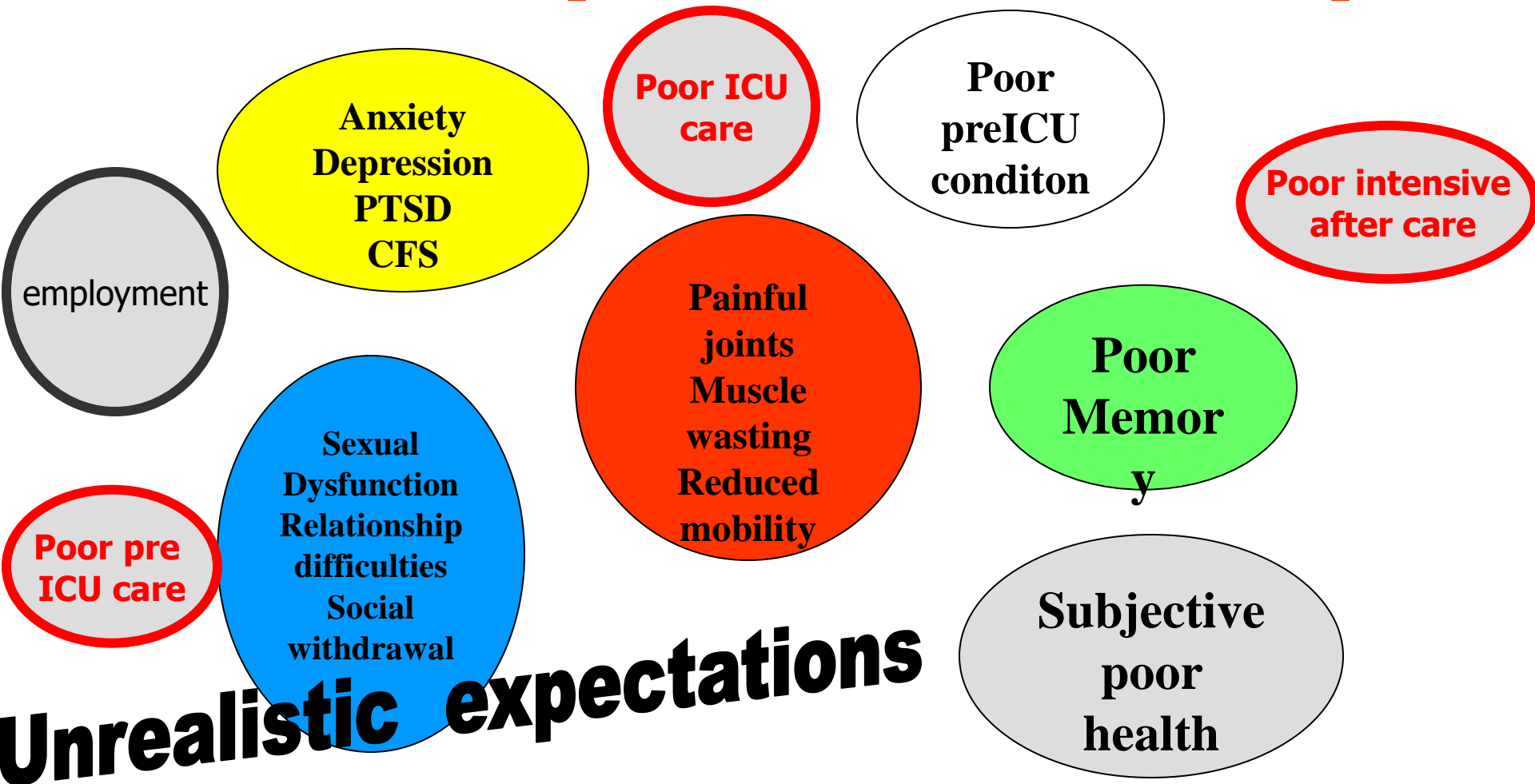
SUBJECTIVE

- PQOL
- HAD
- NHP
- EUROQOL
- EQ5D
- Are they the right tools for the job?

OBJECTIVE

- QALY
- SAVE
- LIFE-YEARS Saved
- SOCIETAL working

Factors affecting recovery from ICU stay



Research by the Department of Work and Pensions shows that one million people on Incapacity Benefit want to return to work and are being prevented from doing so by the system and by the lack of proper rehabilitation.

There continues to be a serious gap in the provision and availability of Rehabilitation

Critical Care Medicine 2003,
31 2456-2461

**Rehabilitation after critical illness:
a randomised, controlled trial.**

**C.Jones, P.Skirrow, R.D.Griffiths, G.Humphris,
S.Dawson, P.White, J.Edleston, C.S.Waldmann,
M.Gager, H.Hutchinson & A.Lloyd**

ICU Manual

- **Book 1** exercise record, fitness plan, smoking, anxiety, physical problems
- **Book 2** Self help advice, nutrition, sexual dysfunction
- **Book 3** Graded Exercise Physiotherapy directed program use RPE or rating of perceived exertion
- 3 centre study demonstrated improved rate of physical recovery using SF36 compared to controls
- PTSD incidence less at 2 months but the same at 6 months

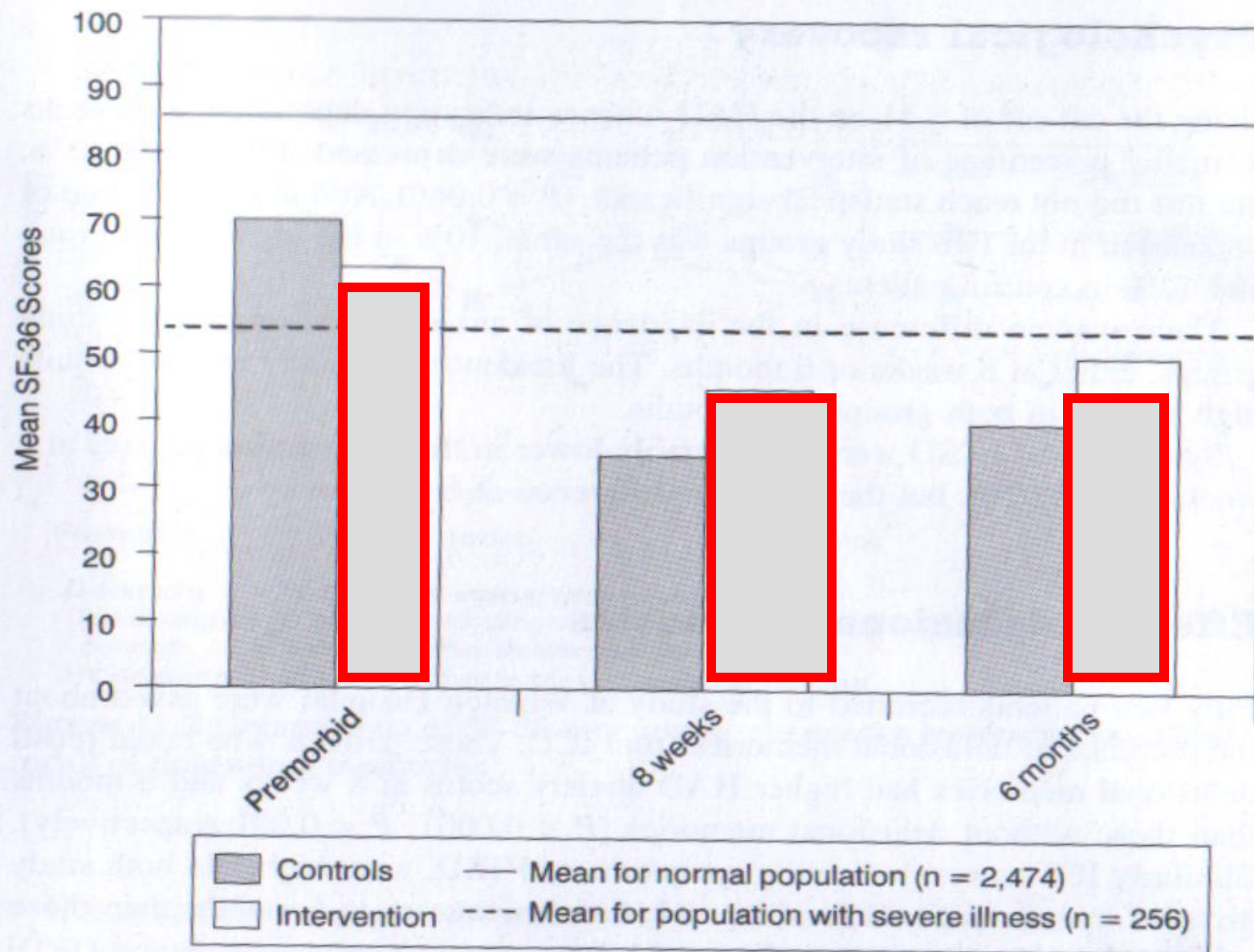


Figure 11.1 SF-36 physical function scores (mean) over time by study group

CLINIC

upset at:

- **Taste loss and Poor appetite**
- **Skin/hair/nail disorders**
- **Ill-fitting clothes**
- **Sexual dysfunction**
- **Dreams/nightmares/bad memories or no memory in 84 of a series of 156**
- **No windows, clocks on ICU**
- **Pulse oximeter on same finger all week**

FOLLOW-UP CLINIC

NURSING	£18,000
----------------	----------------

MEDICAL	£ 6,000
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ADMINISTRATION	£ 4,000
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LAB TESTS & X-RAYS	£ 2,000
-------------------------------	----------------

TOTAL	£30,000
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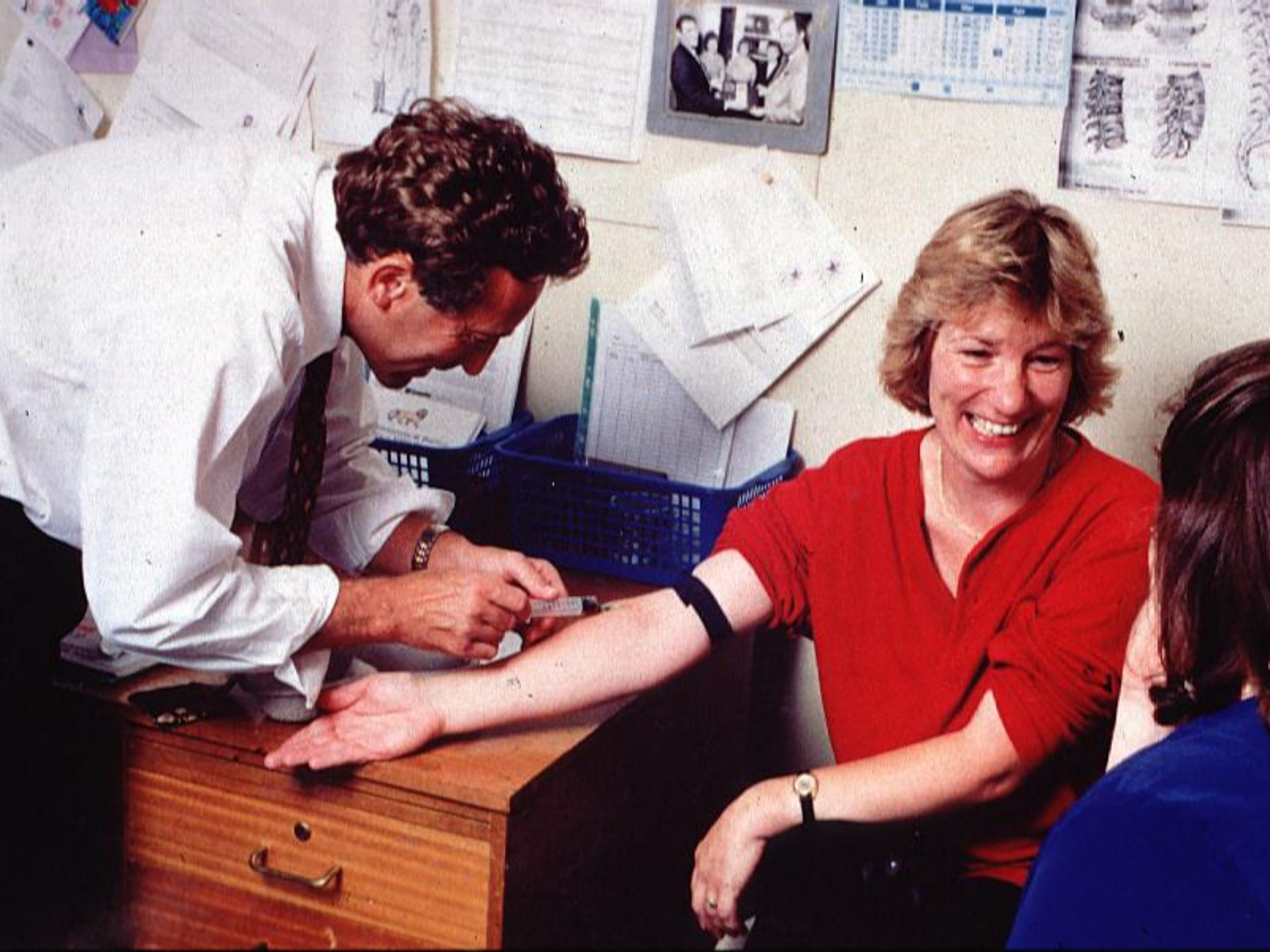
ANNUAL ICU BUDGET 10 BED

NURSING STAFF	£2.0 Million
MEDICAL STAFF	£0.75 Million
SUPPORT STAFF	£0.2 Million
ADMINISTRATION	£0.2 Million
CONSUMABLES/DRUGS	£0.75 Million
EQUIPMENT/MAINTENANCE/CIS	£0.6 Million

TOTAL £4.5 Million

£1500 daily

- **Cannot get rehab for multiorgan failure**
- **Good rehab for Myocardial Infarct**
- **Good neurorehab for CVAs**
- **Good back-up for asthma and resp disease**
- **Post ICU waiting list of 3 months for physiotherapy**



The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812

FEBRUARY 20, 2003

VOL. 348 NO. 8

One-Year Outcomes in Survivors of the Acute Respiratory Distress Syndrome

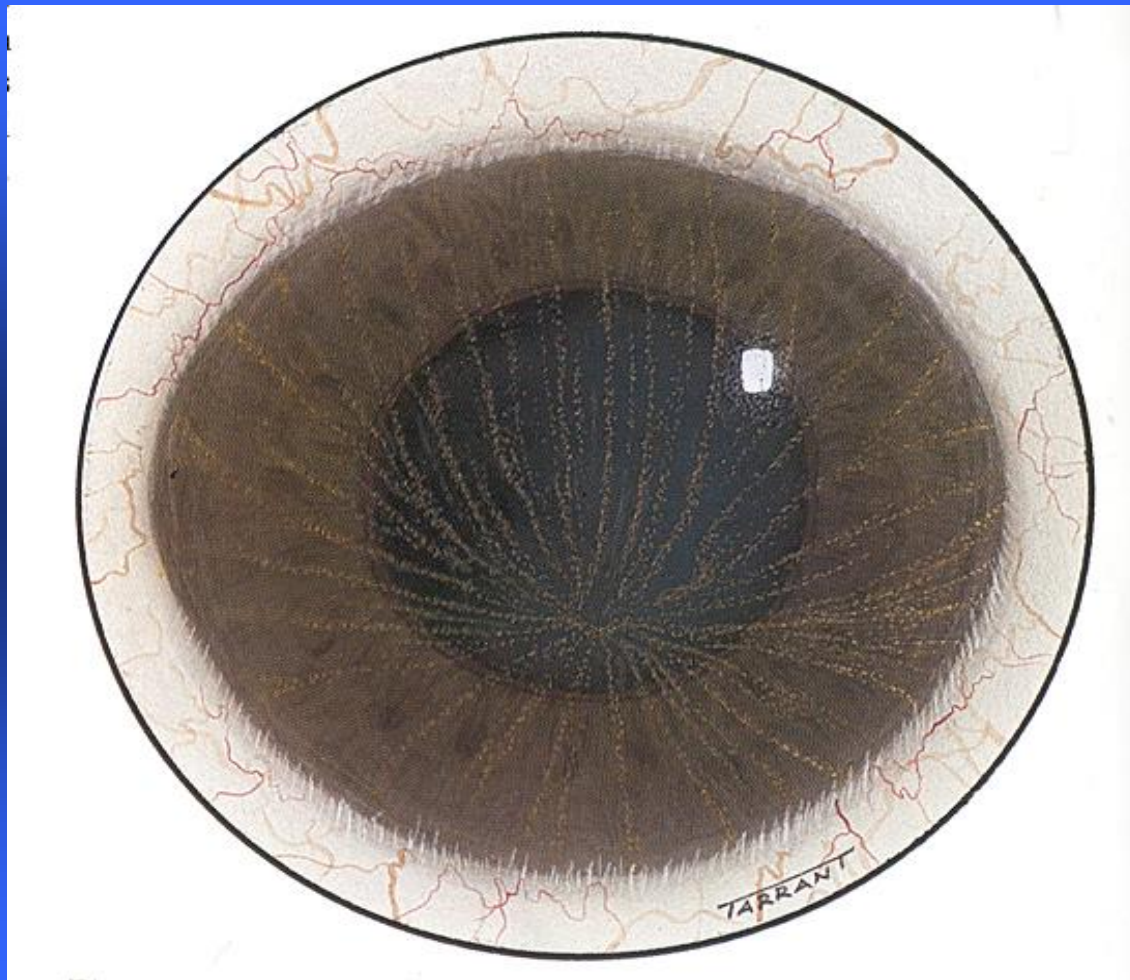
Margaret S. Herridge, M.D., M.P.H., Angela M. Cheung, M.D., Ph.D., Catherine M. Tansey, M.Sc.,
Andrea Matte-Martyn, B.Sc., Natalia Diaz-Granados, B.Sc., Fatma Al-Saidi, M.D., Andrew B. Cooper, M.D.,
Cameron B. Guest, M.D., C. David Mazer, M.D., Sangeeta Mehta, M.D., Thomas E. Stewart, M.D., Aiala Barr, Ph.D.,
Deborah Cook, M.D., and Arthur S. Slutsky, M.D., for the Canadian Critical Care Trials Group

CONCLUSIONS

Survivors of the acute respiratory distress syndrome have persistent functional disability one year after discharge from the intensive care unit. Most patients have extrapulmonary conditions, with muscle wasting and weakness being most prominent.

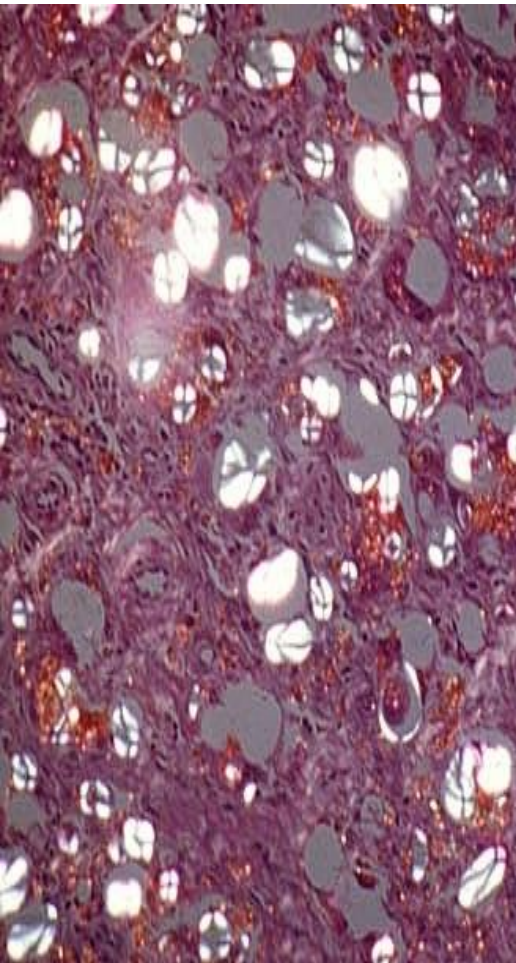


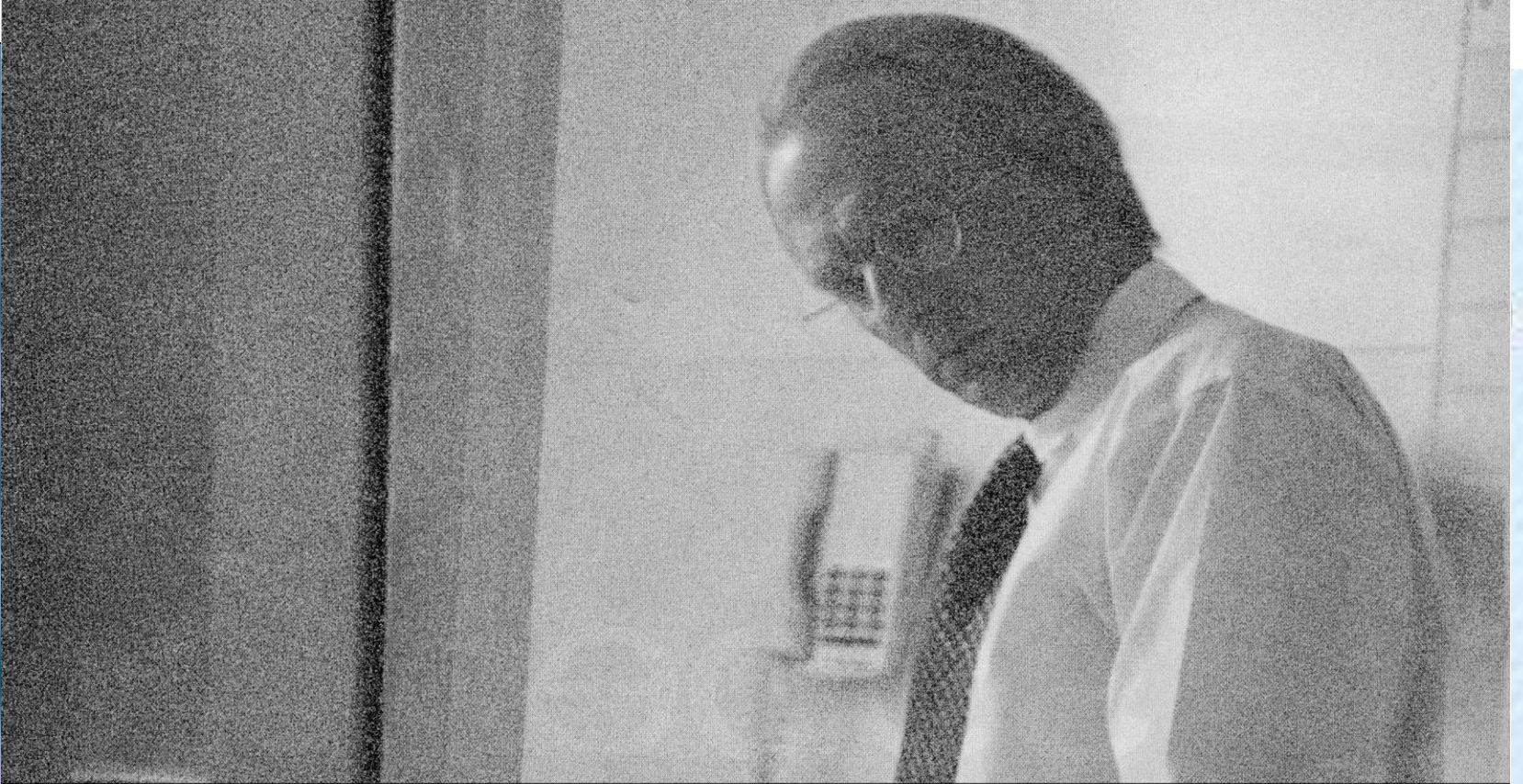




PRUF

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OFFICIAL JOURNAL OF
THE EUROPEAN SOCIETY
OF INTENSIVE CARE MEDICINE
AND

EUROPEAN SOCIETY
OF INTENSIVE CARE
MEDICINE

THE EUROPEAN SOCIETY
OF PAEDIATRIC
& NEONATAL
INTENSIVE CARE



VOLUME 32
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MARCH
2006

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Online First
www.intensivecaremedicine.com

Springer



Intensive Care Med (2006) 32:445-451
DOI 10.1007/s00134-005-0048-7

ORIGINAL

John Griffiths
Melanie Gager
Nicola Alder
Derek Fawcett
Carl Waldmann
Jane Quinlan

A self-report-based study of the incidence and associations of sexual dysfunction in survivors of intensive care treatment

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Accepted: 16 December 2005
Published online: 16 February 2006
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Electronic supplementary material

The electronic reference of this article is <http://dx.doi.org/10.1007/s00134-005-0048-7>. The online full-text version of this article includes electronic supplementary material. This material is available to authorised users and can be accessed by means of the ESM button beneath the abstract or in the structured full-text article. To cite or link to this article you can use the above reference.

J. Griffiths (✉) · J. Quinlan
The John Radcliffe Hospital,
Nuffield Department of Anaesthetics,
University of Oxford,
Headley Way, Headington, OX3 9DU
Oxford, UK
e-mail: john.griffiths@nda.ox.ac.uk

M. Gager · D. Fawcett · C. Waldmann
The Royal Berkshire Hospital,
London Road, RG1 5AN Reading, UK

N. Alder
University of Oxford,
Centre for Statistics in Medicine,
Wolfson College,
OX2 6UD Oxford, UK

Abstract Objectives: To determine the incidence and associations of sexual dysfunction in survivors of intensive care unit treatment in their first year after hospital discharge using a self-report measure. **Design:** A prospective observational study. **Setting:** ICU Follow-up Clinic, The Royal Berkshire Hospital, Reading. **Subjects:** One hundred and twenty-seven patients aged 18 years and over who spent 3 days or more in the intensive care unit. **Main outcome measures:** Demographic data; reported incidence of sexual dysfunction and post-traumatic stress disorder symptomatology; association between reported sexual dysfunction and age, gender, post-traumatic stress disorder symptomatology and length of intensive care unit stay; patient and partner satisfaction with current sex life. **Results:** Fifty-two patients (43.6%) reported symptoms of sexual dysfunction. There was a significant association between sexual dysfunction and post-traumatic stress disorder symptomatology

($p = 0.019$). There was no association between reported sexual dysfunction and gender ($p = 0.33$), age ($p = 0.8$) or intensive care unit length of stay ($p = 0.41$). Forty-five per cent of patients and 40% of partners were not satisfied with their current sex life. No other medical practitioner had sought symptoms of sexual dysfunction during the study period. **Conclusions:** Symptoms of sexual dysfunction are common in patients recovering from critical illness and appear to be significantly associated with the presence of post-traumatic stress disorder symptomatology. The intensive care unit follow-up clinic is a suitable forum for the screening and referral of patients with sexual dysfunction.

Keywords Intensive care · Sexual dysfunction · Health-related quality of life · Post-traumatic stress disorder

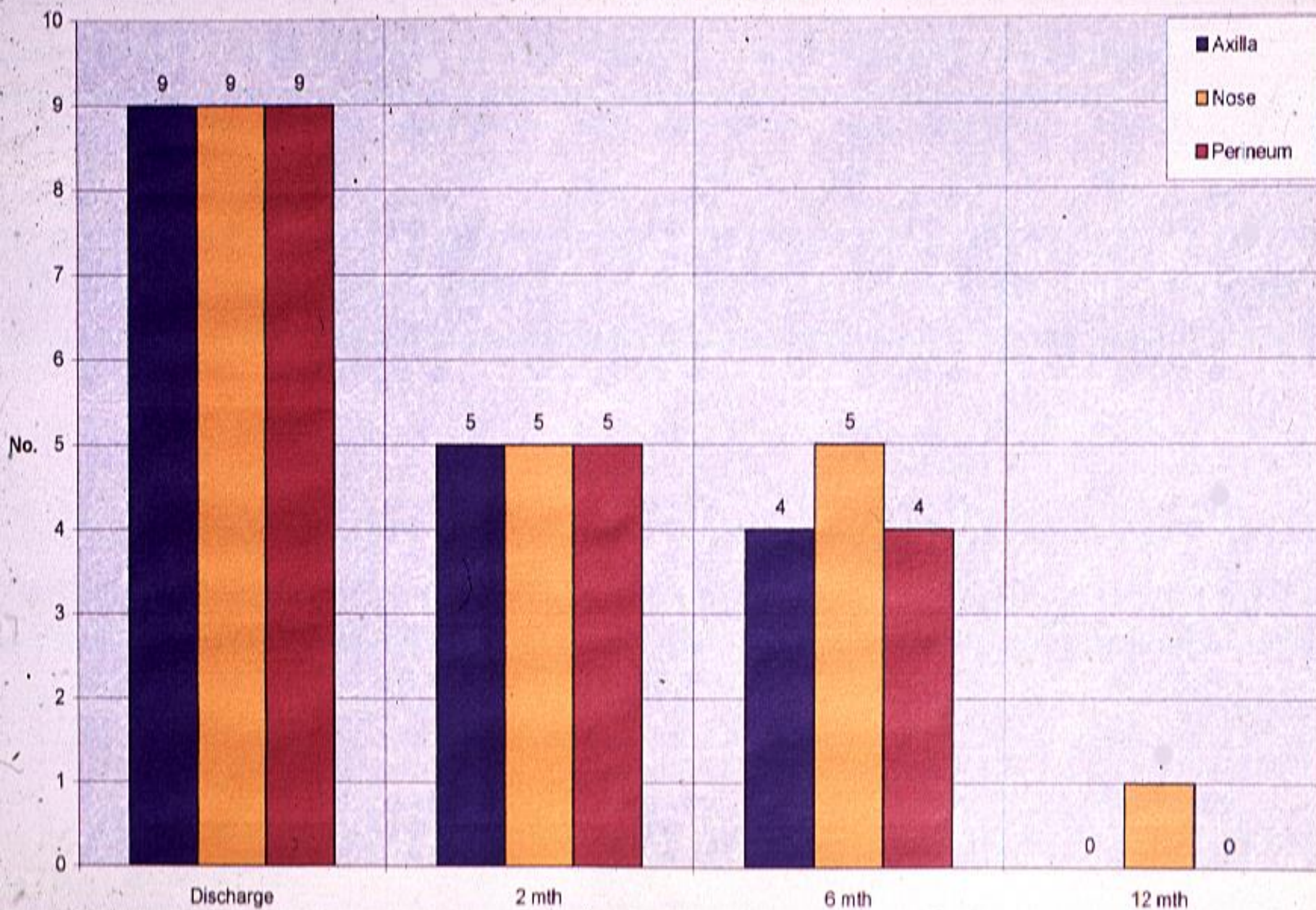
Introduction

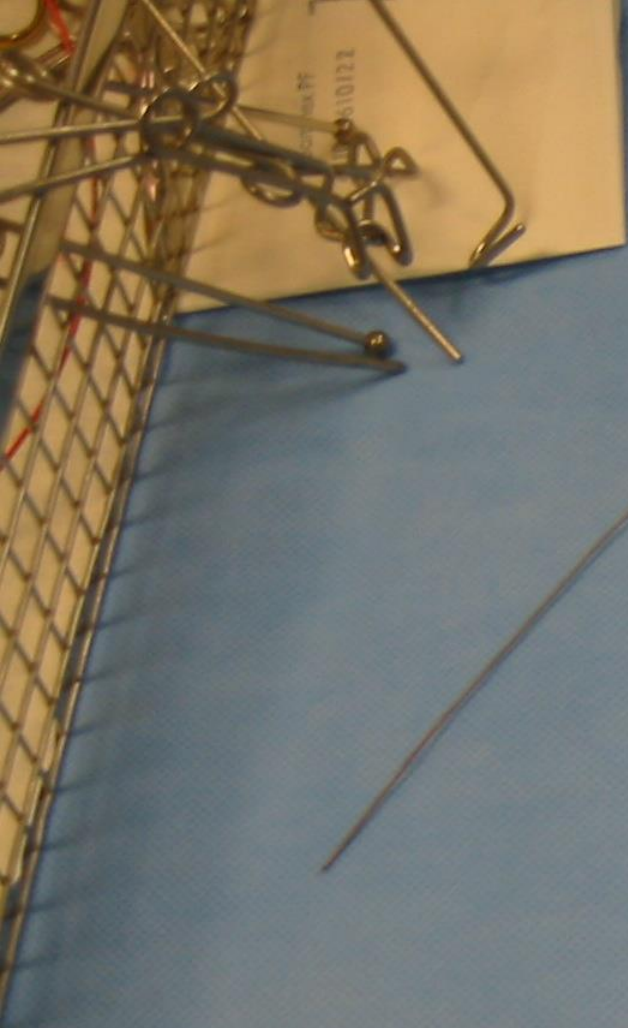
A modern intensive care unit (ICU) offers a wide spectrum of potentially life-saving and life-prolonging treatments and interventions. However, interventions that can maintain life in the critical care setting may result in a health state valued worse than death [1, 2]. A recent consensus conference concluded "future outcome evaluation of intensive care should incorporate quality of life measures" [3].

Healthy sexual function requires both physical and psychological integrity and is, potentially, a sensitive measure of a patient's health-related quality of life (HRQL). Sexual dysfunction has previously been identified in patients with cancer [4, 5], neurological disease [6, 7], and after surgery [8, 9], major trauma [10], and spinal cord injury [11]. Questions pertaining to sexual dysfunction often form part of a full quality-of-life assessment of survivors of intensive care [12]. In the 12 months follow-

Follow Up of MRSA Positive Patients

C Stonell, M Gager, C Waldmann.







REFERRALS

26 for 11 patients

ENT	10
PTSD	6
PAIN	2
OPHTHALM	2
UROLOGIST	1
OBSTETRICIAN	1
GENERAL SURGEON	1
MICROBIOLOGIST	1
DERMATOLOGIST	1
REHAB PHYSICIAN	1

ICU

Joe 2

Patient Information Booklet



INTENSIVE CARE UNIT
ROYAL BERKSHIRE & BATTLE HOSPITAL NHS
TRUST

1

y by ambulance. You had difficulty
ls

Care Unit.

October 2001)

central line was inserted into the
three further lines allowing us to
ould also connect it to the monitor
cating whether you were
ch fluid in your system).

arterial line; this allowed us to take
tor to give a constant read-out of

electrodes to the monitor gave a
n.

ed on your finger, again connected
saturation readings.

Palliative &
Cancer Care

Neurorehab

Respiratory
rehab

Rehab ICU follow up?

Cardiac
Rehab
Rx
comorbidity

6

Stomatherapy
Nutrition

- Intensive aftercare
- Outcomes measures identified significant morbidity and health restrictions daily distress and 20% serious disability and



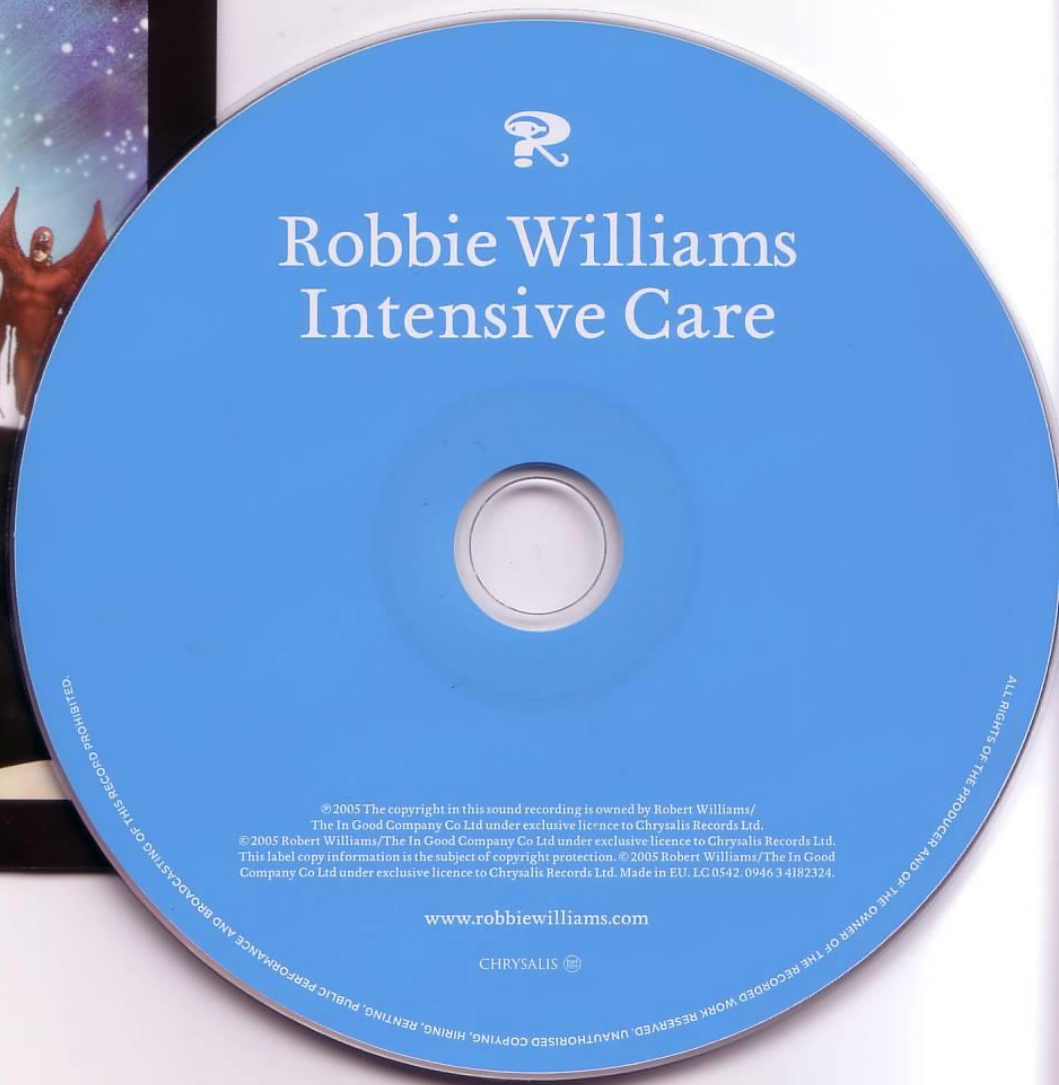
Social Services

- Doctors and Nurses need ICU follow up

Physio &
Occ Health &
District
Nurse

GP??
ICU


- Patients U follow up rehab



Robbie Williams Intensive Care

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CHRYSLIS 



Anaesthesia

Journal of the Association of Anaesthetists of
Great Britain and Ireland

Volume 59, Number 11, November 2004

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**Griffiths J A, Barber V S, Cuthbertson B H,
& Young J D**

**A national survey of intensive care
follow-up clinics.**

***Anaesthesia* 61; (10): 950-955.**

Summary of findings

- Clinics are not widely established
- Marked heterogeneity in approach
- Majority see patients >3 days on ICU
- Only two thirds are currently funded
- Financial constraints main limiting factor
- Over half of the clinics do not have a pre-negotiated access to another outpatient service

A **P**ragmatic **R**andomised, **C**ontrolled
Trial of an **I**ntensive **C**are follow up
programme in improving **L**onger-term
outcomes from critical illness
(**PRaCTICaL** study)



Brian H Cuthbertson
Professor of Critical Care
Health Services Research Unit
University of Aberdeen

The PRaCTICaL study of nurse led, intensive care follow-up programmes for improving long term outcomes from critical illness: a pragmatic randomised controlled trial

B H Cuthbertson, chief of critical care medicine and professor of anaesthesia,¹ J Rattray, senior lecturer,² M K Campbell, director and professor,³ M Gager, intensive care follow-up nurse,⁴ S Roughton, intensive care follow-up nurse,^{3,5} A Smith, intensive care follow-up nurse,² A Hull, consultant psychiatrist,⁶ S Breeman, trial manager,³ J Norrie, professor of biomedical statistics,⁷ D Jenkinson, statistician,³ R Hernández, health psychologist,^{3,8} M Johnston, professor of health psychology,⁹ E Wilson, consultant in anaesthesia and intensive care,¹⁰ C Waldmann, consultant in anaesthesia and intensive care⁴ on behalf of the PRaCTICaL study group

Objectives To test the hypothesis that nurse led follow-up programmes are effective and cost effective in improving quality of life after discharge from intensive care.

Design A pragmatic, non-blinded, multicentre, randomised controlled trial.

Setting Three UK hospitals (two teaching hospitals and one district general hospital).

Participants 286 patients aged ≥ 18 years were recruited after discharge from intensive care between September 2006 and October 2007.

Intervention Nurse led intensive care follow-up programmes versus standard care.

Main outcome measure(s) Health related quality of life (measured with the SF-36 questionnaire) at 12 months after randomisation. A cost effectiveness analysis was also performed.

Aim

to test the hypothesis that a nurse-led intensive care follow programme is effective and cost-effective at improving physical and psychological quality of life in the year after intensive care discharge

Design and Interventions

- A UK pragmatic, multi-centre, randomised controlled trial
- Eligible patients were randomised to one of two intervention groups after ICU discharge but prior to hospital discharge

Targeted patient number and duration

- Power calculation
- 270 patients (135 per group)
- 27 months total duration
- The Intervention:-
 1. *Case review*
 2. *Discussion of ICU experiences and satisfaction with care*
 3. *Formal assessment of requirement for specialist medical referral*
 4. *Psychological screening for morbidity relating to ICU admission*
 5. *Review of current drug therapy*
 6. *ICU visit if appropriate*
 7. *Physiotherapy or occupational therapy treatment if appropriate*
 8. *Review letter to the GP on the patient's progress and plan*

Cost-effectiveness

	Total Mean Cost	Cost diff	Total Mean QALYs	QALY diff	ICER
Standard care	£3,738		0.62		
Clinics	£5,859	£2,121	0.64	0.011	dominated

Conclusion

- In level 3 ICU patients, nurse led ICU follow up over the first year after ICU discharge is not efficacious or cost-effective
- Existing ICU follow up services that use a nurse-led system should review their practice

Cost of Rehabilitation

- The costs of in patient specialist neurorehabilitation in the private sector ~>£4,000 per week (up to £12,000 at places like the Wellington for pts with cuffed trache and PEG)
- In NHS should be the cost of an acute hospital bed with 2 - 3 hours of therapy on top
- OP Physio about £70/hr
- OT, S<, PHYSIOS, PSYCHOS, COUNSELLORS

THE LANCET

The Lancet, Early Online Publication, **14 May 2009**
doi:10.1016/S0140-6736(09)60658-9

[Cite or Link Using DOI](#)

Early physical and occupational therapy in mechanically ventilated, critically ill patients: a randomised controlled trial

[William D Schweickert MD a](#), [Mark C Pohlman MD b](#), [Anne S Pohlman MSN b](#), [Celerina Nigos RN b](#), [Amy J Pawlik PT c](#), [Cheryl L Esbrook OTR/L c](#), [Linda Spears PT c](#), [Megan Miller OTR/L c](#), [Mietka Franczyk PT c](#), [Deanna Deprizio OTR/L c](#), Prof [Gregory A Schmidt MD d](#), [Amy Bowman BSN d](#), [Rhonda Barr PT e](#), [Kathryn E McCallister BS b](#), Prof [Jesse B Hall MD b](#), Dr [John P Kress MD b](#)

A strategy for whole-body rehabilitation—consisting of interruption of sedation physical and occupational therapy in the earliest days of critical illness—was safe and well tolerated, and resulted in better functional outcomes at hospital discharge, a shorter duration of delirium, and more ventilator-free days compared with standard care

Critical illness rehabilitation

Implementing NICE guidance

2009

NICE clinical guideline XX



TEAMWORK?





Background

- Approximately 140,000 people are admitted into critical care units in England and Wales each year.
- Most patients surviving critical illness have significant physical and non-physical morbidity and undergo a lengthy convalescence.
- This morbidity is frequently unrecognised and, if identified, may not be appropriately assessed or managed.

Patients referred for rehabilitation

140000 ICU admissions pa

35000 die

105000
survive

25000 stay
> 35 days

50000 stay in hospital
>17 days

.Targetted at patients
who have been in ICU
For greater than 5 days

Scope

The recommendations are for adults with rehabilitation needs as a result of a period of critical illness that required level 2 and level 3 critical care.



Recommendations

The recommendations cover the following areas:

1. key principle of care
2. during the critical care stay
3. before discharge from critical care
4. during ward-based care
5. before discharge to home or community care
6. 2-3 months after discharge from critical care

Critical Care Follow Up Assessment

Name:		Consultant:		Ward:	
Hospital No: M /		Date of Birth: / /			
Critical Care Discharge Date		Assessment Date & Time			
ICU History:		Intubated			
PMHx:		Length of Intubation: LOS:			
A		RR- bpm		Nutrition	
Tracheostomy:		HR- bpm		MUST: Score:	
B)Sao2: Score:		BP- mmHg		Mobility	
FIO2:		CRT-		Dalteparin <input type="checkbox"/> TEDS <input type="checkbox"/>	
C)		Temp- °C		Score: Psych	
Fluid Balance:		GCS- /15		A: Score: D: Score	
D)		EWS-		Score:	
Blood Sugar:		Bloods		Lines	
Current issues:				Microbiology	
Plan:					
Assessor					

Date / Time

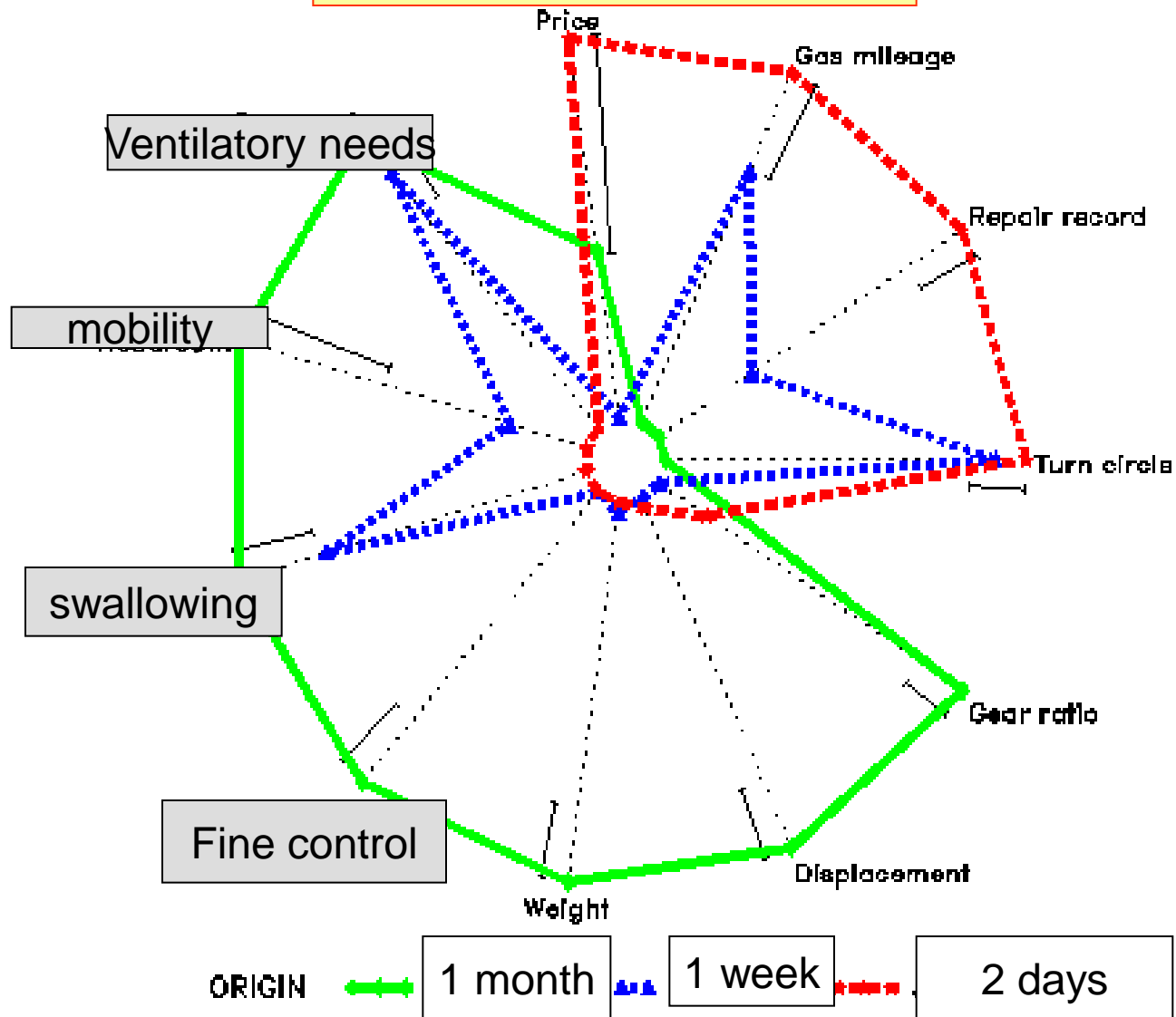
Date / Time

Date / Time

CPEX post resp failure

	CASE 1 Wiel's	CASE 2 CaOesophagus	CASE 3 AI SVT Hypertension
APACHE II on admission	7	17	19
Time of CPET post-ICU (month)	3, 7,12	7, 17	5, 9, 22
Subjective perception of recovery (month post-ICU)	7	7	9
Best CPET result (month post-ICU)	12	17	22
Stabilisation of cardio-pulmonary response (plateau in CPET results)	Not achieved	7-17 months	9-22 months
Organ system limiting exercise tolerance	Psychogenic	Extrapulmonary: weight loss	Pulmonary: COPD* Cardiac: heart failure

Starplot of rehabilitation



Key principle of care

- Ensure continuity of care by coordinating the patient's rehabilitation care pathway



Costs per 100,000 population

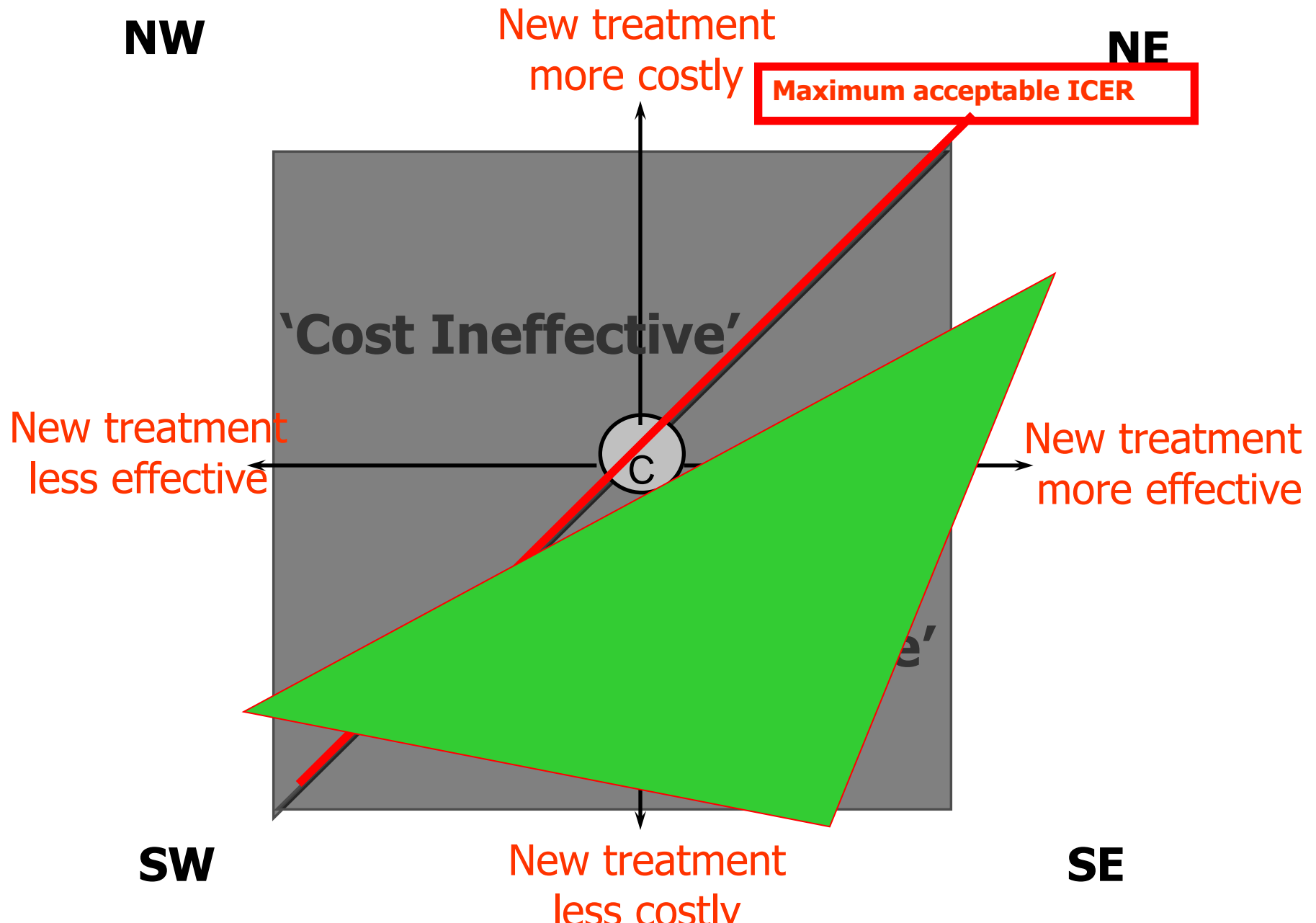
Description	Costs (£000's per year)
Physiotherapists – critical care early intervention	9,869
Clinical Psychologists – hospital and follow up services	7,485
Physiotherapists – community follow up services	9,462
Other therapists, e.g., dietetics, speech and language	1,840
Estimated cost of implementation	28,656



Savings per 100,000 population

Description	Savings (£000's per year)
Annual avoidance of hospital re-admission	-£5,167
Decrease in GP visits	-£3,665
Reduced length of stay on general wards as a result of early mobilisation	-£1,820
Reduced length of critical care stay as a result of early mobilisation	-£18,992
Estimated saving of implementation	-£29,644
Net Savings	-988

The cost-effectiveness plane



Discussion

- How do we currently coordinate the rehabilitation of patients after critical illness?
- How can we ensure adequate provision of a multidisciplinary team to deliver rehabilitation services?
- What is the current provision of community-based rehabilitation services and do we need to improve this?



CriticalPal




I-CANUK

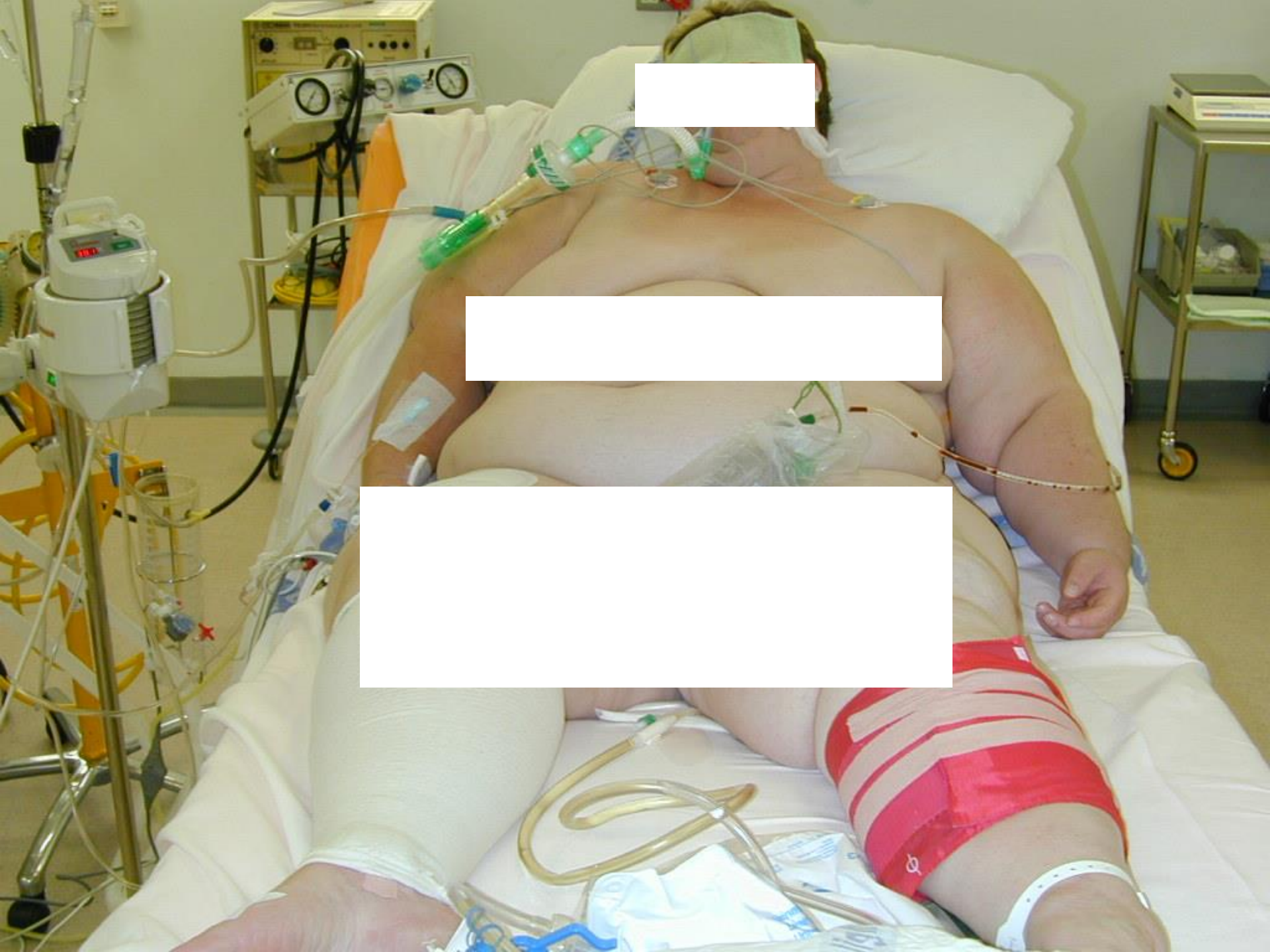
Intensive Care Aftercare Network
Helping to put the pieces back together

DIPEx.org

Mission Statement:

To optimise care and well being for patients and families
who have experienced critical illness
To provide a forum and voice
for the patient and family
in patient care following Intensive Care discharge
To support research into
potential therapies following critical illness







READING
HALF MARATHON
2010

Sunday 21st March 2010

www.marathon-photos.com

How much cost is right?



Ariel Sharon: Still Alive, but Only Just

Sharon Transferred to a Unit for the Long-Term Treatment of Stroke Patients and Has Been There Since

By SARON HADASSAH WOOD

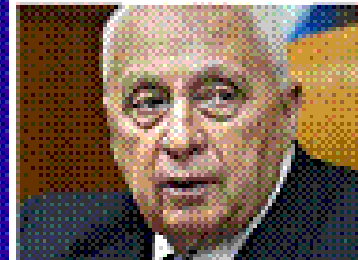
JERUSALEM, Oct. 27, 2014

Comments

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Ariel Sharon is still alive, but only just.



The man whose inspired military leadership and controversial policies earned him the nickname "the Bulldozer" today lies silent and motionless in the latest medical center outside Tel Aviv.

"His condition is like a Greek tragedy," said Dr. Roanan Gonen, his longtime spokesman and friend, in an interview with ABC News. "He is between life and death, not a halfway there, not there."

On Jan. 4, 2006, the prime minister suffered a massive stroke. He has not been seen in

Low spend



High spend

