PRaCTICaL Trial: cost-effectiveness analysis of Intensive Care post-discharge review clinics

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The author accepts full responsibility for this talk.

Background & Aim

- Over 140,000 patients admitted into ICU in UK each year
- 1/3 die within a year
- Survivors → physical and psychological problems (anxiety, depressive and PTSD)
- Implications also on resource used
- To address these → ICU follow up programmes

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Background & Aim (cont.)

- Little evidence but about 80 hospitals have them
- Nature of these programmes varies → no optimal model
- To conduct an economic evaluation alongside a RCT (PRaCTICaL Trial) comparing nurse led intensive care follow up programme with standard care

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The Randomised Controlled Trial (RCT)

- A pragmatic, multi-centre, randomised controlled trial

- To assess: intensive care follow up programmes are effective and cost-effective at improving physical and psychological quality of life in the year after intensive care discharge.

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RCT participants

- Patients recruited from 3 UK hospitals (2 Teaching; 1 District General Hospital).
- Inclusion criteria: patients receiving level 3 dependency (ICU) care at any time during their hospital stay and who survived until hospital discharge
- Exclusion criteria: patients < 18 years, unable to complete questionnaires or attend clinics and who did not consent were excluded

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The Intervention

- Treatment group:
  - on manual based self-directed physical rehabilitation programme (developed by physiotherapists; introduced by a study nurse), starting in hospital and continuing for three months after discharge
  - Patients formally reviewed at nurse led clinic appointments (3 and 9 m)

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The Intervention (cont.)

- Treatment group:
- Clinic components: 1) structured case review, 2) discussion of ICU experiences, 3) formal assessment of need of medical referral, 4) psychological screening 5) drug therapy review, 6) ICU visit if appropriate, 7) physiotherapy treatment if appropriate, 8) review letter to the GP

- Standard care:
  - follow up as standard clinical practice (GP & hospital speciality)

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RCT outcome measures

- Primary outcome measures: physical and mental component scores of the Short Form-36 (SF-36)

- Secondary outcome measures:
  - EQ-5D, Davidson Trauma Scale (DTS); Hospital Anxiety and Depression Scale (HADS) at 6 & 12 months;
  - primary and secondary health care costs in the year after hospital discharge

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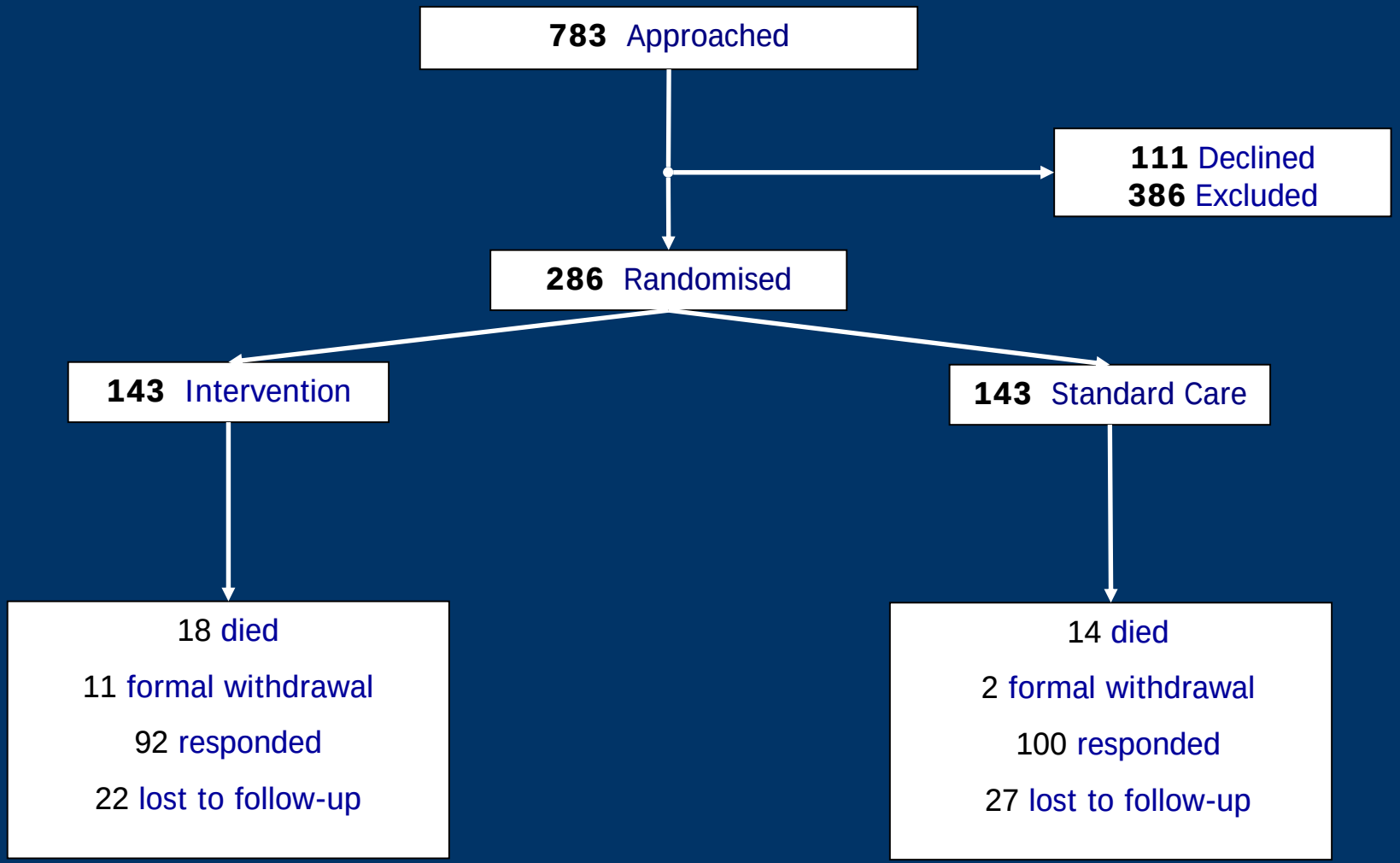

Note:
Protocol expected sample size: 270 recruited for 86 participants per group to be analysed.

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The trial primary outcome

	Intervention			Standard					
	N	Mean	SD	N	Mean	SD	Mean diff	95% CI	p-value
SF-36 PCS (12 months)	90	42.0	10.6	97	40.8	11.9	1.1	(-1.9,4.2)	0.46
SF-36 MCS (12 months)	90	47.1	12.7	97	46.8	12.4	0.4	(-3.0,3.7)	0.83

SF-36 - short form 36; PCS - physical component score; MCS- mental component score. Intention to treat analysis

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Economic Evaluation data

- Health Care resource use: on any contacts made with health services by trial participants
- hospital case notes (e.g. hospital inpatient and outpatient care)
- patient questionnaires (e.g. primary care contacts and medications)
- Intervention: Nurse & Doctor time per clinic (adjusted)
- Unit costs from ISD for Scotland, PSSRU & BNF
- EQ-5D (baseline, 6 & 12 months)

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Analysis: Base case and SA

- Analysis mirrored that of the RCT (reg analysis controlling for randomisation minimisation factors (e.g. gender, age, Apache II, HADS and ICE – also EQ5D at baseline)

- SA:
  - Deterministic (e.g. participants with highest cost as outliers), stochastic (e.g. bootstrapping – 1000 iterations), and combined.

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Economic evaluation results

Treatment	Cost (£)	Cost Diff (£)	QALYs	QALY Diff	ICER*	Probability cost-effective for different threshold values for society's willingness to pay for a QALY (%)			
						10000	20000	30000	50000
Standard Care	4,810		0.426			98.5	97.4	96.0	89.7
ICU clinics	7,126	2,316	0.423	-0.003	dominated	1.5	2.6	4.0	10.3

* Incremental cost-effectiveness ratio

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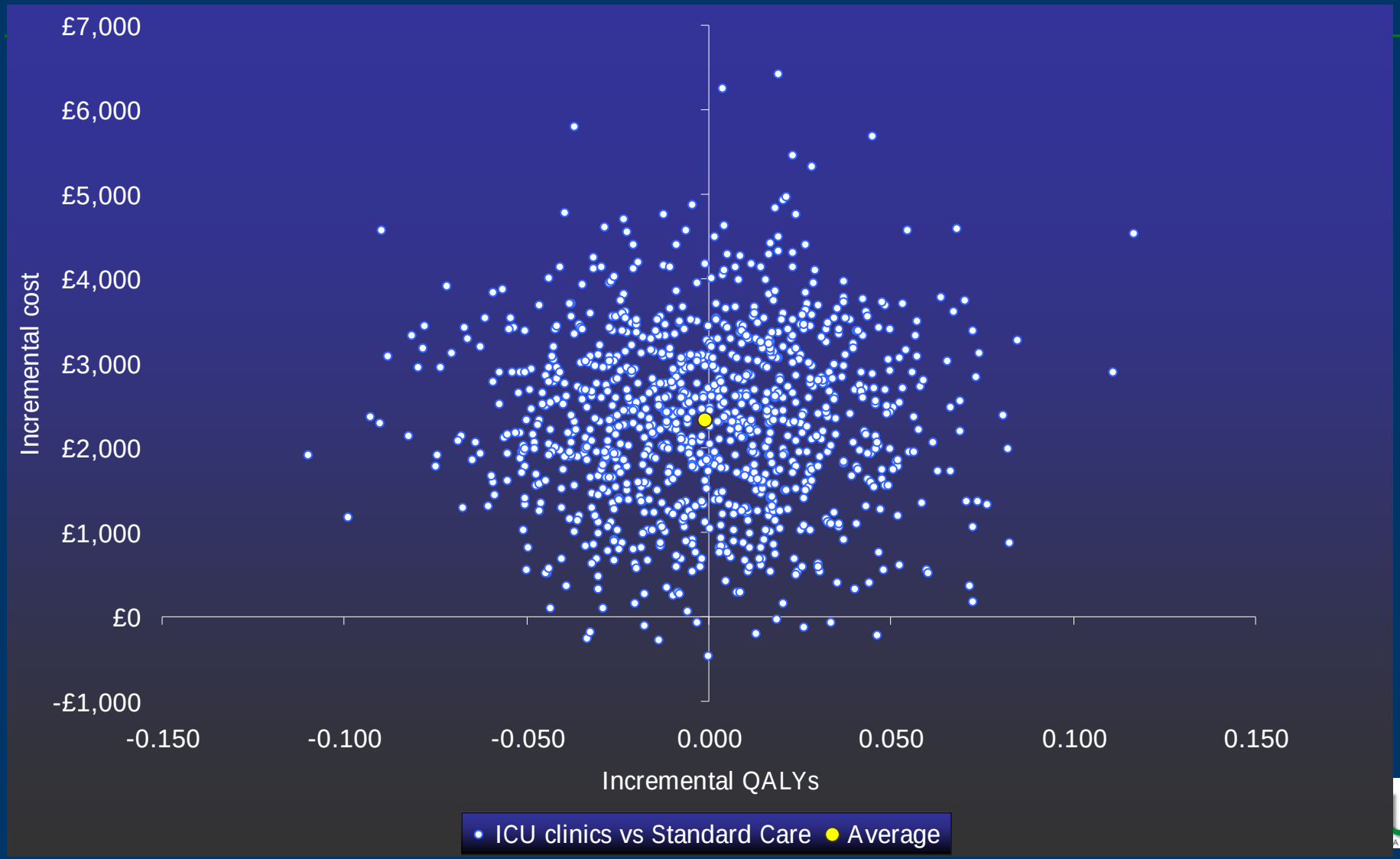
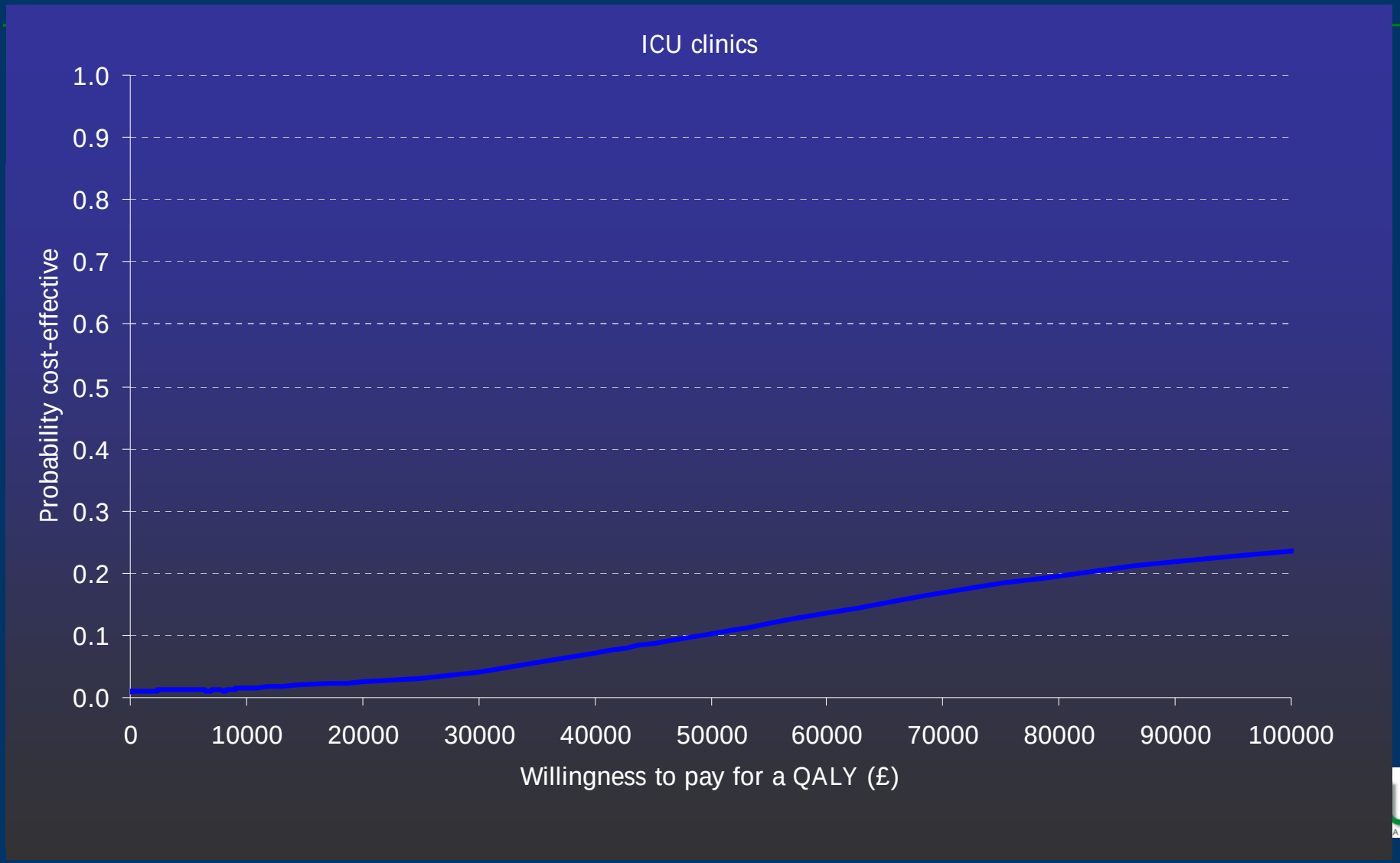
Incremental Cost Effectiveness Plane



Cost Effectiveness Acceptability Curves



Sensitivity Analyses

Conclusions

- Intensive Care post-discharge review clinics are unlikely to be considered cost-effective
- The proliferation of ICU post-discharge clinics in the UK should be reconsidered

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Thank you!

PRaCTICaL study group:

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Chairman of trial steering committee: Prof Timothy Walsh, Royal Infirmary of Edinburgh

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