

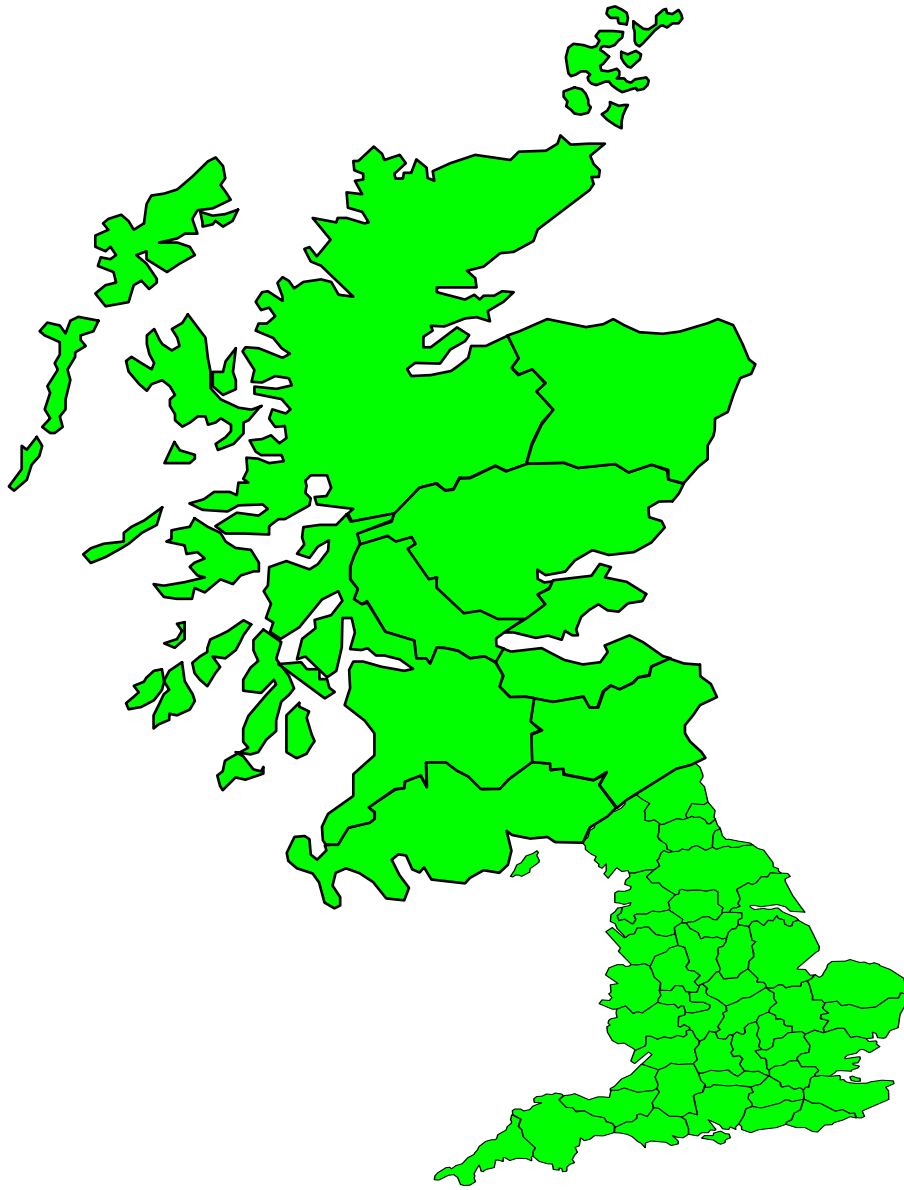
Work Packages 4 & 5

**Bu
R
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of Resistance and Disease in European Nations





UK
adjusted
for
intellectual
capacity

Work Package 4

- **To identify on a country-by-country basis the information needs of different stakeholders (public health experts, policy makers, politicians, health care system managers) for their own assessment of the burden of infectious diseases caused by antimicrobial susceptible and resistant bacterial pathogens**
- **To generate country-specific cost models for quantifying the economic loss due to AMR**
- **To identify incentives and counterincentives that impinge on efforts to control the spread of AMR**
- **To illustrate the financial impact of AMR on care in European hospitals; besides this, to estimate the human and societal dimensions of infections caused by resistant pathogens and the repercussions for the health care systems, eg loss of confidence in hospitals.**

Activity Indicator WP4

- **Formation of a Liaison Group linking the Project Management Group with the University of Dundee Division of Community Health Sciences (LUDDCH) for development of a questionnaire on identification of stakeholders' needs with regard to resistance epidemiology and financial impact.**
- **Distribution and evaluation of this assessment tool.**

Completion Criteria WP4

- **Once convened, the LUDDCH will conduct a questionnaire survey on identification of country specific needs by different stakeholders.**
- **On the basis of the LUDDCH survey, the UDDCH will determine factors driving and impeding the development of AMR and the costs associated with these factors. After two years of communications between LUDDCH and national stakeholders this project partner will formulate targeted recommendations.**

Professor Martin Chalkley

- **Research interests:**
 - **Contracts for Health Services**
 - **Information and Incentives**
 - **The Economics of Health**



Information Needs

- **Determinants**
- **Consequences**
 - Impact on hospital
 - Numbers needed to harm
- **Understanding of results**
 - Cost models
 - Cost-effectiveness
 - Sensitivity analysis
- **Availability of central support/ guidelines for economic evaluation**

Use of Pharmacoeconomics Information—Report of the ISPOR Task Force on Use of Pharmacoeconomic/Health Economic Information in Health-Care Decision Making

Michael Drummond, PhD,¹ Ruth Brown, MS, MHSA,² A. Mark Fendrick, MD,³ Pete Fullerton, PhD,⁴
Peter Neumann, ScD,⁵ Rod Taylor, MSc, PhD,⁶ Marco Barbieri, MSc⁷

¹University of York, York, UK; ²MEDTAP International, London, UK; ³University of Michigan, Ann Arbor, MI, USA; ⁴University of Washington, Seattle, WA, USA; ⁵Harvard School of Public Health, Boston, MA, USA; ⁶University of Birmingham, Edgbaston, UK; ⁷Innovus Research, Bucks, UK

Central vs Local Decision Making

- **At the central level expertise is generally available to evaluate the methodological quality of studies that may not be available at the local level.**
- **At the central level there is usually a prescribed process for presenting data and a set of methodological guidelines that need to be followed.**

Decision Maker Surveys

- **Decisions have to be made quickly**
- **Problems with interpretation:**
 - **Measures of quality of life**
 - **Incremental cost-effectiveness ratios.**
- **Cost-effectiveness is important but only one of many factors that influence decision making**
- **Problems persist with a narrow focus on healthcare costs and lack of transferability between budgets**
- **However, one US survey found 89% willing to cover technologies that are more effective and more costly**
- **Concerned about sponsorship and credibility.**

7 Key Reporting Criteria (Country specific cost model)

1. Clearly identify the relevant patient impact.
2. Target population(s) and, if possible, their size.
3. Clearly identify the relevant budgets. Include disaggregated costs and outcomes for all options.
4. Present costs, consequences, and incremental cost-effectiveness ratio by patient subgroup.
5. Explain the impact, in practical terms, of adopting the new technology.
6. List all the key assumptions and data sources.
7. Report (or model) should facilitate sensitivity analyses using the decision maker's *own data and assumptions*.

Drummond et al, Value in Health 2003, 6: 407-416

Country Specific Cost Model

- **MRSA production function**
- **Fixed and variable inputs**
- **Outputs**
 - **Cost to the healthcare system**
 - **NNH Number Needed to Harm. How many MRSA to produce one more:**
 - **Death**
 - **Readmission**
 - **Discharge to long term care**

Incentives & Counterincentives

- **What are the determinants of AMR and AMR HAI?**
- **What incentives do stakeholders have to influence these determinants?**
- **Are there any perverse influences driving these determinants?**

Hospital Determinants of MRSA

- **Cleanliness (PEAT score)**
- **Single room availability**
- **Average LOS**
- **Average age of patients**
- **Emergency admissions**
- **Bed occupancy rate**
 - Occupancy 85-90%
 - Occupancy >90%
- **Cleaning service type**
 - Contract out vs in-house
- **Backlog expenditure per m² (proxy for building quality)**
- **Specialties**
- **Agency nursing staff (%)**
- **Bank nursing staff (%)**
- **Floor space per bed**
- **Number of beds**
- **Expenditure on cleaning**
- **Nurses per 1000 bed days**
- **Consultants per 1000 bed days**
- **Regional location**

Barry McCormick, Corporate Analytical Team, Department of Health

A Major Counterincentive

Commentary: Legal issues of data anonymisation in research

Petra Wilson

European Health
Management
Association, Rue De
La Science 4, 1000
Brussels, Belgium
Petra Wilson
associate director
petra.wilson@
ehma.org

In this paper Donnan et al expertly demonstrate the value of anonymised individual data in medical research, showing that effects masked in aggregated data are clearly visible when individual data are used. However, the use of anonymised data raises interesting legal questions.

The MEMO researchers paid careful attention to protecting patient confidentiality for the 166 000 files

they used in the study, with the data being anonymised with purpose made software that was used by named staff whose employment contracts could be revoked in the event of breaches of patient confidentiality. Given the large amount of data involved, patients' individual consent could not be sought, but efforts were made to inform patients of the possible use of their medical data and their rights of privacy through the

1300

BMJ VOLUME 328 29 MAY 2004 bmj.com

Wilson. *Br Med J* 328:1300-1301, 2004.

In response to: Donnan et al *Br Med J* 328 (7451):1297, 2004.

Social Dimensions of Health Institute

About SDHI

Staff

Research

Postgraduate Studies

Events

Funding



A joint initiative of the Universities of Dundee and St Andrews

Welcome to SDHI

The Social Dimensions of Health Institute (SDHI) is an organisation which encompasses the variety of inter-disciplinary health-related research being conducted in both the [University of Dundee](#) and the [University of St Andrews](#).

The Institute brings together leading:

- social scientists
- medical researchers and practitioners
- nurses
- midwives
- allied health professionals
- doctors and
- paramedics

to tackle issues of widespread public and political concern.

Forthcoming Events

Forthcoming Seminars

Professor Nora Kearney

Dr Sanjeev Sridharan

For further information click [here](#)



Vikki Entwistle
Reader, Alliance for Self care

Media coverage of health issues

Involvement of service users in health services research and planning
Patients' perspectives on and roles in ensuring their safety as they use health services.

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Internet

MRSA Action UK

Raising Public Awareness ~ Campaigning for Safer Standards
Supporting Victims & Dependants

Registered Charity No. 1115672

Email: info@mrsaactionuk.com

Tel:- 01942 - 208804

If you do not have adobe acrobat reader, you can download it from:

www.adobe.com

[Bev's Profile](#)

[Claude's Profile](#)

[Dale's Profile](#)

[Mavis's Profile](#)

[Moya's Profile](#)

[Phip's Profile](#)

[Tom's Profile](#)

MRSA Action UK was founded by this group of people who met via the MRSA Discussion Forum. Having found themselves with like-minded people we wish to relieve the Distress and Suffering experienced by Patients who contract Healthcare Associated Infections. By producing materials, to serve as an aid, our aim is to provide an advocacy and support service to families and their carers. Also to raise the awareness of the general public in all areas relating to Healthcare Associated Infections MRSA Action UK are working alongside Government Agencies to bring Improvements and Safer Standards in the Healthcare System.

Elected Executive positions

Chair:	Graham Tanner
Secretary:	Bev Hurst
Vice Chairs:	Tom Snowball & Dale Law
Treasurer:	Mavis Law
Funding & Promotions:	Moya Stevenson

Regional Representatives



**Welcome to
NCHI**
National Concern for Healthcare Infections

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[Monica Clarke's stories](#)

[Emma Allen's stories](#)

[David Clark's stories](#)

[Alison Ryan's stories](#)

[Grace and Joe Desa's stories](#)

[Charles Bruce's stories](#)

[Stories from the Heart Improvement Programme](#)

[Stories from NEYNL](#)

[Stories from NHS Tayside](#)

[Stories from the Working in Partnership Programme \(WiPP\)](#)

[Stories from Pilgrim Projects](#)

[Reconnecting with life: stories of life after stroke](#)

[Stories from the RCN PDF programme](#)

[Carers' Resource, Harrogate, Craven and Airedale](#)

Stories from the Department of Risk Management, NHS Tayside

These stories from [NHS Tayside](#) address issues of patient safety and risk management and were born of Pat O'Connor's wish to make better use of patient stories.

The stories

Click on the links below to play the stories. To save a file to your computer, right-click its link and go to 'Save target as'.

[60 seconds](#)

Despite the obstacles in his path, Iain retains his sense of humour in this wry look at how the immediate physical environment can affect the quality and safety of care.

[Jimmy's story](#)

A patient's fall in hospital goes unobserved and unrecorded and leads to a severe spinal injury. Would earlier and more appropriate intervention have led to a different outcome?

Contact us to obtain high-resolution versions of the stories on DVD.

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You are in : [Patient Voices](#) > [The stories](#) > [Stories from NHS Tayside](#)

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Last updated: 11/01/2007

Patient Stories of MRSA

- **Destroys the family's faith in health services**
- **Causes unnecessary fear within the family (e.g. that they are a danger to others)**
- **Poor communication**
 - **Unprepared for risk of HAI**
 - **Presented as “just one of those things”**
 - **No support in dealing with the aftermath**

saferhealthcare

The Aftermath

Caring for patients harmed by treatment

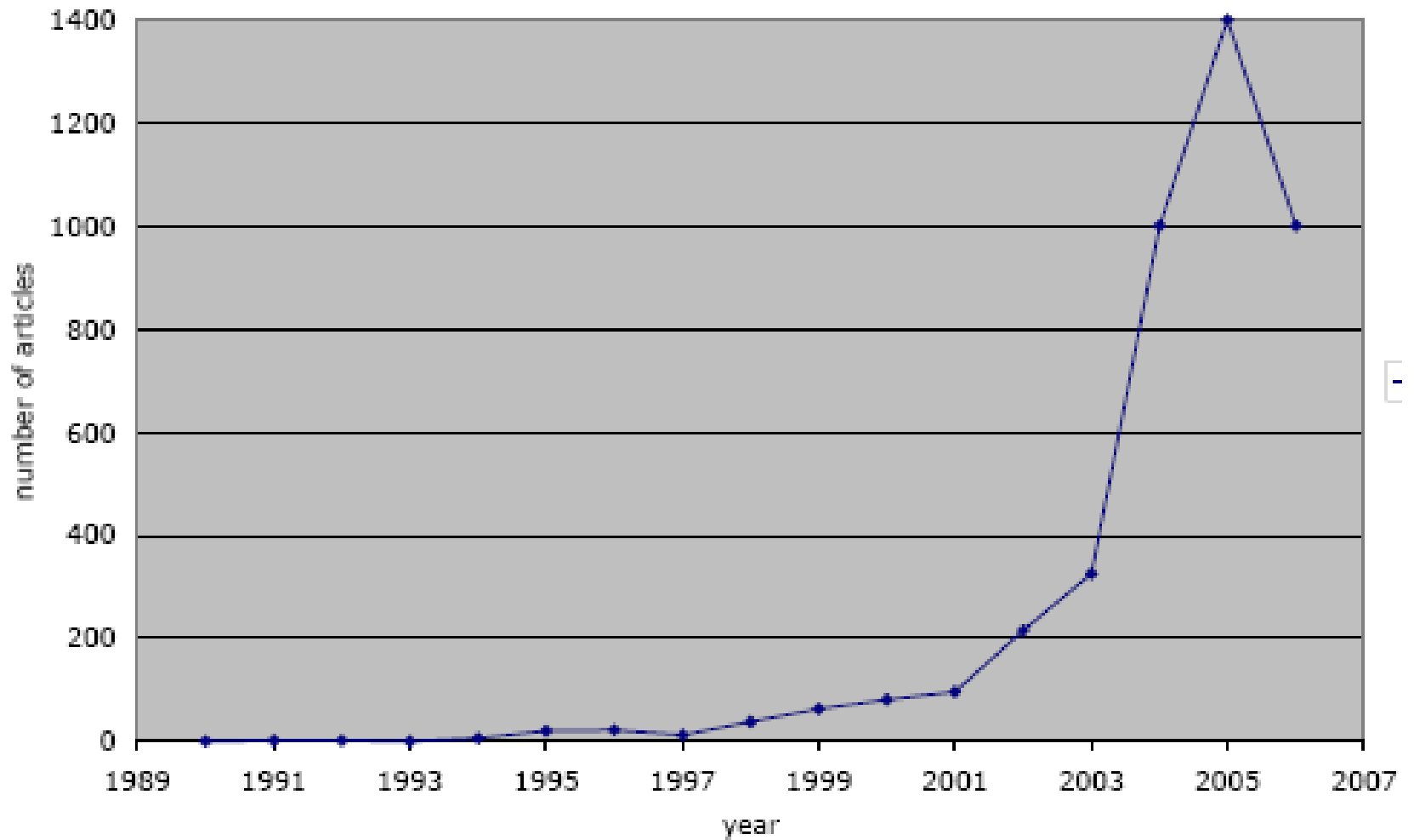
- Why should patients who have experienced an adverse event or been harmed be made to suffer even more?
- Many people harmed by their treatment suffer further trauma through the incident being insensitively and inadequately handled.
- The consequences of some incidents become apparent only in the longer term
 - Own up, be honest and transparent
 - Don't underestimate information needs
 - Offer follow up support

Charles Vincent, 2006

<http://www.saferhealthcare.org.uk/IHI/Topics/DischargingPatients/WhatWeKnow/>

Impact of HAI on Services

- **On the hospital where the case arose**
 - Direct costs from the case
 - Loss of future cases
- **On competing hospitals**
 - Increased work load
 - Increased risk of HAI
- **On other services**
 - Patient transport
 - Support services



Number of articles in the UK national press on MRSA

Brigitte Nerlich and Nelya Koteyko, University of Nottingham

Hospital Questionnaire

- **Local/ national information**
 - **Bed occupancy**
 - **Workload**
 - **Cleaning/ infection control**
- **Incentives/ disincentives to reducing**
 - **MRSA**
 - **Other HAI**
- **Influence of current financial status of hospital (deficit or surplus)**
- **Scenarios for changing determinants**

National Questionnaire

- **Information needs**
 - Public and private sector
 - Epidemiology of resistance
 - Economic impact
- **Patient groups**
 - Generic (Health Council)
 - HAI specific
 - Patient stories
- **Record linkage**
 - Technical barriers
 - Legal barriers

WP 4 Key Issues

- **How many countries?**
- **Who are the stakeholders?**
- **How do we reach them?**
- **Timetable**
 - **Scheduled**
 - **Agree ways of working with EAB and Management Team**
 - **Meet SHDI research team on 10th February**
 - **Identify participants & stakeholders by March 2007**
 - **Meeting with Graham Tanner and Bev Hurst (National Concern for Hospital Infections) by March 2007**
 - **To be scheduled**
 - **Draft questionnaire for first LUDDCH meeting (Month 1)**
 - **Set up on-line database (Month 5)**
 - **Attend first WP7 Workshop (Month 9) to present details to the hospitals**

Work Package 5

“ Develop and test a protocol for constructing matched cohorts using propensity scores to adjust for confounding variables”

Objectives

- **Infection: hospital acquired MRSA bacteraemia**
- **Populations: ICU & general ward**
- **Outcomes**
 1. **Mortality**
 2. **Resource consumption & cost**
 3. **Transfer to long term care**
 4. **Pilot feasibility of measures of the human or social cost of resistance**
- **Testing**
 - **Develop full model in Tayside**
 - **Availability of comparable data in other centres**
 - **Compare reduced model with full model**

Tayside

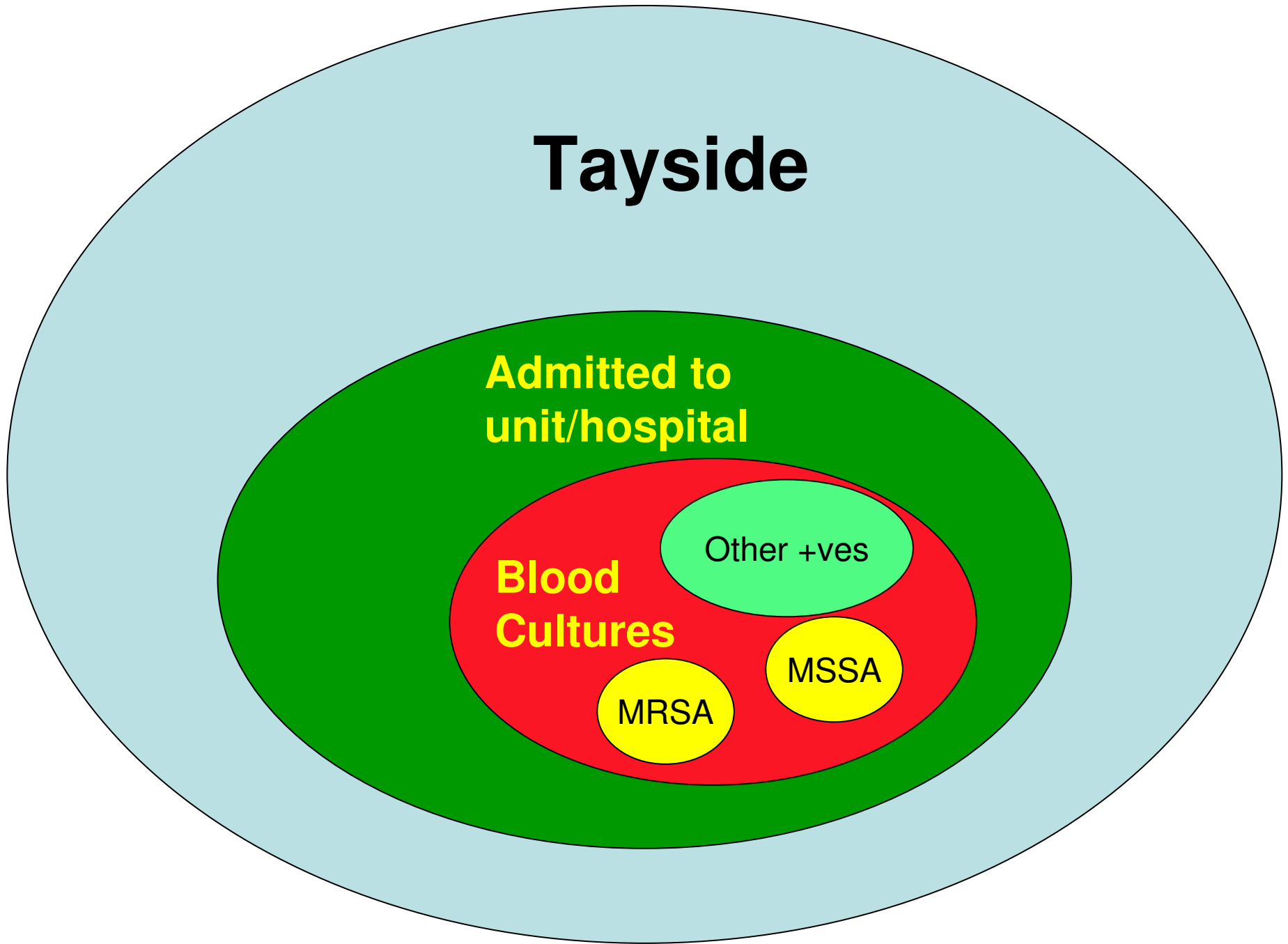
Admitted to
unit/hospital

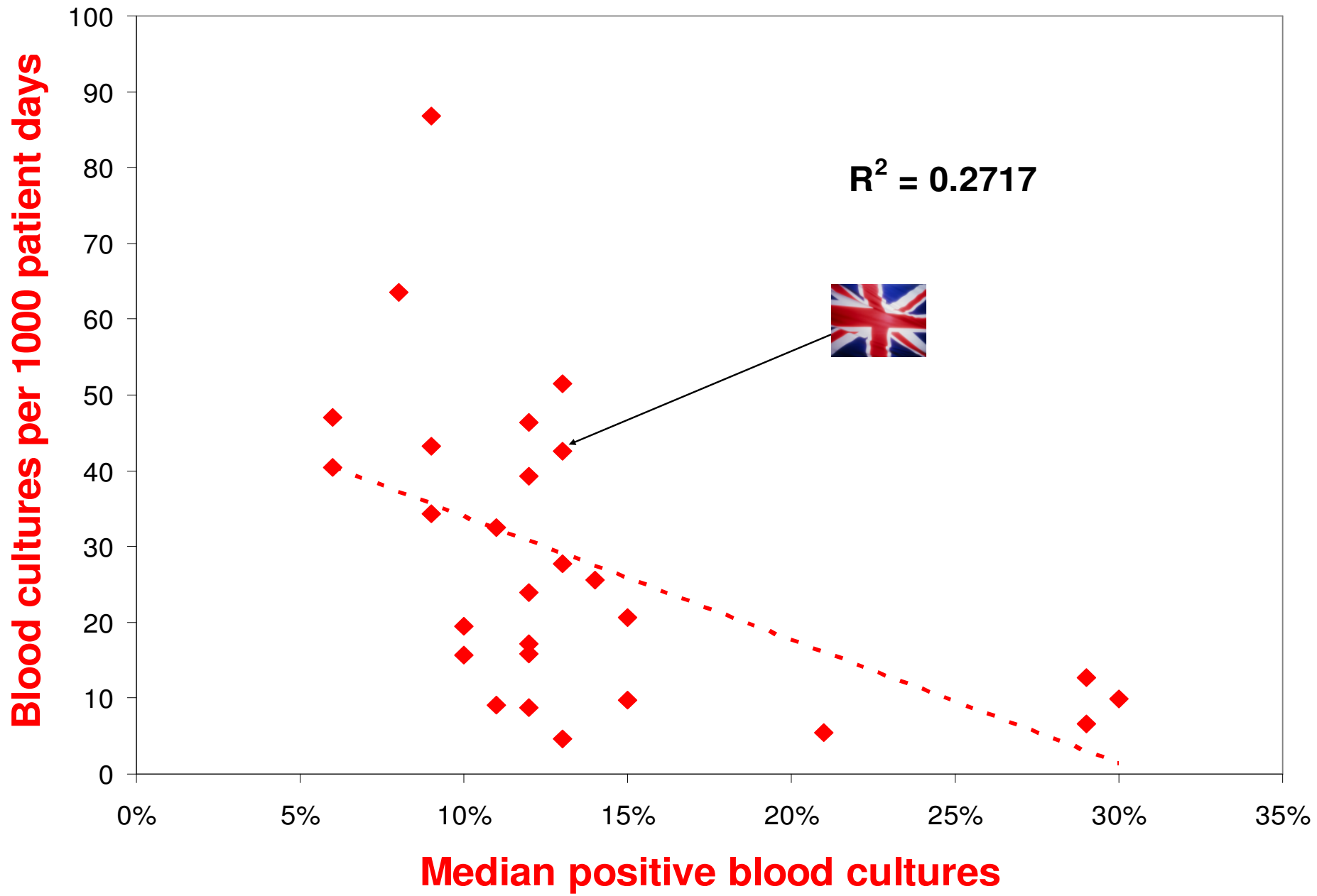
Blood
Cultures

Other +ves

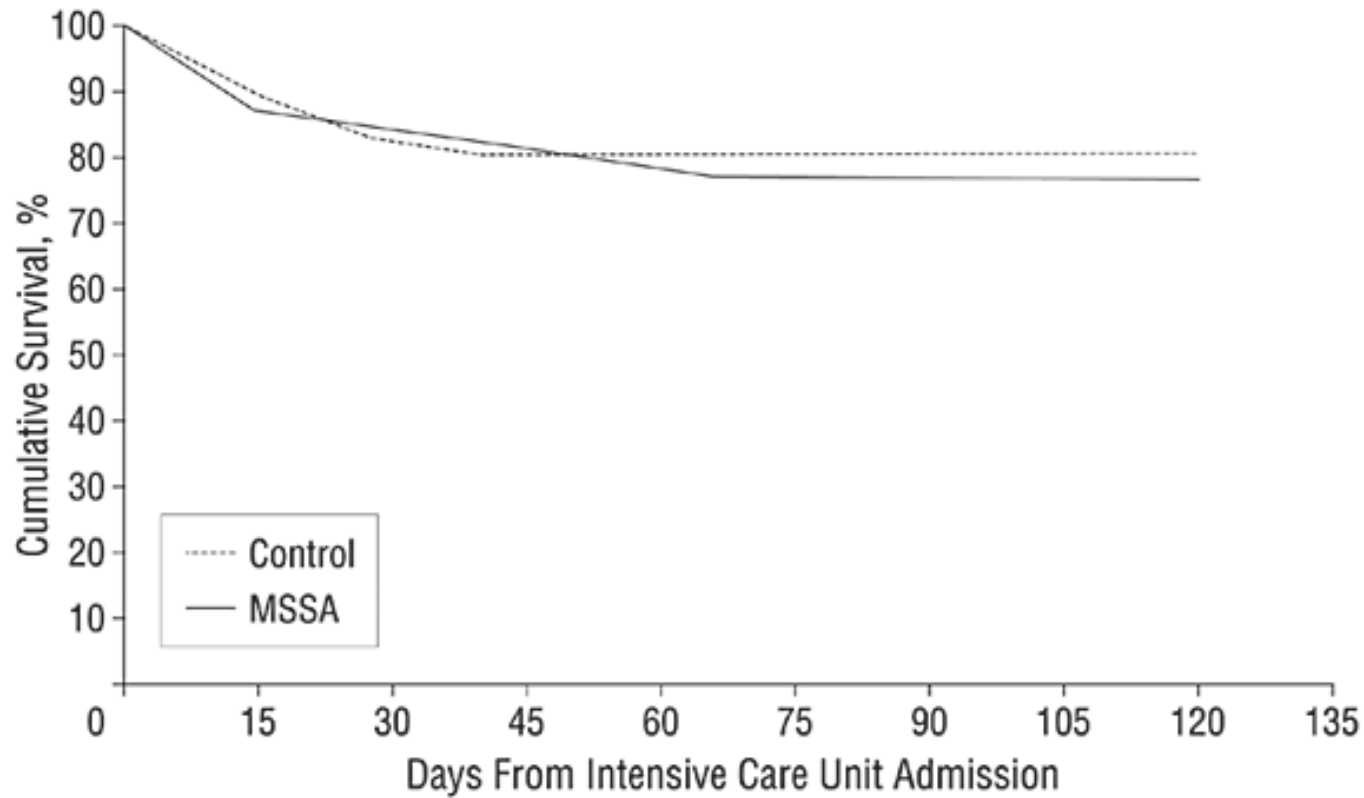
MRSA

MSSA



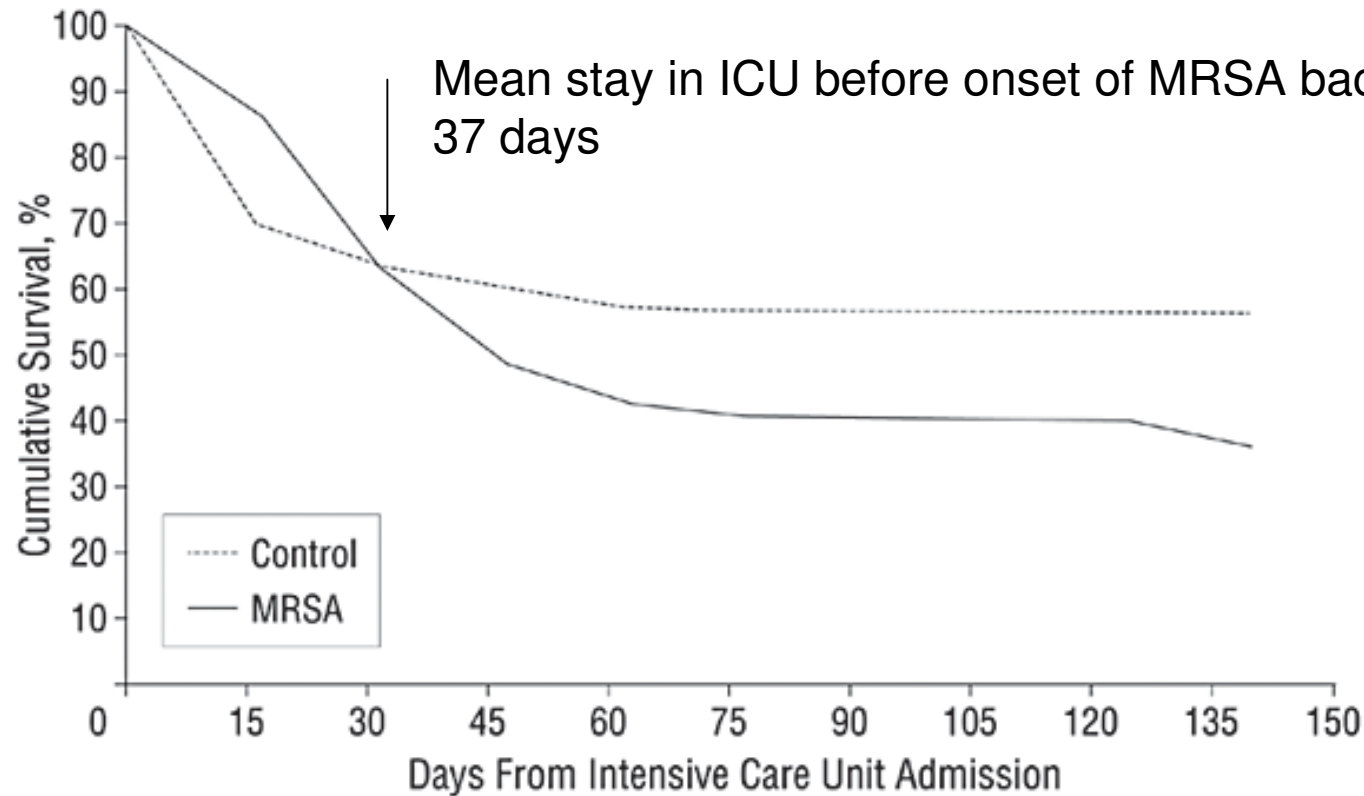


Survival curves for intensive care patients with methicillin-susceptible *Staphylococcus aureus* (MSSA) bacteremia (n = 38) and their matched control subjects (n = 76) (log-rank test, P = .435; Wilcoxon test, P = .44)



Blot, S. I. et al. Arch Intern Med 2002;162:2229-2235.

Survival curves for intensive care patients with methicillin-resistant *Staphylococcus aureus* (MRSA) bacteremia (n = 47) and their matched control subjects (n = 94) (log-rank test, P = .12; Wilcoxon test, P = .40)



Blot, S. I. et al. Arch Intern Med 2002;162:2229-2235.

Attributable Mortality

- **MSSA bacteraemia 1.3%**
- **MRSA bacteraemia 23.4%**
- **Difference:**
 - **22.1%, 95% CI 8.8% to 35.3%**

Design BURDEN WP5 & WP 7

- **Two matched cohort studies:**
 - **Hospital acquired MRSA & controls**
 - **Hospital acquired MSSA & controls**
- **Matched by ward & calendar date (within 7 days)**

Key data, WP5

- **Propensity**
 - Prior length of stay
 - Main admitting diagnosis
 - Comorbidities
 - Transfer from an institution
 - Surgery
 - ICU admission
 - Past year infection or colonization
- **Outcomes**
 - Mortality
 - In hospital
 - 30 day
 - 1 year
 - Length of stay
 - Total cost
 - Surgery
 - ICU admission
 - Discharge to long term care
 - Readmission

Key data, WP7

- **Propensity**
 - Prior length of stay
 - Main admitting diagnosis
 - Comorbidities
 - Transfer from an institution
 - Surgery
 - ICU admission
 - Past year infection or colonization
- **Outcomes**
 - Mortality
 - In hospital
 - Length of stay
 - Cost
 - Surgery
 - ICU admission

WP 5 Key Issues

- **Agree variables for propensity score (March 07)**
- **Questionnaire about availability of data for propensity score to WP6 and WP7 (June 07)**
- **Presentation of data from Tayside (September 07)**
- **Case studies on human and social cost (with WP4), December 07**
- **Testing of abbreviated model in Tayside (month 16)**
- **Roll out of cost and outcome model (with WP4), month 18**
- **Roll out of human and social cost (month 24)**

Patient Safety Research Network

- **Scottish Funding Council**
- **Aberdeen**
 - Rhona Flin, Industrial Psychology Research Centre
- **Dundee,**
 - Peter Davey, Health Informatics Centre;
Jean Ker, Clinical Skills
- **St Andrews**
 - Huw Davies, Department of Management

PSRN

- **WP 1: Measurement of Adverse Events to Patients in Scotland**
 - 1a Inpatients
 - 1b Primary Care
- **WP 2. Identifying Human and Organisational Factors contributing to Adverse Events**
- **WP 3. Enhancing Non-Technical Skills in Health Care Professionals to Minimise Adverse Events**