



Medical Care Research Unit Final Report 2006-2010

Grant holder: Professor Jon Nicholl, University of Sheffield

Key researchers: Patricia Coleman, Joanne Coster, Emma Knowles, Alicia O'Cathain, Janette Turner

Start and end dates: January 2006 to December 2010

Budget: £1.8m including 80% full economic costing, and £49k responsive money annually

Index

	Page number
Plain English Summary	3
Executive Summary/Overview of MCRU work programme	5
Update since last progress report	8
Key achievements 2006-2010	9
Conclusion	23

Plain English Summary

The Medical Care Research Unit has been funded by the Department of Health (DH) since 1966. The aim of the unit is “to provide high quality scientific research-based information for the Department of Health” (see Contract 2/11/2005). For many years a key research focus has been emergency and urgent care. The focus of our 2006-2010 research **programme** was the performance of the emergency and urgent care *system*. We also undertook a number of research studies in **response** to the needs of policy makers. In addition we contributed to the **wider** research endeavour both in the field of emergency and urgent care research and health services research in general.

Core programme

A study of the performance of the emergency and urgent care system. We:

- studied how systems are managed by emergency and urgent care networks. We undertook an email survey of networks in England alongside case studies of networks.
- obtained a consensus view from experts about how to measure the performance of the system using routine data. We identified 16 candidate indicators and calculated those which could be calculated using national data for all 152 primary care trusts in England.
- developed and tested survey methodology and a questionnaire to measure patients’ views and experiences of the emergency and urgent care system. We undertook focus groups and interviews with recent users of the system to identify issues important to them, developed a questionnaire, and tested it in one system. The result was the Urgent Care System Questionnaire (UCSQ) administered through telephone survey.
- undertook case studies in four primary care trusts which made changes to their emergency and urgent care system to test whether system performance improved. We used site visits, interviews with stakeholders, routine data, and before and after surveys of system users within each system.
- devised a ‘toolkit’ of instructions to help commissioners to calculate performance indicators for emergency and urgent care systems and to undertake surveys of system users.

Responsive studies

We completed six studies as part of our “fast-track research resource for urgent and/or high priority policy issues” (see Contract 2/11/2005). These were:

- an evaluation of commuter walk-in centres
- a preliminary evaluation of the triage software NHS Pathways
- identification of performance indicators for category B ambulance calls
- a review of the evidence base for pre-hospital care

- a review of emergency paediatric admissions
- and the cost-effectiveness of regional trauma networks

We also commissioned a scoping review of telecoaching for long terms conditions. Finally, we started the evaluation of the 'NHS 111' urgent care telephone service pilots.

Wider research endeavour

The stability of funding for the MCRU over many years has enabled us to attract and work with outstanding clinical researchers in emergency care. Two of these clinicians have developed a large portfolio of research in emergency care. The stability of funding has also enabled us to apply for further funding from other research sources to develop a substantial portfolio of research in emergency and urgent care. Typically over the years this 'gearing' has been of the order of 5 to 1, so that for every £1m of DH core funding we have received we have been able to attract £5m from other sources. It has also allowed us to make a considerable contribution to the structures and process of commissioning and reviewing research projects, reviewing articles for peer-reviewed journals, and training the next generation through teaching and supervision of masters and PhD students. We have always been keen to develop research methods, as well as apply them, and have contributed to the development of mixed methods research, case mix adjustment and performance indicator development.

Working with policy makers

Over the past five years we have worked closely with policy makers, meeting formally with the Urgent Care team and Emergency Care Team at the DH between two and four times a year. We submitted five interim reports of findings to the DH for use by policy makers, including a large interim report of early phases of the programme in January 2009. More informally we have acted as a source of expert advice on emergency and urgent care, for example working closely with policy makers on policies for the emergency ambulance service.

Executive Summary

(i) Objectives

Our objectives as a unit were to deliver a five year programme of research focused on the performance of the emergency and urgent care system, respond to DH needs for research and expert advice in emergency and urgent care, and facilitate policy relevant research.

(ii) Research Programme

Our research programme has consisted of a core five year programme focused on the emergency and urgent care system, a number of research studies undertaken in response to DH needs, and a wider contribution to emergency and urgent care research and health services research in general.

Core programme

A study of the performance of the emergency and urgent care system. We:

- studied how systems are managed by emergency and urgent care networks. We undertook an email survey of networks in England alongside case studies of networks.
- obtained a consensus view from experts about how to measure the performance of the system using routine data. We identified 16 candidate indicators and calculated those which could be calculated using national data for all 152 primary care trusts in England.
- developed and tested survey methodology and a questionnaire to measure patients' views and experiences of the emergency and urgent care system. We undertook focus groups and interviews with recent users of the system to identify issues important to them, developed a questionnaire, and tested it in one system. The result was the Urgent Care System Questionnaire (UCSQ) administered through telephone survey.
- undertook case studies in four primary care trusts which made changes to their emergency and urgent care system to test whether system performance improved. We used site visits, interviews with stakeholders, routine data, and before and after surveys of system users within each system.
- devised a 'toolkit' of instructions to help commissioners to calculate performance indicators for emergency and urgent care systems and to undertake surveys of system users.

Responsive studies

We completed six studies as part of our “fast-track research resource for urgent and/or high priority policy issues” (see Contract 2/11/2005). These were:

- an evaluation of commuter walk-in centres
- a preliminary evaluation of the triage software NHS Pathways
- identification of performance indicators for category B ambulance calls
- a review of the evidence base for pre-hospital care
- a review of emergency paediatric admissions
- and the cost-effectiveness of regional trauma networks

We also commissioned a scoping review of tele-coaching for long terms conditions. Finally, we started the evaluation of the ‘NHS 111’ urgent care telephone service pilots.

Wider research endeavour

The stability of funding for the MCRU over many years has enabled us attract and work with outstanding clinical researchers in emergency care. Two of these clinicians have developed a large portfolio of research in emergency care. The stability of funding has also enabled us to apply for further funding from other research sources to develop a substantial portfolio of research in emergency and urgent care. Typically over the years this ‘gearing’ has been of the order of 5 to 1, so that for every £1m of DH core funding we have received we have been able to attract £5m from other sources. It has also allowed us to make a considerable contribution to the structures and process of commissioning and reviewing research projects, reviewing articles for peer-reviewed journals, and training the next generation through teaching and supervision of masters and PhD students. We have always been keen to develop research methods, as well as apply them, and have contributed to the development of mixed methods research, case mix adjustment and performance indicator development.

(iii) Relevance of work to DH policy

All of our research has been policy relevant and driven by our belief in the importance of research evidence in practice and policy making. Some examples are:

- In the early stages of our 2006-2010 contract the DH were working on an urgent care strategy Direction of Travel. We worked with the Urgent Care Team to feed into this strategy by formally responding to the consultation, meeting regularly with the team, and ensuring our research on networks and users’ views of the system was completed on time for use within the strategy.
- One of our colleagues joined the working group of the Healthcare Commission team which delivered ‘Not just a matter of time – a review of urgent and emergency care services in England’. Our concept of a *system*, rather than simply a set of services, was central to their report. It highlighted the importance of coordinating services, integrating care and making services convenient for the

patient; these are the three domains of satisfaction in our system user questionnaire.

- Our development and calculation of performance indicators for the emergency and urgent care system has been highly relevant to the endeavours of the National Clinical Director for Urgent and Emergency Care Professor Matthew Cooke, who has been developing indicators for emergency departments. His intention is to consider indicators for the emergency and urgent care system in 2012/13 and our research will be important for this.
- The work on developing the evidence base for pre-hospital and out of hospital care not only prioritised future research areas but also the associated evidence reviews have provided a valuable and comprehensive evidence resource for the NHS and academic institutions. These reviews are now available from the DH and SchARR websites and also NHS Evidence. The work was also featured in the periodical "Ambulance Today" making the work accessible to a wider ambulance service audience. http://www.ambulancetoday.co.uk/downloads/AT_October_2010.pdf
- We have worked with our clinical colleagues to assess the impact of the four hour target for emergency departments on the management of patients; evaluate paramedic practitioners for the care of older people; and assess the impact of the distance 999 ambulance patients have to travel to emergency departments on mortality in critical emergencies.

Update since last progress report

We submitted a large interim report of the early phases of the programme (2006-2008) to DH in January 2009. This underwent external peer review. Since then we have submitted interim reports to the DH in November 2009, April 2010 and September 2010, detailing emerging findings. An update of progress since January 2009:

Progress on the core programme

- We evaluated all the performance indicators that rely on national sources for 152 systems in England: emergency admissions, emergency readmissions, mortality rates, case fatality ratios, and unnecessary attendance at emergency departments.
- We completed the case studies in four systems which made changes to emergency and urgent care in 2009.

Progress on responsive projects

We completed:

- The Category B performance indicators project.
- Review of evidence for pre-hospital emergency and urgent care.
- The cost-effectiveness of Regional Trauma Networks.
- Scoping study of telecoaching for long term conditions (sub-contracted).

Progress on evaluation of NHS 111 pilots

We progressed the evaluation of the NHS 111 pilots by obtaining ethical approval and research governance approval, completing seven population surveys in the four pilots and three control sites, and completing a 'lessons learnt' exercise to ensure early lessons on delivering this new service were documented and available for future service providers.

Key achievements from 2006 – 2010

1. Examples of work that have influenced policy or practice

We have undertaken policy relevant research, worked closely with policy makers and reported frequently to them (see pages 6 and 7). Our research and expert opinion have contributed to policy and practice through these routes. Some examples of direct influence are:

- Our research on performance indicators for Category B calls for the ambulance service came directly from the Ambulance Policy Team. Developing different and more relevant ways of measuring ambulance service performance than response times was a key policy initiative. One of the early tasks in this project was a review of the current evidence base for response time targets and an assessment of the characteristics of category B ambulance calls. This work provided a key document used to support the decision to remove the category B response time target for ambulance services from 2011. As part of the process for developing new indicators a consensus workshop was held, bringing together 60 NHS professionals, policy makers, academics and patient groups, providing an example of collaborative working across these different groups but with a common purpose. The workshop was featured in the November 2009 Emergency Care Bulletin
http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_108277.pdf
- A preliminary evaluation of NHS Pathways led to approval of the software as suitable for assessing 999 ambulance calls. NHS Pathways has also subsequently been adopted as the call assessment system by the early NHS 111 urgent care telephone service pilot sites.
- We added a new component to our evaluation of the pilots of 'NHS 111' in response to DH needs. The DH wanted to capture the early lessons learnt from the pilots about implementing the service, to provide information for future service providers in any roll-out. We undertook a series of focus groups and interviews with key providers and reported the results to the DH in an interim report of the evaluation.

2. References of published outputs 2006-2010

We have listed published outputs in three groups. First, the publications related to the 2006-10 programme and responsive projects; these are based on research undertaken in the early years of the funding period and we are in the process of writing publications from the later years. Second, the publications we have contributed to which are related to the MCRU's focus on emergency and urgent care and were published during 2006-10; these resulted from previous MCRU funding periods and collaborations with other

researchers in emergency and urgent care. Third, other publications which members of the MCRU have authored or co-authored during 2006-10.

Between 2006 and 2010 we have contributed to high impact journals including eight BMJ papers, one Lancet paper and one New England Journal of Medicine paper. We have not chosen any of these for special mention, selecting instead three publications which show our commitment to policy relevant emergency and urgent care research. Our three publications for special mention are:

Publication	Rationale
<p>Coleman P, Nicholl JP. Consensus methods to identify a set of potential performance indicators for systems of emergency and urgent care. <i>Journal of Health Services Research and Policy</i> 2010; 15(S) (2): 12-18.</p>	<p>Developing and validating performance indicators for emergency and urgent care is a current focus of DH policy. Professor Matthew Cooke at the DH will consider indicators for the emergency and urgent care system in 2012/13. This paper identifies 16 indicators using a Delphi technique.</p>
<p>Turner J, et al. Building the evidence base in pre-hospital emergency and urgent care: A review of research evidence and priorities for future research. A final report was released by DH on 6th July 2009 and is available on their website. *</p>	<p>We completed 11 scoping reviews covering the broad areas of understanding the EMS organisation; understanding how services are being used; EMS Workforce; patient assessment and management; alternatives to ambulance response or transport to emergency departments; information and performance measurement. We identified the research priorities relevant to future development and implementation of ambulance service policy objectives.</p>
<p>Nicholl J, West J, Goodacre S, Turner J. The relationship between distance to hospital and patient mortality in emergencies: an observational study. <i>Emergency Medicine Journal</i> 2007; 24: 665-668.</p>	<p>This paper received considerable coverage in the press.</p>

* http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_117194

(i) 2006-2010 Programme and responsive projects

Published or in press

Knowles E, O’Cathain A, Nicholl J. Patients’ experiences and views of an emergency and urgent care system. *Health Expectations*, in press.

O’Cathain A, Knowles E, Nicholl J. Measuring patients’ experiences and views of the emergency and urgent care system: Psychometric testing of the Urgent Care System Questionnaire. *BMJ Quality & Safety, Published Online First: 5 January 2011* doi: 10.1136/bmjqs.2009.036574.

Coleman P, Nicholl JP. Consensus methods to identify a set of potential performance indicators for systems of emergency and urgent care. *Journal of Health Services Research and Policy* 2010; 15(S) (2): 12-18.

O’Cathain A, Knowles E Nicholl J. Testing survey methodology to measure patients’ experiences and views of the emergency and urgent care system: telephone versus postal survey. *BMC Medical Research Methodology* 2010; 10:52.

Coster J, O’Cathain A, Salisbury C, Nicholl J. User views and experiences of commuter walk-in centres. *British Journal of General Practice* 2009;59:940-942.

O’Cathain A, Coster J, Salisbury C, Pearson T, Maheswaran R, Nicholl J. Do walk-in centres for commuters work? A mixed methods evaluation. *British Journal of General Practice* 2009;59:934-939.

O’Cathain A, Coleman P, Nicholl J. Characteristics of the emergency and urgent care system important to patients: a qualitative study. *Journal of Health Services Research and Policy* 2008;13:19-25.

Turner J, et al. Building the evidence base in pre-hospital emergency and urgent care: A review of research evidence and priorities for future research. A final report was released by DH on 6th July 2009:

http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_117194

(ii) Other emergency and urgent care

In press

Goodacre SW, Gray A, Newby DE, Dixon S, Masson M, Sampson F, **Nicholl JP**, Elliott M, Crane S. Health utility and survival after hospital admission with acute cardiogenic pulmonary oedema. *Emergency Medicine Journal*, in press.

Knowles E, Mason S, Colwell B. An initiative to provide emergency healthcare for older people in the community: the impact on carers. *Emergency Medicine Journal*, in press.

Mason S, O'Keefe C, **Knowles E**, Bradburn M, Campbell M, **Coleman P**, Stride C, O'Hara R, Rick J, Patterson M. A pragmatic quasi-experimental multi-site community intervention trial (NEECaP) evaluating the impact of Emergency Care Practitioners in different UK health settings on patient pathways (NEECaP Trial.) *Emergency Medicine Journal*, in press.

O'Keefe C, **Nicholl J**, **Turner J**, Goodacre S. The role of ambulance response times in the survival of patients with out of hospital cardiac arrest. *Emergency Medicine Journal*, in press.

2010

Coster J, **Nicholl J**. Road traffic crash casualties: analysis of trends in South Yorkshire. Final report to the South Yorkshire Safer Roads Partnership. Medical Care Research Unit, Sheffield, August 2010.

Gray A, Goodacre S, **Nicholl J P**, Masson M, Sampson F, Elliott M, Crane S, Newby DE, On behalf of 3CPO trialists. The development of a simple risk score to predict early outcome in severe acute acidotic cardiogenic pulmonary edema. *Circ Heart Fail* 2010; 3: 111-117.

Mason S, **Nicholl JP**, Locker TE. Targets still lead care in emergency departments. *British Medical Journal* 2010; 341: 61 (letter).

Pickin DM, **O'Cathain A**, Sampson FC, Salisbury C, **Nicholl J**. The impact of Advanced Access on antibiotic prescribing: a controlled before and after study. *Family Practice* 2010; 27(5): 554-555.

Sampson F, **O'Cathain A**, Goodacre S. Is primary angioplasty an acceptable alternative to thrombolysis? Quantitative and qualitative study of patient and carer satisfaction. *Health Expectations* 2010; 13: 350-358.

2009

Dixon S, Mason S, **Knowles E**, Colwell B, Wardrope J, Snooks H, Gorringer R, Perrin J, **Nicholl JP**. Is it cost effective to introduce paramedic practitioners for older people to the ambulance service? Results of a cluster randomised controlled trial. *Emergency Medicine Journal* 2009; 26: 446-451.

Gray A, Goodacre S, Newby D, Masson M, Sampson F, Dixon S, Crane S, Elliott M, **Nicholl JP**. A multicentre RCT of the use of continuous positive airway pressure and non-invasive positive pressure ventilation in the early treatment of patients presenting to the ED with severe acute cardiogenic pulmonary oedema: the 3CPO trial. *Health Technology Assessment* 2009; 13 (33): 1-106.

Sampson F, **O'Cathain A**, Goodacre S. Feeling fixed and its contribution to patient satisfaction with primary angioplasty: a qualitative study. *European Journal of Cardiovascular Nursing* 2009; 8: 85-90.

Snooks H, Evans A, Wells B, Peconi J, Thomas M, Woollard M, Guly H, Jenkinson E, **Turner J**, Hartley-Sharpe C. What are the highest priorities for research in emergency prehospital care? *Emergency Medicine Journal* 2009; 26: 549-550.

2008

Coleman P, Nicholl J. Pediatric Emergency Admissions - a review of the literature. A report to the Department of Health, Children, Families and Maternity team 2008.

Nicholl J, Coleman P, Turner J. The potential impact of organisational changes proposed to trauma services - a rapid review of the literature. MCRU, University of Sheffield 2008.

Gray A, Goodacre S, Newby D, Sampson F, Mason M, **Nicholl J**. Effectiveness of non-invasive ventilation in patients with acute cardiogenic pulmonary oedema. *NEJM*, 2008; 359: 142-151.

Mason S, **Knowles E**, Freeman J, Snooks H. Safety of Paramedics with Extended Skills. *Academic Emergency Medicine* 2008, 15: 607-612.

OLUBOYEDE Y, GOODACRE S, WAILOO A, **ESCAPE** Research Team. Cost effectiveness of chest pain unit care in the NHS. *BMC Health Serv Res*, 2008; 8: 174.

Sampson F, Pickin M, **O'Cathain A**, Goodall S, Salisbury C. The impact of same-day appointments on patient satisfaction with general practice appointment systems. *Br J General Practice* 2008; 58: 641-3.

2007

Goodacre S, Cross E, Lewis C, **Nicholl J**, Capewell S. Effectiveness and safety of chest pain assessment to prevent emergency admissions: ESCAPE cluster randomised trial. *BMJ* 2007; 335: 659-664.

LOCKER TE, BASTON S, MASON SM, **NICHOLL J**. Defining frequent use of an urban emergency department. *EMJ*, 2007; 24(6): 398-401.

MAHESWARAN R, PEARSON T, MUNRO J, JIWA M, CAMPBELL MJ, **NICHOLL J**. Impact of NHS walk-in centres on primary care access times - an ecological study. *BMJ*, 2007; 334: 838-.

Mason S, Knowles E, Colwell B, Dixon S, Wardrope J, Gorringer R, Snooks H, Perrin J, **Nicholl J**. Paramedic Practitioner Older People's Support Trial (PPOPS): A Cluster Randomised Controlled Trial. *BMJ* 2007; 335: 919.

Mason S, O'Keeffe C, **Coleman P**, Edlin R, **Nicholl JP**. The effectiveness of emergency care practitioners working within existing service models of care. *Emergency Medicine Journal* 2007; 24: 239-243.

Nicholl J, West J, Goodacre S, **Turner J**. The relationship between distance to hospital and patient mortality in emergencies: an observational study. *Emergency Medicine Journal* 2007; 24: 665-668.

O’Cathain A, Knowles E, Munro J, **Nicholl J**. Exploring the effect of changes to service provision on the use of unscheduled care in England: population surveys. *BMC Health Services Research* 2007; 7:61.

O’Cathain A, Munro J, Armstrong I, O’Donnell C, Heaney D. The effect of attitude to risk on decisions made by nurses using computerised decision support software in telephone clinical assessment: an observational study. *BMC Medical Informatics and Decision-making* 2007,7:39.

2006

Dixon S, Sampson F, **O’Cathain A**, Pickin DM. Advanced access: more than just GP waiting times? *Family Practice* 2006; 23:233-239.

Freeman J, **Nicholl J, Turner J**. Does size matter? The relationship between volume and outcome in the care of major trauma. *Journal of Health Services Research & Policy* 2006; 11(2): 101-5.

Goodacre S, **Turner J, Nichol J**. Prediction of mortality among emergency medical admissions. *Emergency Medicine Journal* 2006; 23:372-5.

Greatbatch D, Hanlon G, Goode J, **O’Cathain A**, Strangleman T, Luff D. Telephone triage, expert systems and clinical expertise. In Allen D, Pilnick A (eds). *The Social Organisation of Healthcare Work*. Blackwell Publishing Ltd: Oxford, 2006, pp115-142.

Hanlon G, Goode J, Greatbatch D, Luff D, **O’Cathain A**, Strangleman T. Risk society and the NHS - From the traditional to the new citizen? *Critical Perspectives on Accounting* 2006; 17: 270-282.

Knowles E, Munro J, **O’Cathain A, Nicholl J**. Equity of access to health care. Evidence from NHS Direct in the UK. *Journal of Telemedicine and Telecare* 2006; 12: 262-265.

Mason S, **Coleman P**, O’Keeffe C, Ratcliffe J, **Nicholl J**. The evolution of the emergency care practitioner role in England: experiences and impact. *Emergency Medicine Journal* 2006, 23:435-9.

MUNRO JF, MASON S, **NICHOLL JP**. Effectiveness of measures to reduce emergency department waiting times: a natural experiment. *EMJ*, 2006; 23: 35-39.

(iii) Other publications from MCRU members

BROWN CA, **NICHOLL J**, et al. an epistemology of patient safety research: a framework for study design and interpretation. 1. Conceptualising and developing interventions. *Quality and Safety in Health Care*, 2008; 17: 158-162.

BROWN CA, **NICHOLL J**, et al. an epistemology of patient safety research: a framework for study design and interpretation. 2. Study design. *Quality and Safety in Health Care*, 2008; 17: 163-169.

BROWN CA, **NICHOLL J**, et al. an epistemology of patient safety research: a framework for study design and interpretation. 3. End-points and measurement. *Quality and Safety in Health Care*, 2008; 17: 170-177.

BROWN CA, **NICHOLL J**, et al. an epistemology of patient safety research: a framework for study design and interpretation. 4. One size does not fit all. *Quality and Safety in Health Care*, 2008; 17: 178-181.

Brown C, **Nicholl J**, Liliford RJ. Use of process measures to monitor the quality of clinical practice. *BMJ*, 2007; 335: 648-650.

HIND D, SCOTT EJ, COPELAND R, **et al**. A randomised controlled trial and cost-effectiveness evaluation of "booster" interventions to sustain increases in physical activity in middle-aged adults in deprived urban neighbourhoods. *BMC Public Health*, 2010; 10(3).

HUTCHINSON A, **COSTER J**, COOPER K, **et al**. Assessing quality of care from hospital care notes: comparison of the reliability of two methods. *Quality and Safety in Health Care*, 2010; 19: 1-6 doi: 10.1136.

Hutchinson A, **Coster J**, Cooper K L, McIntosh A, Walters S J, Bath P, Pearson M, Young T, Rantell K, Campbell M J, Ratcliffe J Comparison of case note review methods for evaluating quality and safety in health. *Health Technology Assessment* 2010; 14 (10).

LILFORD R, EDWARDS A, GIRLING A, HOFER T, DI TANNA GL, PETTY J, **NICHOLL J**. Inter-rater reliability of case-note audit: a systematic review. *J Health Serv Res Policy*, 2007; 12(3): 173-180.

MCCLOSKEY E, BENETON M, **NICHOLL J**, ET AL. Clodronate reduces the incidence of fractures in community dwelling elderly women unselected for osteoporosis - results of a double-blind, placebo controlled randomised study. *J Bone Min Research*, 2007; 22(1): 135-141.

McCulloch P, Altman DG, Campbell WB, Flum DR, Glasziou P, Marshall JC, **Nicholl J**. No surgical innovation without evaluation. The IDEAL recommendations. *Lancet*, 2009; 374: 1105-1112.

Morrell CJ, Slade P, Warner R, Paley G, Dixon S, Walters SJ, Brughra T, Barkham M, Parry GJ, **Nicholl J**. Clinical effectiveness of health visitor training in psychologically informed approaches for depression in postnatal women: pragmatic cluster randomised trial in primary care. *BMJ*, 2009; 338: 3045.

Nicholl JP. Case-mix adjustment in non-randomised observational evaluations - the constant risk fallacy. *J Epi Comm Health* 2007; 61: 1010-1013.

O’Cathain A, Murphy E, Nicholl JP. Three techniques for integrating qualitative and quantitative methods in health services research. *BMJ* 2010; 341:1147-1150.

O’Cathain A. Mixed methods involving qualitative research. In Bourgeault I, Dingwall R, DeVries R (eds). *The Sage Handbook of Qualitative Methods in Health Research*. Sage Publications, 2010, pp 575-588.

O’Cathain A. Assessing the quality of mixed methods research: toward a comprehensive framework. In Tashakkori & Teddlie (eds). *Handbook of Mixed Methods Research, Second Edition*, 2010, pp531-555.

O’Cathain A, Nicholl J, Murphy E. Structural issues affecting mixed methods studies in health research: a qualitative study. *BMC Med Res Method* 2009,9:82.

O’Cathain A. Reporting results. In Andrew S, Halcomb E (eds). *Mixed Methods Research for Nursing and the Health Sciences*. Blackwell Publishing, 2009, pp135-158.

O’Cathain A, Murphy E, Nicholl JP. Dysfunctional, multidisciplinary or interdisciplinary? Team working in mixed methods research. *Qualitative Health Research* 2008; 18: 1574-85.

O’Cathain A, Murphy E, Nicholl JP. The quality of mixed methods studies in health services research. *Journal of Health Services Research and Policy*, 2008; 13: 92-98.

O’Cathain A, Murphy E, Nicholl JP. Why, and how, mixed methods research is undertaken in health services research: a mixed methods study. *BMC Health Services Research* 2007; 7:85.

O’CATHAIN A, MURPHY E, NICHOLL J. Integration and publication as indicators of “yield” from mixed methods studies. *J of Mixed Methods Research*, 2007; 1(2): 147-163.

O’Cathain A, Thomas KT. Combining qualitative and quantitative methods. In Pope C, Mays N (eds). *Qualitative Research in Health Care*. Blackwell Publishing Ltd: Oxford, 2006, Third Edition, pp102-111.

PICKIN M, COOPER CL, CHATER T, O’HAGAN A, ABRAMS KR, COOPER NJ, BOGGILD M, PALACE J, EBERS G, CHILCOTT JB, TAPPENDEN P, **NICHOLL J.** The Multiple Sclerosis Risk Sharing Scheme Monitoring Study – early results and lessons for the future. *BMC Neurol*, 2009; 9: 1.

Relton C, Torgerson D, **O’Cathain A, Nicholl J.** Rethinking pragmatic RCTs: introducing the ‘cohort multiple RCT’ design. *BMJ* 2010;340:c1066, doi: 10.1136/bmj.c1066.

THOMAS KJ, MCPHERSON H, **J NICHOLL,** ET AL. Randomised controlled trial of a short course of traditional acupuncture compared with usual care for persistent low back pain. *BMJ*, 2006; 333:623-626

3. List of dissemination activities

Again, we list these under the programme, other emergency and urgent care research, and other general research activities.

(i) Conferences, invited lectures etc (Programme and responsive projects)

Coleman P, O’Cathain A, Knowles E. Understanding changes to systems of emergency and urgent care in the UK. A mixed methods approach. 6th Mixed Methods Annual Conference, Baltimore, USA, 2010.

Coleman P, Turner J. Patient priorities and decision making when using EMS and the effectiveness of publicity campaigns in influencing patient behaviour. 999 EMS Research Forum, Faculty of Pre-hospital Care Conference, Coventry, UK, 2010.

Coleman P, Nicholl JP. A Delphi survey to identify potential performance indicators for emergency and urgent care systems HSR Network and SDO joint annual conference: Delivering Better Health Services, Birmingham, UK, 2009.

Knowles E, O’Cathain A, Coleman P, Nicholl JP. Do changes to the emergency and urgent care system affect patient experiences and views? 13th International Conference on Emergency Medicine, Singapore, 2010.

Knowles E, O’Cathain A, Nicholl JP. Do changes to the emergency and urgent care system affect patient experiences and views? Health Services Research Network and National Institute for Health Research Service Delivery and Organisation Programme annual conference, Manchester, UK, 2010.

Nicholl J. Effect of admissions policies on hospital standardised mortality ratios. HSRN/SDO Conference, Manchester, England, UK June 2010.

Nicholl J. Evaluation of emergency care system. Emergency Care Conference, England, London 2009.

Nicholl J. How do we design a good emergency care system? NHS Confederation Conference, England, Liverpool, UK 2009.

Nicholl J. What makes a good performance indicator. RSS annual conference, Brighton, England, UK 2010.

Nicholl J. What direction of travel? Reconfiguring emergency and urgent care. HSRN/SDO annual conference. Manchester, June 2008.

Nicholl J. What direction of travel? Reconfiguring emergency and urgent care. Annual Health Services Research Lecture. London School of Hygiene and Tropical Medicine, March 2008.

O’Cathain A, Johnson M, **Nicholl J**. Routine measurement of patients’ views and experiences of the emergency and urgent care system. Delivering better health services. Health Services Research Network and National Institute for Health Research Service Delivery and Organisation Programme annual conference, Manchester, UK, 2008.

Turner J. Developing new performance indicators for ambulance service category B calls. 13th International Conference on Emergency Medicine, Singapore, 2010.

Turner J. Characteristics of ambulance category B calls. 999 EMS Forum, Faculty of Pre-hospital care Conference, Coventry, UK, 2010.

Turner J. Measuring performance in emergency care - counting beans? (as part of a parallel session organised by the 999 EMS Research Forum). HTAi Annual Conference, Singapore, 2009.

(ii) Conferences, invited lectures etc (Other emergency and urgent care)

2010

Coleman P, O’Keeffe C, Mason S. Understanding patient satisfaction and what experiences of receiving care patients value in their health care providers: Results from the NEECAP trial of Emergency Care Practitioners (ECPs) College of Emergency Medicine Autumn Conference, Birmingham, UK, 2010.

Coleman P, O’Keeffe C, Mason S. 'War and Peace' Strategies by Emergency Care Practitioners to integrate into health care teams in the UK. 999 EMS Forum, Faculty of 13th International Conference on Emergency Medicine, Singapore, 2010.

Knowles E. "I'm going to learn how to run quick": exploring violence directed towards staff in the Emergency Department. College of Emergency Medicine, Birmingham, UK, 2010.

Turner J, Nicholl JP. The long-term health and healthcare outcomes of accidental injury. 13th International Conference on Emergency Medicine, Singapore, 2010.

Turner J. Health utilization research in Emergency Medical Services (invited speaker). 13th International Conference on Emergency Medicine, Singapore, 2010.

2009

Coleman P, O’Keeffe C, Mason S. 'War and Peace' Strategies by Emergency Care Practitioners to integrate into health care teams in the UK. 999 EMS Forum, Faculty of Emergency Medicine Conference, Coventry, UK, 2009.

Coleman P, O’Keeffe C, Mason S. Emergency Care Practitioners: Qualitative interviews within a national workforce evaluation of new ways of working. Mixed Methods Annual Conference, Harrogate, UK, 2009.

Coleman P, O'Keeffe C, Mason S. Emergency Care Practitioners: Shaping a new type of health care provider from existing NHS roles. New types of worker in health and social care: Skill for care conference, London, UK, 2009.

Nicholl J. Design of trauma systems. Ambulance network conference, England, London 2009.

O'Keeffe C, Mason S, O'Hara R, **Coster J**, Walters SJ. A notes review of the quality and safety of Emergency Care Practitioner care. EMS Chiefs of Canada Conference, Niagara Falls, Canada, 2009.

O'Keeffe C, **Coleman P**, Mason S, O'Hara R. The quality and safety of Emergency Care Practitioner Care: A notes review. New types of worker in health and social care: Skill for care conference, London, UK, 2009.

Turner J, Snooks H. Users views of a change in the management of ambulance 999 calls HTAi Annual Conference, Singapore, 2009.

Turner J, Snooks H, Gaze S. Management of ambulance emergency calls. A mixed methods evaluation of a new service HTAi Annual Conference, Singapore, 2009.

2008

Coleman P, O'Keeffe C, Mason S. Emergency Care Practitioners: Shaping a new type of practitioner from existing NHS clinical roles. 999 EMS Forum, Joint SDO and DH conference 'What's New in Emergency Pre-hospital Care Research, Nottingham, UK, 2008.

Mason S, O'Keeffe C, **Coleman P**. NEECaP Trial Multi-site community intervention trial of emergency care practitioner schemes in the emergency care system – Workshop on Professional Development, Organisational Support and Strategic direction.

Sampson F, **O'Cathain A**, Goodacre S. Is primary angioplasty acceptable to patients and their carers? An evaluation of patient satisfaction with emergency treatment for ST-elevated MI. Delivering better health services. Health Services Research Network and National Institute for Health Research Service Delivery and Organisation Programme annual conference. Manchester, UK, 2008.

2007

J Turner, H Snooks, A Youren, S Gaze, D Fall, J Davies. Can low priority emergency ambulance calls be managed by telephone advice? Society of Academic Emergency Medicine. Chicago, US, 2007. Academic Emergency Medicine 2007; 14(5): suppl 1 27.

2006

Knowles E, Mason S. A Randomised Controlled Trial to Evaluate the Effectiveness of Community Paramedic Practitioners Managing Older People Calling the Emergency Services with Minor Conditions. AMBEX/999 EMS Research Forum, Harrogate 2006.

O’Cathain A, Munro JF, Armstrong I, O’Donnell C, Heaney D. Does it matter who takes your call? The effect of attitude to risk on telephone triage decisions. The UK Society for Social Medicine 50th Annual Scientific Meeting, Leeds, UK, 2006. www.jech.com

(iii) Prizes for dissemination

Patricia Coleman won two prizes for her contribution to dissemination in the field of emergency care research:

JRCALC prize for research most likely to influence practice. Coleman P, O’Keeffe C, Mason S. Emergency Care Practitioners: Shaping a new type of practitioner from existing NHS clinical roles. 999 EMS Forum, Joint SDO and DH conference 'What's New in Emergency Pre-hospital Care Research, Nottingham, UK, 2008.

ZOLL international prize for the highest quality research. Coleman P, O’Keeffe C, Mason S. 'War and Peace' Strategies by Emergency Care Practitioners to integrate into health care teams in the UK. 999 EMS Forum, Faculty of Emergency Medicine Conference, Coventry, UK, 2009.

Janette Turner won two prizes at international conferences:

Best Poster (open section). Turner J, Snooks H. Users views of a change in the management of ambulance 999 calls. HTAi Annual Conference, Singapore, 2009.

Highly commended award. Turner J. Developing new performance indicators for ambulance service category B calls. 13th International Conference on Emergency Medicine, Singapore, 2010.

Emma Knowles won the following award:

Department of Health award for the highest quality research. Knowles E. A Randomised Controlled Trial to Evaluate the Effectiveness of Community Paramedic Practitioners Managing Older People Calling the Emergency Services with Minor Conditions. AMBEX/999 EMS Research Forum, Harrogate 2006.

(iv) Expert groups and committees (emergency and urgent care)

We have always felt that it was important to participate in key expert groups and committees related to emergency and urgent care to ensure dissemination of our research and use of our expertise in this field:

- Member of Department of Health-led Urgent Care Learning Network (**Coleman P**).
- Member of the Review Advisory Group, Emergency Medicine Journal (**Coleman P**).
- Research support for 'The Way Ahead 2008-2012'. College of Emergency Medicine (CEM), 2008 (**Coleman P**).

Research support for 'Acute Health Care Services - a Report of a Working Party'. The Academy of Royal Medical Colleges (AoRMC), 2007 (**Coleman P**).

- Member of South Yorkshire Casualty Reduction Partnership (**Nicholl J**).
- Member Trauma Audit and Research Network Board (**Nicholl J**).
- Member of HTA programme Emergency Care Commissioning Board 2007 – 8. (**Nicholl J**).
- Member of international telehealth and telecare emergency expert panel 2008. 'A rapid review of telehealth contributions to emergency department and discharge operations.' British Columbia Ministry of Health's Emergency and Health services Commission (**O'Cathain A**).
- Expert panel in England to develop guide 'Involving patients and the public in the early and ongoing development of urgent care services'. The National Centre for Involvement, 2008 (**O'Cathain A**).
- Member of the Department of Health Emergency Call Prioritisation Group (**Turner J**).
- Member of the British Paramedic Association Research & Audit Committee (**Turner J**).
- Member of Department of Health National Working Group on Emergency & Urgent Care Performance indicators (**Turner J**).
- South Yorkshire CLRN Injuries & Emergencies Local Priority Group Lead and National Injuries & Emergencies Specialist Group member (**Turner J**).
- Board member of the 999 EMS Research Forum (**Turner J**).

- Fellow of the International Academy of Emergency Medical Dispatch and member of the Omega standards committee (**Turner J**).

(v) Other contributions to the wider research endeavour

Professor Nicholl:

- Member of the MRC Methodology Research Commissioning Panel (2008 -)
- Chair of the Health Technology Assessment Programme Commissioning Board (2005 -2010)
- Chair HTA Clinical Trials Commissioning Board (2006 -)
- Member of HTA programme Emergency Care Commissioning Board (2007 - 8)
 - and The Hospital Acquired Infections Commissioning Board (2008 - 2009)
- Deputy Director NIHR Health Technology Assessment Programme (2005 -2010)
- Chair METADATA Project steering committee (2010-)
- Chair PROMISE trial Data monitoring committee (2010-)
- Elected member Health Services Research Network Board (2010-)
- Member Black Country CLAHRC Advisory Board (2009-)
- Chair PARAMEDIC Trial Steering Committee (2009-)
- Member of the DH Health Reform Evaluation Advisory Panel (2008 -)
- Member of the OSCHR Translational Medicine Board (2007 – 2010)
- Member of RAE 2008 panel B7 (Health Services Research)
- Gave evidence to House of Commons Health Select Committee (March 2008)
- Member Editorial Advisory Board – Journal Health Services Research and Policy (2008-)
- Member of NICE Evidence Advisory Board (2008-)
- Nicholl JP. The role of observational studies in Health Technology Assessment. EuNET HTA, Stockholm, Dec. 2009.
- Nicholl JP. Casemix Adjustment. ISQAL, Copenhagen. Sept 2008.
- Nicholl JP. Health Technology Assessment in the UK.3rd Italian Regulatory Affairs Conference. Verona, 2007.
- Nicholl J. The role of non-randomised studies in HTA. EUnet Conference, Stockholm, Sweden, 2009.
- Nicholl J. Improving clinic trials. NIHR HTA programme, London, England, UK, 2009.
- Nicholl J. Complex clinical trials. NIHR Senior Investigators meeting. Birmingham October 2010.

Conclusion

Over the past five years the MCRU has worked closely with policy makers to facilitate evidence informed policy-making in emergency and urgent care. This has been possible because of the funding over the five years but also because of the expertise of individual members of the unit, gained over many years of past MCRU funding.

In 2009 the Department of Health tendered for ten new policy units to replace existing units. Department of Health funding for the MCRU terminated at the end of 2010. However, the MCRU will continue as a research centre in the School of Health and Related Research at the University of Sheffield with Professor Alicia O’Cathain as director and Janette Turner as deputy director.

The remit of the new MCRU will be health care evaluation. Current projects include:

- Evaluation of primary care trust commissioning (2008-2011, NIHR Policy Research Programme, £500k)
- Development and evaluation of telehealth interventions for long term conditions (2009 – 2014, NIHR Applied Research Programme, £2m)
- Maximising the value of qualitative research with trials (2010-2012, Medical Research Council, £250k)

The MCRU will continue to offer expert advice on emergency and urgent care to policy makers and work with a wide of range of national and international researchers to deliver high quality health services research. Emergency and urgent care research will remain as a central theme of the MCRU. Current projects within this theme include:

- Evaluation of the 111 urgent care telephone line (2010-2011, NIHR Policy Research Programme, £400k).
- Developing new ways of measuring the impact of ambulance service care (2011-2015, NIHR Applied Research Programme, £1.9m)

The £2m programme on developing outcomes for ambulance service, undertaken in collaboration with a range of colleagues in England and Wales, and jointly led by Professor Siriwardena and Janette Turner, has emerged from many years of expertise in ambulance research gained through MCRU funding.