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<th>Agenda item:</th>
<th>11.1, Public</th>
<th>Date:</th>
<th>28 November 2012</th>
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<tr>
<td>Title:</td>
<td>Research and Development (R &amp; D) Annual Report</td>
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<tr>
<td>Prepared by:</td>
<td>Chris Gardner, R &amp; D Manager</td>
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<tr>
<td>Presented by:</td>
<td>Andrew Hattersley, Professor of Medicine, Consultant Physician AND Director of R &amp; D</td>
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<td>Responsible Executive:</td>
<td>Martin Cooper and Vaughan Lewis, Joint Medical Directors</td>
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<td>Summary:</td>
<td>The Annual R &amp; D report for the Royal Devon and Exeter Foundation Trust</td>
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<td>Actions required:</td>
<td>The Board is asked to note the report for information</td>
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<td>Status (*):</td>
<td>Decision</td>
<td>Approval</td>
<td>Discussion</td>
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<tr>
<td>History:</td>
<td>The report is presented annually to the Board</td>
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### Monitoring Information

Please specify CQC standard numbers and tick other boxes as appropriate.

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<td>Monitor</td>
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<td>Performance Management</td>
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<td>Equality, diversity, human rights implications assessed</td>
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Research and Development (R & D) Annual Report
28 November 2012
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<th>Purpose of paper</th>
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<td>To inform the Board about research and development activities.</td>
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<th>Resource/legal/financial/reputation implications</th>
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<th>Links to Board Assurance Framework/Key Risks</th>
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<td>The Board is asked to note the report.</td>
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Royal Devon and Exeter NHS Foundation Trust
Research and Development Annual Report 2011/12
Executive Summary

Research continued to flourish at the Royal Devon & Exeter NHS Foundation Trust in 2011/12 as evidenced by over 190 publications from staff (see appendix), NIHR funding in excess of £10M per annum and external grant funding of over £5m. The key research partnership is with University of Exeter and there is increasing collaborative research both with the University of Exeter Medical School and other departments. The trust is supporting an increasing quantity and diversity of investigator led research in many different clinical areas and these are helped by support from the NIHR infrastructure in the NIHR Exeter CRF and the NIHR PenCLAHRC.

Clinical Trials

The Royal Devon & Exeter recruited 9200 patients in 2011/12, has been the top recruiting Acute Trust in the Peninsula since the NIHR baseline year of 2008/9 and retained that position in 2011/12. The Guardian website lists the RD&E as the 18th highest recruiting Trust out of 399 recruiting to portfolio studies in 2010/11.

Performance Highlights

- 50% increase in commercial trial approval in 2011/12 when compared to the previous year.
- Approval times reduced from a median of 30 days to 17 days.
- Excellent recruitment to studies: e.g. one industry study in renal patients (CCRN 523) exceeded its target recruitment by 230 patients totaling 430 recruits.
- Improved times in site approval: e.g. RD & E was the fastest site approval for FEMME study - 17 days.
- Improved representation in PenCLRN specialty groups. A measure of the increased engagement and commitment from clinicians based at the RD&E is that there are now 6 regional speciality leads (see table) when there were none in 2010-11:

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<tr>
<th>RD&amp;E PenCLRN Specialty Group Leads 2011-12</th>
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<tr>
<td>Gastroenterology</td>
<td>Dr Ahmad</td>
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<td>Injuries &amp; Emergencies</td>
<td>Dr Appelboam</td>
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<td>Surgery</td>
<td>Mr McGrath</td>
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<td>Dermatology</td>
<td>Dr Charman</td>
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<td>Respiratory</td>
<td>Dr Gibbons</td>
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<td>Genetics</td>
<td>Dr Sian Ellard</td>
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NIHR Exeter Clinical Research Facility

During this fifth year of operation, the NIHR Exeter Clinical Research Facility (CRF) is a joint venture of the Trust with Exeter University aiming to understand the mechanisms of disease so treatment can be improved. The CRF has continued to grow, with a further 25% increase in recruitment and significant increases in academic outputs and external income.

Funding
The CRF is now recruiting over 8000 people a year into research studies and bringing in over £2 million a year in research funding and £1 million a year in NIHR infrastructure funding.

This year the Exeter CRF won a further 5 years infrastructure funding totalling £5.7 million. This was the 4th largest award in the UK.

Professor Hattersley, has also been asked by the MRC to lead a £6 million project on the stratification of Type 2 diabetes treatment and has jointly awarded with Professor Ellard a £2.8 million Senior Investigators award from the Wellcome Trust to study the genetics if children with neonatal diabetes to help understand the development and function of the insulin secreting beta-cell.

Infrastructure
The CRF manages 3 tissue banks and research registers which have provided over 6000 samples for research projects and recruited volunteers to 23 studies. CRF staff also provides infrastructure support to coordinate multi-centre projects, such as the 5-ASA project which is open at over 100 sites.

Training
CRF team members provide specialist training for diabetes specialist nurses on a national level and provide local research training for clinicians either as clinical fellows or PhD students.

Awards
Dr Tim McDonald, a Trust Clinical Biochemist, and recent CRF PhD graduate, was awarded the NHS Young Healthcare Scientist of the Year 2012 and was awarded a NIHR CSO Healthcare Science Post-doctoral Research Fellowship Programme for 4 years research on integrating clinical investigations to improve care.

Professor Hattersley's and Professor Ellard's Genetic Diabetes Team were awarded the University of Exeter International Impact Award and also the International ISPAD award for Innovation in Paediatric Diabetes Care for their work in improving diagnosis and revolutionising treatment of genetic diabetes.

Research Highlights
The CRF has developed the Urinary C-Peptide test (UCPCR) a simple outpatient test to measure how much insulin a patient is producing. This simple test has now been rolled out in over 40 NHS trusts nationally and is being used within a number of national and international studies including PRIBA, UNITED & DIRECT.

The HICF-funded UNITED Project has been highly successful in recruiting over 1700 people diagnosed with early-onset diabetes. Early results demonstrate that the use of UCPCR and antibody pathway is effective in helping to identify those patients requiring genetic testing and that making a genetic diagnosis allows treatment change which benefit patient care.

The IMI-EU-funded SUMMIT project has recruited nearly 500 patients to a 4 year international study examining surrogate markers of vascular disease. The CRF is on target to complete baseline recruitment by February 2013 as planned.
Collaboration between Exeter CRF and the Stroke Research Network and Diabetes Research Network

A number of studies have benefited from collaborations between disease specific research networks including the following:

The REMOVAL study utilises the recruitment expertise of the DRN and the vascular measure skills of CRF Staff to study the effects of Metformin treatment in patients with Type 1 diabetes.

The PROMOTE study is a CRF/SRN collaboration that asks whether protein in the urine is predictive of a second stroke.

The LAST study looks at whether a diabetes drug given following a stroke can reduce infarct size by improving blood flow.

NIHR PenCLAHRC (Peninsula Collaboration for Leadership in Applied Health Research and Care)

PenCLAHRC is an NIHR funded infra-structure of leading health services researchers that assess whether interventions are effective. They investigate key areas identified by NHS patients and healthcare workers where research is needed.

Funding

The PenCLARHC receives approximately £1 million/ year in infrastructure and research projects have attracted £1.4 million in external funding and 52 papers have been published.

PenCLAHRC Research Highlights at RD&E

Stroke

The Stroke team have worked with PenCLAHRC on examining the in-hospital pathways for stroke management and optimise the time between arrival at hospital, CT scanning and being given thrombolysis treatment. The project covers all local five hospitals beginning with the Royal Devon and Exeter NHS Foundation Trust.

As a result of the study, the ambulance advance alert system has been implemented in the hospital to ensure investigation and treatment can be planned before the patient has arrived in the Accident and Emergency department. Data are being collected to examine the impact of reducing the time to thrombolysis and the resulting reduction in disability.

RD&E Health Services Research

The Trust encourages health services research by clinicians in collaboration with PenCLAHRC and academic partners at the Medical School and other departments at Exeter University. R&D supports this work by funding small projects which have the potential to either answer simple questions or to provide pilot data to help applications for large scale external funding. We have found around 50% of these projects lead to a publication, or a grant application particularly for the NIHR Research for Patient Benefit where we have had considerable success. Some examples are:

Physiotherapy: Labral tears are a common cause of hip pain in young adults. Much needed research in to the role of physiology in improving function and reducing pain is currently underway.

Anaesthetics: A single centre, randomised trial, of two treatments for post-operative analgesia following knee arthroplasty is being conducted to assess the most effective method to promote readiness for discharge.

Accident and Emergency: Dr Andy Appelboam secured a £247k NIHR Research for Patient Benefit grant to carry out a trial of Valsalva maneuver in patients experiencing re-entrant tachycardia.


46. Eggleton P, Bremer E, Tarr JM, de Bruyn M, Helfrich W, Kendall A, et al. Frequency of Th17 CD20+ cells in the peripheral blood of rheumatoid arthritis patients is
higher compared to healthy subjects. Arthritis research & therapy. 2011;13(6):R208.
Epub 2011/12/17.

analysis does not support causality in the relationship between raised maternal fasting glucose in pregnancy and offspring adiposity at age 9 years. Diabetic Medicine. 2011;28:51-2.


65. Guegan K, Stals K, Day M, Turnpenny P, Ellard S. JAG1 mutations are found in approximately one third of patients presenting with only one or two clinical features of Alagille syndrome. Clinical genetics. 2011. Epub 2011/07/15.


71. Halpin DMG. Improving the management of COPD. BMJ. 2011;342(7801).


77. Hayes GE, Sheldon CD, Patel BD. Can clinical, radiological or laboratory parameters differentiate H1N1 associated pneumonia from community acquired pneumonia? Thorax. 2011;66.


84. Jafar-Mohammadi B, Groves CJ, Gjesing AP, Herrera BM, Winckler W,


103. Lloyd JJ, Logan S, Greaves CJ, Wyatt KM. Evidence, theory and context - using


111. McDonald TJ, Shields B, Kemp J, Gloyn AL, Owen K, Ellard S, et al. High sensitivity c-reactive protein can be used as a biomarker to identify patients with HNF1A


Appendix

Royal Devon and Exeter NHS Foundation Trust
Research Publications (2011)


142. Ripley DP, Bellenger NG. Cardiac magnetic resonance imaging is established in cardiomyopathies. BMJ. 2011;343(7836).


2011;31(8):567-70.


life first-line treatment of B-CLL - A population-based prospective study following nice
guidelines permitting use of fludarabine, cyclophosphamide and rituximab - A
or not Trails B?' Is attention-switching a useful outcome measure? Brain Injury.
2011;25(10):958-64.
170. Tonks J, Yates P, Frampton I, Williams WH, Harris D, Slater A. Resilience and
the mediating effects of executive dysfunction after childhood brain injury: A comparison
2011;25(9):870-81.
171. Turnpenny PD, Ellard S. Alagille syndrome: pathogenesis, diagnosis and
172. Veeramootoo D, Shore AC, Wajed SA. Laparoscopic gastric ischemic
conditioning prior to minimally invasive esophagectomy, the logic trial. Surgical
Endoscopy and Other Interventional Techniques. 2011;25.
173. Veeramootoo D, Shore AC, Wajed SA. Surgical technique influences perfusion of
the gastric conduit used for a minimally invasive esophagectomy. Surgical Endoscopy
and Other Interventional Techniques. 2011;25.
gastrointestinal, and cardiac toxicity in intermediate hepatocellular carcinoma treated
with PRECISION TACE with drug-eluting beads: results from the PRECISION V
known mutations of ABCC8 causing congenital hyperinsulinism in Vietnam. Hormone
Research in Paediatrics. 2011;76.
176. Waters O, Ahmad T. Opportunistic infections and vaccinations in IBD patients.
Journal of Crohn's and Colitis. 2011;5(3).
Otolaryngology. 2011;36(3).


