2015/16

ANNUAL REPORT

NICRN CLINICAL RESEARCH NETWORK

NICRN Co-ordinating Centre

Northern Ireland Clinical Research Network

2015/16

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Section 1

Director's Summary

NICRN Annual report 2015-2016

Forward from the NICRN Director

I took up post as NICRN Director in August and would like to acknowledge the work of my predecessor, Professor Ian Young for his direction and development of the network over the last number of years.

NICRN has continued to develop strongly and currently deploys 44.83 whole time equivalent staff members spread across the NICRN co-ordinating centre and HSC Trusts supporting research activity in twelve distinct clinical specialty areas. Headline figures show an increase in NICRN activity over 2015-2016 with a total of 4279 patients accrued to clinical research studies across all interest groups. Over the reporting year there were 194 active studies [an increase in 11% over the previous year] with the number of studies adopted for network support increasing by 31%.

Significant developments in 2015 -2016 were the formation of new clinical specialty interest groups in Gastroenterology [co-leads Dr Peter Watson and Dr Seamus Murphy] and Mental Health [co-leads Professor Gerry Leavey and Dr Ciaran Mulholland]. Other changes in 2016 have included Professors Margaret Cupples and Carmel Hughes standing down from their roles as co-leads of the Primary Care interest group and I would thank them for their commitment in developing the primary care group so successfully.

I would like to commend all NICRN staff based in the Co-ordinating Centre, HSC Trusts and in primary care along with HSC Trust and primary care researchers whose very hard work has contributed to the success and expansion of the network . Finally I would like to thank all those patients throughout N. Ireland who have participated in NICRN supported clinical research studies in 2015-2016; patients are at the centre of NICRN and their participation provides the evidence base for more effective treatments and interventions.

Section 2

Overview and Development of the Network

Introduction

The Northern Ireland Clinical Research Network (NICRN) was established in 2008 to support the contribution of the clinical research community in NI to the work of the UK Clinical Research Collaboration (UKCRC) and the associated Devolved Nations clinical research networks (CRN's). The NICRN is funded by the HSC Research & Development Division of the Public Health Agency and has a remit of supporting and facilitating clinical trials and other high quality clinical research projects being undertaken across the HSC environments.

Our aims are to

- Enhance the ability of patients and health care professionals to participate in and benefit from clinical research by providing full regional coverage when and where appropriate
- Enhance the quality of clinical research undertaken within HSC by providing a centrally managed approach
- Improve the speed of delivering research outcomes by ensuring continued monitoring of our portfolio in line with anticipated and informed targets
- Enhance the regional coordination of clinical research across Trusts and academic organisations through simple but effective communication pathways
- Improve local integration of clinical research within HSC structures and services by engaging across groups and with all relevant stakeholders

Our organisational structure (appendix 1) is built around a hub and spoke design to facilitate easier connectivity, shortened communication pathways and quicker reaction time, which are strengths inherent to our regional scale. The network is operationally managed via a central coordinating centre hosted by Belfast Health & Social Care Trust (BHSCT). This places the co-ordination of the NICRN close to the majority of active researchers from Northern Irelands HSC trusts.

Reporting period

This document presents the activity and performance outputs from the NICRN disease specific interest groups for the period from 1st April 2015 to 31st March 2016. All NICRN Interest group data is presented in appendix 2.

Core performance targets

Each group is expected to achieve targets set in line with predicted activity, strategic direction and core staffing. This is to maximise productive health and financial returns on core funding in terms of numbers of patients and health care professionals engaged with locally placed clinical trials and other high quality research projects. This enables the development of a high quality local portfolio and regional approach to conducting research. Each group's leads meet with the director to agree targets set around the number of studies adopted, minimum % recruitment to target, the % of commercial involvement, the proportion of clinical trials especially Clinical Trials of Investigational Medicinal Products (CTIMPs) and the development of a regional collective approach to study adoption.

Network development over reporting period

Table 1 summarises some core data from the groups and compares this year's activity against the previous 3 years.

Interest group	total active studies **15/16** (14/15)(13/14)(12/13)	No studies adopted **15/16** (14/15)(13/14)(12/13)	Total patients screened **15/16** (14/15)(13/14)(12/13)	Total patients accrued **15/16** (14/15)(13/14)(12/13)
Cardiovascular	**35** (27)(31)(17)	**11**(10)(12)(4)	**856**(1582)(1641)(900)	**404**(384)(1116)(291)
Childrens	**18**(15)(16)(19)	**3**(0)(5)(1)	**190**(354)(1026)(462)	**138**(146)(241)(162)
Critical Care	**13**(18)(23)(10)	**6**(2)(15)(4)	**2365**(4090)(3707)(2797)	**220**(445)(623)(127)
Dementia	**5**(4)(2)(1)	**3**(1)(1)(1)	**255**(81)(162)(102)	**2**(81)(151)(97)
Diabetes	**16**(14)(15)(10)	**4**(4)(7)(6)	**2148**(681)(798)(462)	**382**(317)(415)(53)
Primary Care	**9**(16)(15)(12)	**4**(5)(6)(5)	**404**9(7204)(6515)(2294)	**2587**(281)(1344)(532)
Renal	**23**(24)(22)(15)	**6**(3)(8)(15)	**696**(680)(207)(231)	**337**(257)(82)(179)
Respiratory Health	**33** (21)(19)(15)	**18**(6)(6)(4)	**2154**(1457)(1370)(430)	**101**(95)(146)(206)
Stroke	**15** (12)(9)(9)	**5**(5)(3)(2)	**975**(2878)(2921)(5961)	**58**(35)(55)(106)
Vision	**27** (23)(18)(19)	**11**(13)(4)(4)	**109**(281)(223)(223)	**50**(73)(230)(151)
Totals	**194** (174)(170)(127)	**71**(49)(67)(46)	**13797**(19288)(18580)13862)	**4279**(2114)(4403)(1904)

In general the groups have maintained a steady state of activity, delivered in line with their set objectives and within available staff capacity.

Over the reporting period the regional portfolio across all groups showed a marked increase in the number of active studies. Up 11% on the previous year with a total of 194 studies running as compared to 174 in same period last year. These were in no small part due to local increases in active studies over the cardiovascular and respiratory groups (30% and 50% increases respectively)

Similarly the number of adopted studies increased by 22, 31% up on the same period last year. Most of this can be attributed to the increased adoption rate across our respiratory health and critical care groups.

In terms of actual NI service users engaged/accrued to studies this activity was also significantly increased from 2114 in 14/15 to 4279 in 15/16, a marked increase of just over 50%. However care must be taken in drawing any inferences around this value as it was impacted greatly by the primary care group's activity delivering 2310 participant to the National "Drink wise - Age well" study, achieving twice their intended NI target.

Table 2 summarises some core data from the group's objectives and compares this year's activity against the previous 3 years along with each group's percentage of target recruitment.

Interest Group	No of Commercial sponsored studies **15/16 (14/15)(13/14)(12/13)**	No of randomised **15/16** (14/15)(13/14)(12/13)	No of NI Multi-centred **15/16** (14/15)(13/14)(12/13)	% Recruitment to target **15/16** (14/15)
Cardiovascular	**23**(17)(11)(6)	**17**(11)(11)(11)	**6**(6)(5)(5)	**79**(90)
Childrens	**3**(1)(1)(2)	**1**0(8)(5)10)	**8**(9)(8)(6)	**77**(76)
Critical Care	**1**(2)(1)(0)	**8**(12)(12)(6)	**4**(9)(11)(3)	**87**(92)
Dementia	**1**(2)(1)(0)	**2**(2)(1)(0)	NA	**2**(57)
Diabetes	**10**(8)(4)(0)	**11**(9)(7)(6)	**8**(7)(8)(3)	**108**(85)
Primary Care	**4**(5)(4)(2)	**6**(9)(8)(4)	**12**(12)(11)(9)	**132**(102)
Renal	**7**(10)(8)(9)	**6**(10)(7)(6)	**14**(15)(11)(7)	**74**(78)
Respiratory Health	**20**(14)(11)(9)	**22**(15)(11)(9)	**2**(3)(5)(2)	**77**(106)
Stroke	**3**(1)(1)(1)	**13**(10)(8)(7)	**9**(8)(8)(8)	**73**(70)
Vision	**17**(14)(10)(12)	**12**(13)(10)(11)	NA	**89**(86)
Totals	**89**(74)(52)(41)	**161**(90)(80)(70)	**63**(69)(67)(51)	**MEAN 80**

The NICRN Interest Groups are set annual objectives around the number of portfolio studies which are commercially sponsored, number of randomised studies and the number of their studies which are undertaken at more than 1 NI site. These objectives are set so that the groups can generate income for later investment, illustrate the quality of their portfolios and truly engage in a shared approach to study delivery over as much of the HSC as possible, thereby facilitating service user access.

Notable increases in the number of commercial partnerships were observed in 15/16 across our cardiovascular, up 22% on last year (n=6), diabetes up 25% (n=2), respiratory Health up almost 43% (n=6) and Vision, up 21% (n=3) on last year, groups. Following a relatively fallow year in 14/15 the childrens group has increased their commercial engagements by adopting 3 new commercial trials over 15/16. Likewise our stroke group also increased their commercial portfolio to 3 studies in 15/16.

Of note here is the increase across our diabetes group, indeed the groups clinical leads, Dr Hamish Courtney and professor Viv Coates, are due some additional recognition for the considerable time and effort they have put into this area by engaging and facilitating new partnerships with several notable pharma and biotech companies.

Across all groups the portfolio had 89 commercially sponsored studies in 15/16 as opposed to 74 in 14/15, an increase of approximately 20%.

This highlights the potential for income generation across all the NICRN. To continue our development the network needs reinvestment to allow further development of structures and facilities enabling potential principal investigators, clinical research support staff to have the appropriate time and flexibility to engage more with research and therefore enablet the local service user's ability to engage with R&D as part of their standard health care experience. To this end then, the focus regionally, needs to be on developing an income management policy which has full regional coverage. This will secure that monies generated by network activity and investment are available for reinvestment into key strategic areas or to .

We generally view the number of Randomised Clinical Trials (RCT) as an indicator of the quality of the portfolio and over 15/16 the number of RCT was raised from 90 in 14/15 to 161 in 15/16 an increase of almost 80% on the same reporting period last year. Again the large increases were seen across our Cardiovascular (up by 54%, n=6) and respiratory health (up by 46%, n=7) groups though the childrens (up 25%, n=2) diabetes (increased by 33%, n=2) and stroke (30%, n=3) groups all showed small targeted increases. Our critical care, primary care, renal and vision groups all showed a small reduction in RCT over their portfolios for this time period.

In terms of each groups regional coverage, we can report that there is a remarkable stability to the number of studies operating across more than 1 NI site with very little change from 14/15 with 63 studies open at 1 or more NI sites as compared to 69 in 14/15.

Whereas the NICRN enables HSC Trusts to engage with Clinical Trials and other high quality research projects, very often the limiting factor for sharing of studies across sites is now the availability of principal investigator's, access to already busy clinical services which are supportive of R&D and availability of the necessary equipment.

Of particular interest and pride to the group is the NICRN's ability to deliver to target. Of those studies that closed across 15/16, the mean of the % recruitment to target data (80% of all groups) clearly indicates that we are particularly good at delivery of studies to target and time. It has been agreed that all studies should recruit to a minimum of 80% of the contracted target before being defined as successful.

Over 15/16, 70% of groups achieved this 80% target or were within a 5% tolerance. Only 3 groups sat outside this level of which 2 were at 73% and 74%.

These figures provide study sponsors with additional confidence that study targets will be met and hence should aid NI in securing additional studies.

New developments

Within this reporting period a new disease specific interest group was established within the NICRN. Following the proposal to the HSC R&D Division, the NICRN Gastrointestinal group was established. In December 2015 it held its inaugural meeting, bringing together research active clinicians from all 5 HSC trusts, under the leadership of Dr(s) Peter Watson (BHSCT) and Seamus Murphy (SHSCT).

At this meeting presentation were made by potential collaborators such as all Ireland GI platforms and representatives from different pharma bodies. This promotional event established the group and brought together different potential stakeholders with the intent of agreeing the collaborative working practices for the group, its management under the NICRN co-ordinating centre and the deployment of core funded research support staff.

Local Portfolio Management System

As described in previous annual reports the NICRN along with our NICTN colleagues have led the establishment of a NI Local Portfolio Management System, with the Southampton University EDGE system chosen for its adaptability and core functionality. Over the reporting period the system further to its deployment within NICRN and NICTN, became live across all 5 HSC Trust R&D Governance offices. This enables efficient regional oversight and monitoring of all studies across all sites, especially network adopted studies, and allows stakeholders such as funders or hosting organisations to quality assess the on-going development of the studies to time and target.

Staffing

The staffing compliment for the network is stable with an agreed WTE staffing compliment of 44.83 WTE network support staff made up of 36.83 band 6 clinical research nurses, 4.0 WTE Band 4 administrators, 3 band 7 support staff (optometrist, Imaging technician and clinical trials practitioner) as well as the network co-ordinating centre staff of 1 band 8a senior manager, 2 band 7 staff and portfolio managers, one band 6 adoptions co-ordinator and a band 4 administrator.

Staff capacity is now the major decider in whether a study can be adopted or rejected. To inform this decision the NICRN coordinating centre has developed the role of an amended

version of the UK Clinical Research Facilities intensity tool. This is simply a formulated Excel spread sheet that calculates the WTE required to deliver the defined study actions. The formulae build's in productive working times and as it is completed by the staff who will be delivering said functions hence the outputs are as accurate a descriptive of delivery requirements as can pragmatically be defined.

The intensity tool has been further developed over 15/16 to firstly be more reflective of study intensities over the duration of a study pathway i.e. defining changes between set-up, active accrual, follow up and close out. The intensity tool now acts as a core document in the NICRN adoption process (appendix 3) and will clarify the actual working level for the staff compliment per group/site etc. This then informs the CMG decision with respect to available capacity and planned workforce demands across the future reporting periods

The staff component makes up over 75% of total spend and as the central pillar of the network, the staff have always been supported in their training and education allocation over and above standard practice. Over 15/16 we supported all our appropriate staff in attending 25 standard mandatory training events across the 5 HSC Trusts. This was augmented with a further 23 non mandatory events including 4 NICRN specific training events provided by Professor Allan Gaw. On top of this allocation each group was supported via cost coverage for specific training pertinent to the group. In total a further 66 training and education attendances were supported by the network for its staff development.

Interactions

In terms of local interactions the network staff engages daily with platforms such as the NICTN, NICRF, HSC Trust R&D governance offices, NI gateway and outside bodies such as Patient and Client council, Queens University, University of Ulster, Invest NI, our Devolved Nation partners and the commercial sector.

Section 3

Topic Specific Reports

Cardiovascular Interest Group

Co clinical leads Professor Donna Fitzsimons and Dr Patrick Donnelly

Introduction

The Cardiovascular Speciality Interest Groups' primary function is to enable high quality clinical research to be delivered in a collaborative fashion across all cardiovascular active sites in Northern Ireland. We are fortunate to have a steering group with a broad range of expertise which allows the group to identify and attract high profile research initiatives that align with the unmet needs of our cardiology patients and carers.

Portfolio

At year end the CV portfolio had 38 active studies open of which 60% were randomised multicentre studies. 54% of these were high profile international commercial projects and 46% were investigator led, collaborative grant funded non-commercial initiatives. The commercial studies adopted mirrored the national NIHR cardiovascular portfolio. The non-commercial studies supported the delivery of NIH, European FP7, and PHA R&D funded projects. Figure 1

Two thirds of the portfolio involved the use of research medications or devices that were novel for the treatment of existing cardiovascular disease. The novel medications included blood thinning tablets that can treat heart attacks and strokes, and personal genome targeted treatments for high cholesterol. The devices included small balloons that can be placed in a coronary artery that can deliver a drug to a narrowing and thereby improve blood flow, new coronary artery stent designs that can be reabsorbed by the human body after they have treated the coronary artery narrowing or blockage and completely new heart valves that can be delivered percutaneously without the need for open heart surgery.

The remaining studies focused on personalised medicine initiatives from bio-banking for proteo-genomic analysis of blood samples for subjects with suspected and proven

cardiovascular disease, new biomarkers for patients with suspected myocardial infarction to facilitate early detection, novel applications for technology that could reform pathway investigation and management of patients and the assessment of patients and carers needs in the management of chronic heart disease.

We were also fortunate as a region to be selected for two pre-CE marked studies, which is a first for the group. These studies offered cutting edge interventions and novel diagnostic tests to NI patients. As a group we hope that the successful delivery of these projects will consolidate our reputation as a region that can attract further high profile pioneering medical research initiatives.

In total 3458 patients were screened across Northern Ireland for these studies, approximately 9 patients per day with 1734 considered eligible and consented for recruitment. Figure 2

Figure 1 – Cardiovascular Study Design

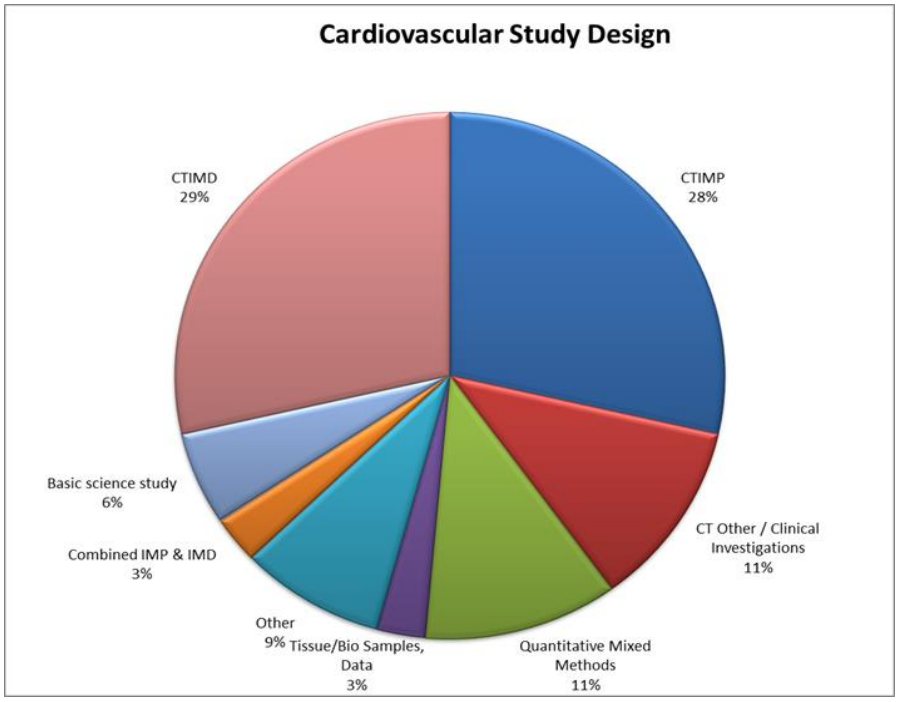
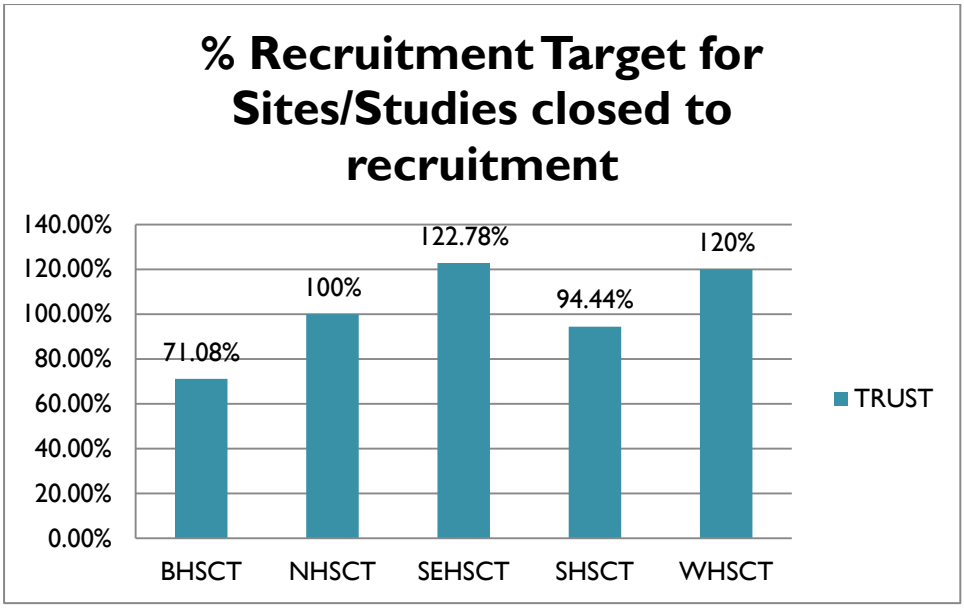


Figure 2: Recruitment as % of target.



The Northern Ireland Cardiovascular Group has delivered on its commitment to complete research to time and target. We were top recruiters nationally for COMPASS, GLOBAL, MILES UK, and international top recruiter for NOBLE. Understandably our centres have received very favourable feedback from our commercial sponsors. Our non-commercial work has been well received at both local, national and international meetings including ESC, ESC CCNAP, BSC, ICS, SCCT, and ESCR where it has gained peer recognition in the form of a number of prodigious awards.

Staff

Our current group includes; Dr Patrick Donnelly (SET), Professor Donna Fitzsimons (QUB), Dr Mark Harbinson (BHSCT), Dr Ian Menown (SHSCT), Professor Aaron Peace (WHSCT), Dr Mark Spence (BHSCT) and Dr Kris Lyons (NHSCT). In addition there are 7.2 WTE (see Table 1). In the year ahead it is anticipated that due to recent successful accrual and retention rates to commercial studies that there will be an increase in demand that will not be matched by our infrastructure capacity.

Table 3: NICRN Cardiovascular staffing component funded versus in post

HSC Trust	POSITION/BAND	R&D FUNDED	WTE IN POST
BHSCT	BAND 6 NURSE	1.0	1.0
BHSCT	BAND 6 NURSE	1.0	0.6
BHSCT	BAND 6 NURSE	1.0	1.0
NHSCT	BAND 6 NURSE	0.2	0.2
SEHSCT	BAND 6 NURSE	1.0	1.0
SEHSCT	BAND 4	1.0	1.0
SHSCT	BAND 6 NURSE	0.5	0.5
SHSCT	BAND 6 NURSE	0.5	0.5

WHSCT	BAND 6 NURSE	1.0	1.0
B6 = 6.2 WTE B4 = 1.0 WTE		B6 = WTE 5.8 B4 = WTE 1.0 WTE	

Interaction with other infrastructure

The NI Cardiovascular Group is pleased to once again have investigators in all five HSCTs in NI, bringing equality of access to our population irrespective of their geography. We have reached out to both primary care and stroke network groups this year where there was opportunity for collaboration. We are currently engaged with both local universities in hypothesis synthesis for the delivery of a number of projects.

Childrens Interest Group

Dr Anthony McCarthy **Dr David Sweet**

Consultant Paediatric Oncologist **Consultant Neonatologist**

Introduction

The Children's Clinical Management Group have recently appointed 2 new Clinical Leads. Dr Anthony McCarthy with his background in Paediatric Oncology has previous experience as Principal Investigator of numerous Paediatric Oncology Trials and Dr David Sweet has an interest in Neonatal randomised controlled trials. The hope is that their joint appointment will enable these complimentary skills to enable wider development of the Paediatric Clinical Research Portfolio. There have been significant challenges for the Children's Management Group. Until recently there was an absence of a Clinical Lead and in addition significant reduction in nursing capacity due to a combination of maternity and sick leave. The capacity of nursing staff in post is one whole time equivalent below the funded level but there will shortly be an appointment of a new 0.6 whole time equivalent Children's Nurse to try and make up the short fall. In the interim the nurses currently in post have done their utmost to cross cover among different Trusts to try and continue to deliver on the commitments of

the current portfolio and more recently the Children's Group have been able to adopt new studies as we move forward.

Portfolio and Recruitment

The Children's Interest Group currently has 10 active studies and 4 studies which have recently been adopted and are about to start. Over the course of last year there were 6 open trials across 9 sites, 4 further studies that are closed to recruitment but still in follow up across 7 sites and during last year a further 3 studies across 6 sites were closed. The newly adopted studies will hopefully replace the ones that have closed in terms of demands on nursing activity and the 4 studies will run across 5 proposed sites and more may come on board as the studies get up and running. As of June 2016, over the course of the last year, 617 paediatric patients have been screened and 167 recruited across all studies and sites in Northern Ireland. For some studies the percentage recruitment to target has been greater than 100% and for others, although there had been very successful recruitment, the overly ambitious targets appeared to hide the underlying success of the study. We plan to educate PI's in terms of how to predict the likely numbers of potential recruits when proposing studies in future. Overall there has been almost 77% recruitment to target across all sites despite the difficulties with staffing over the last year, this is credit to the nursing staff who continue to work very hard to try and deliver a very stretched service.

The majority of recruitment to Paediatric Clinical Trials has been happening on the Children's Hospital and Royal Maternity Hospital sites. There has been considerable difficulty engaging interested PI's from the District General Hospital's and difficulties in governance arrangements when planning a multi-centre trial recruitment across sites within the neonatal network. We plan to work hard over the next year to try and resolve some of these issues and to provide more support for colleagues in district hospitals to encourage them to get involved in Paediatric Clinical Trials.

The new Clinical Leadership Team has only been appointed within the past 3 months and we are hopeful that with the combined expertise from within neonatology and children's cancer clinical trials, we will hopefully be able to expand our activities over the forthcoming years. Several studies have not been able to be adopted because of the recent challenges with nursing staffing but we are hopeful that as we move forward we will find ways to address this issue.

Work Force

Table 4 NICRN childrens group staffing allocation across all sites

Trust	WTE funded	WTE post	Job Title	Banding	Comments
BHSCT	**1.0**	**0.5**	**Nurse**	**6**	
BHSCT	**1.0**	**1.0**	**Nurse**	**6**	
SHSCT	**0.5**	**0.0**	**Nurse**	**6**	**On sick leave**

					until end of June
SHSCT	**0.5**	**0.4**	**Nurse**	**6**	
WHSCT	**0.5**	**0.5**	**Nurse**	**6**	
Sub-Total	**3.5**	**2.4**			

Financial Statement

The majority of Clinical Trials in the Paediatric Portfolio are national multi-centre randomised controlled trials. In the past year there was 1 commercially funded study and the hope is that as we develop expertise and capacity that we will be able to move forward in recruiting more commercial studies with the aim of using some of this funding to expand the Children's Interest Group capacity in terms of nursing cover. At present the Children's Interest Group is moderately hampered by the absence of complete cover across all district general sites in Northern Ireland which sometimes creates difficulties when recruiting infants who are born in Belfast for the part of their care who need to move on to district hospitals for subsequent management.

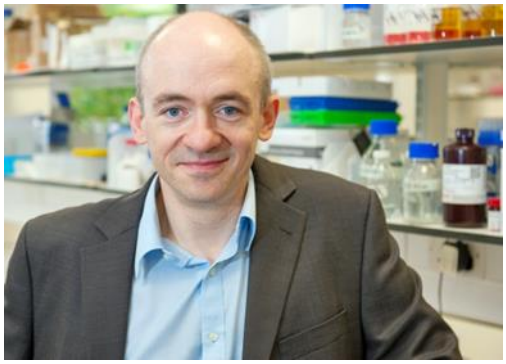
Education and Training

The 2 new Clinical Leads are endeavouring to rapidly bring themselves up to speed with the workings of the NICRN and Gateway. Staff are supported with relevant training were needed as trials are brought on board. For example, two of the paediatric clinical research nurses are due to attend a course in Madrid in early September 2016 before recruitment begins for one of the new commercially sponsored IMP trials of a new monoclonal antibody against RSV. The new clinical leads will endeavour to attend the UK Network Meetings as much as possible and having a joint Clinical Lead will hopefully increase the likelihood that one or other will be available to attend.

Key Achievements

1. PREDNOS 2 - Recruited 133% of projected in the Belfast Trust.
2. The Synthetic Surfactant Study which was a first in human Phase I Trial – 10 out of a total 40 patients being recruited across 12 international sites came from the Belfast Trust.
3. APTS – The cumulative recruitment for the Belfast Trust site although appearing low in relation to projected recruitment in fact is equal to much larger centres recruiting for the same study in Australia and lessons are being learned in terms of estimating projected targets for site.

Critical Care Interest Group



Clinical lead Professor Danny McAuley

Introduction

In keeping with the other groups, we aim to deliver high quality clinical research, with a focus on clinical trials. We have several additional key strategic aims within the group

1) Ensure equity of access for patients to clinical research
2) Develop protocols which are led by local researchers which attract NIHR and other funding and are not only delivered in NI but are led from NI and delivered across the UK and Ireland
3) Help build research capacity in critical care in NI
4) Build collaborative links and establish a network which supports critical care research across the Island of Ireland

Portfolio and recruitment

Table 5 details the current portfolio. The critical care group continues to support a large number of studies. A key study adopted this year is the NIHR HTA REST trial which is a large national multi-centre clinical trial of veno-venous

Active Studies	Active Sites	Commercial	Randomised	Multicentre
13	21	8%	62%	31%

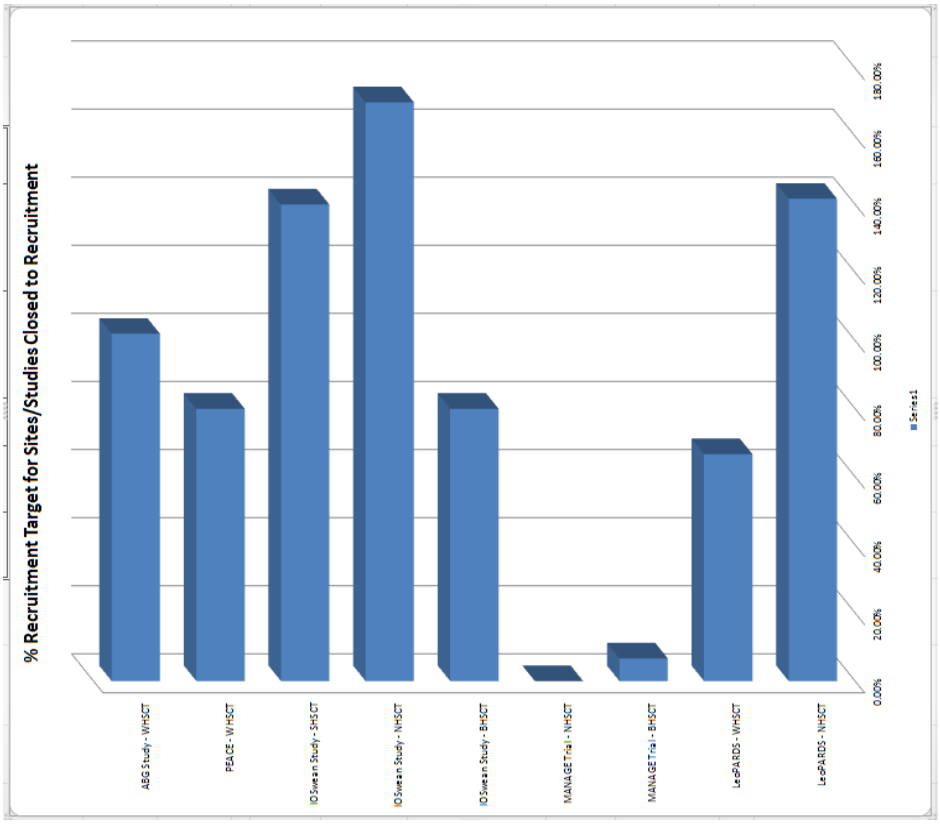
Table 5: NICRN Critical care group portfolio descriptive 15/16

extracorporeal carbon dioxide removal (vv-ECCO2R) in patients with acute hypoxaemic respiratory failure lead from Belfast by Prof McAuley and Dr McNamee.

There is a pipeline of major trials expected to be adopted in the next year which the NICRN (critical care) will support. Investigators from Belfast are either leading or are co-investigators on these trials.

The network continues to successfully deliver our portfolio on time and target as highlighted by the data included in figure 3. We have a balanced mix of clinical research. One of the challenges nationally in critical care has been the limited number of commercial studies available, however our commercial activity has been maintained in the past year. We have an active study with GSK in which Belfast is the 2nd highest recruiting site. McAuley as SG lead continues to work with major companies including GSK, Bayer, Boehringer as well as small biotech companies to increase the commercial portfolio. One major way in which this is being achieved is a planned application to the MRC stratified medicine call to develop a consortia involving academia and commercial partners to develop next therapies for ARDS and sepsis which is being lead from Belfast.

Figure 3 illustrating the critical care group's recruitment to target



There are a number of key achievements, which are worth highlighting

1) Studies, where possible, are offered to all NI research sites which ensures equity of access for patients to research studies. This has been transformational in the amount of critical care clinical research undertaken in NI. Specific examples of this continued research activity are the inclusion of the PI from Antrim as a named author on the NIHR EME funded LeoPARDS study published in the NEJM and which acknowledged the support of the NICRN, and the involvement of all sites in NI in the REVIVE study which was recently accepted for publication in Thorax.
2) The value of the network in delivering struggling studies is fundamental. REVIVE was an investigator led phase 2 clinical trial investigating rehabilitation following critical

illness which was struggling with recruitment but was prioritised by network and has now successfully reached its recruitment target. This work has been recently accepted for publication in Thorax..

3) Sites in the network consistently recruit above average. For example the NHSCT and BHSCT were the 2nd and 3rd highest recruiting sites in LeoPARDS (a study of levosimendan in critically ill patients with sepsis) in the UK together recruiting approximately 15% patients of the patients recruited in the UK.
4) The NIHR HTA £2.1M funded REST study to determine whether veno-venous Extracorporeal Carbon Dioxide Removal and ultra-protective mechanical ventilation in patients with acute hypoxaemic respiratory failure decreases mortality will be undertaken in 40 sites in the UK, and is being led from NI as a collaboration with BHSCT and QUB (co-leads McNamee and McAuley). The pilot trial has successfully reached its recruitment target with Belfast being the highest recruiting site and the support of the NICRN has been key to achieving this milestone.
5) As well as the NIHR HTA funded REST study, investigators in NI are either leading or are co-applicants on a large proportion of the national studies on the portfolio funded by the NIHR or TSB (e.g. the on-going sepsis diagnostic study (TEST-IT) and the recently completed LeoPARDS, BREATHE, VAPRapid studies.
6) Investigators in NI are continuing to lead or be co-applicants for a series of national portfolio studies which have recently been funded eg NIHR HTA commissioned call for Biomarker-guided duration of antibiotic treatment in hospitalised patients with sepsis (co-applicants McMullan and McAuley); NIHR HTA commissioned call for Antifungal Stewardship opportunities from rapid testing in ICU - The A-Stop Study (lead McMullan; co-applicant McAuley); NIHR EME application for a STudy into the REversal of Septic Shock with Beta Blockade - STRESS-BB (co-applicant McAuley) and the Wellcome Trust HICF application for Repair of Acute Respiratory Distress Syndrome by Mesenchymal Stromal Cells – REALIST (lead O'Kane co-applicant McAuley).
7) Highlighting our commitment to build research infrastructure which supports critical care research across the Island of Ireland, the HRB recently funded the Irish Critical Care Clinical Trial Network (on which McAuley was a co-applicant).

Interaction with other Research Infrastructure

McAuley is leads the respiratory and critical care theme within the NI Clinical Trials Unit and through this role encourages investigators developing proposals which are being developed for funding to utilise this infrastructure.

Specific recent examples of this related to critical care are the NIHR HTA funded REST study and the TSB funded sepsis diagnostic study which are managed by the NI CTU

McAuley is a member of Northern Ireland Clinical Research Facility Management Group. While the majority of clinical trials in critical care are conducted while patients are in-patients, for those studies where the CRF would be required e.g. experimental medicine studies in healthy volunteers relevant to critical care e.g. SELECT a study looking at e-cigarette usage and the effect on pulmonary inflammation, McAuley is able to advise on the process to access the CRF.

Patient and Public Involvement

This is critically important to our network. Although we do not have PPI representation on the CMG, the clinical trials which are supported by the network have active PPI involvement. For example in REST, the PPI representative Mr Barry Williams will sit on the Trial Steering Committee for the study. In addition, we have recently recruited a new

member on the group, (who is currently undertaking an HSC R&D funded PhD looking at delirium in ICU) who has established a NI branch of ICUsteps, a support group for people who have been affected by critical illness group https://icusteps.org/support/belfast to improve our PPI links further.

Capacity building

Demonstrating the success of the critical care network in building research capacity in NI, the network continues to support HSC R&D funded PhD fellowships where the project involves a clinical trial. Currently there are 3 PhD projects funded by the HSC R&D office which are under consideration for adoption by the network.

Infrastructure

McAuley led a successful bid to the MRC with co-funding from the DHSSPSNI (total funding £2M) to establish a GMP cell therapy facility to support clinical trials for cell based therapies. This facility is a collaborative project between the BHSCT and QUB and the building work will be complete in November 2016, with an aim to open the facility in March 2017. This will facilitate a planned Wellcome Trust application to undertake a phase 1/2 clinical trial in ARDS which will be led from NI and delivered through the critical care network in NI and UK. This facility will also support cell therapy trials in other areas which are planned and are likely to be delivered by other topic groups in the NICRN.

Interaction with NIHR

Members of the NICRN actively engage with the NIHR HTA programme with a view to informing projects which are commissioned by the HTA. McAuley and McMullan sitting on HTA funding panels.

Collaboration across networks

The REVIVE trial was an example of successful collaboration with the respiratory health network which together successfully delivered this trial and which was recently accepted for publication in Thorax.

Dementia Interest Group


Co clinical leads Professor Peter Passmore and Dr Stephen Todd

Introduction

The Dementia interest group have had four studies in the portfolio: one commercial, multi-centre, randomised clinical trial of a novel investigational medicinal product was newly adopted in 2013/14, and an extension study for this agent has continued. There is a locally designed and led observational study following up a cohort of men from the greater Belfast area who originally participated in a cardiovascular study around two decades previously. Collaborative working with the Primary Care interest group led to the adoption of a local, investigator initiated, observational study of interventions to improve medicines management for people with dementia. A randomised clinical trial of a drug approved for the treatment of diabetes mellitus has been adopted by the group and is currently in site setup phase, with plans for additional sites outside the Belfast Health and Social Care Trust for the first time.

There have been a number of approaches in relation to commercial clinical trials that plan to recruit. Due to issues with availability of PET scanning for research, two studies cannot be performed here. There are on-going discussions about one further commercial trial which does seem feasible. There are a few other funded studies which we propose to adopt. These relate to research programmes with local investigators from the fields of computing and engineering with novel, translational studies and also with respect to research in retinal measures in dementia.

The AFFECT study was a trial of amlodipine in subcortical ischaemic vascular dementia which was unfortunately stopped due to major difficulties with recruitment.

The Dementia group maintains a database of interested potential participants and caregivers which is continually updated by referrals from clinicians throughout the province. RCTs in dementia are notoriously challenging studies to undertake with a usual requirement for at least 3 study personnel to conduct independent aspects of study visits. There is also a background of great difficulty in recruitment to trials in dementia within the UK where most studies do not reach their planned recruitment targets. The Alzheimer's Society and AR-UK are well aware of this problem and are striving through various initiatives to improve this situation.

NICRN nurses made a significant contribution to the launch of Join Dementia Research (JDR) in N Ireland. They have also been very active in publicising NICRN (dementia) related activities throughout Trusts in N Ireland.

Patient and Public Involvement

Two caregivers for people with dementia sit on the group's clinical management group. One of these is an active member of Alzheimer's Society lay research panel and is a valued guide to the group in indicating the directions and priorities for research of people with dementia and their caregivers.

Diabetes Interest Group

Co clinical leads Professor Vivien Coates and Dr Hamish Courtney

Portfolio

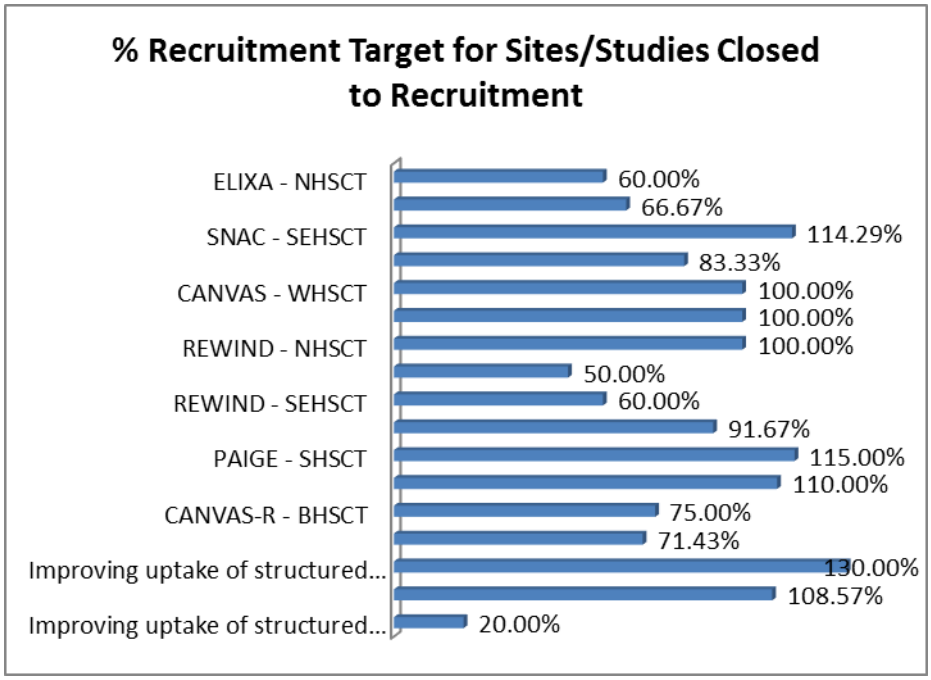
In 2015/16, the group was involved in 15 active studies running across five HSC Trusts in N. Ireland. From 1st April 2015, 6 new studies have been adopted. The active studies comprise 6 investigations that are currently open and recruiting, 6 that have completed recruitment and are in follow-up, 2 have closed, 1 study (Startright) is in set up. (Table 5).

Table 5 summarises NICRN Diabetes portfolio active over 15/16

Active Studies	Active Sites	Commercial	Randomised	Multicentre
15	All 5 Trusts	13 / 15 studies	100%	14/15

Of those 8 studies which have completed their recruitment phases, 4 studies recruited 100% or more of the recruitment target (CANVAS, DAPA in type 1, SENIOR, DUNE), 1 study (REWIND) recruited 100% in NHSCT but <100% in other sites), 1 study (VITAMIN D) achieved recruitment of 86% and 1 study (CANVAS-R) recruited 75% of target. In additional the INTENSE, did not recruit to target but was closed by the company (Sanofi) following recruitment of 0 (Belfast), 55% (NHSCT) and 35% (SHSCT) (Figure 4).

Figure 4: Illustrating the NICRN Diabetes portfolio and its recruitment to target



Of the 15 active studies, 13 had commercial involvement and the two remaining were funded through the charity Diabetes UK.

The breakdown of the design of the studies is as follows: 6 CTIMP, 2 CT, 4 were studies using questionnaire/interview or mixed method design, 1 study was a basic science study involving procedures with human participants and 1 study was limited to tissue samples (see Table 7).

Table 7 illustrates the NICRN Diabetes group portfolio breakdown

Clinical Trial of a Invest Medicinal Prod.	CTIMP	**43%**	**6**
Clinical Trial (other) or Clinical Investigation	CT Other	**14%**	**2**
Study using questionnaire/interview/mixed methods inc. quantitative	Quantitative Mixed Methods	**29%**	**4**
Basic science study involving procedures with human participants	Basic science study	**7%**	**1**
Study limited to Tissue, Biological samples and/or data	Tissue, Biological samples / data	**7%**	**1**

Staffing

Table 8 showing NICRN staff allocation; funded versus in post over reporting period

HSC	POSITION/BAND	R&D FUNDED	ACTUAL WTE
BHSCT	BAND 6 NURSE		0.8
BHSCT	BAND 6 NURSE		0.5
BHSCT	BAND 6 NURSE		0.5
SEHSCT	BAND 6 NURSE		0.5
SHSCT	BAND 6 NURSE		0.5
NHSCT	BAND 6 NURSE		0.5
WHSCT	BAND 6 NURSE		1.0
B6 =		B6 =	

The Diabetes Interest Group is co-led by Professor Vivien Coates and Dr Hamish Courtney, and currently has 4.1 WTE staff funded with 3.55 active/available throughout reporting period. This is spread across 5 HSC trusts (1.8 WTE in BHSCT, 1.0 in WHSCT, 0.5 WTE in NHSCT, 0.5 WTE in SEHSCT and 0.5 WTE in SHSCT) (TABLE 8). These posts are all Band 6 Research Nurses and all funded by NICRN.

The CRN committee includes diabetologists from each Trust, plus representation from dietetics, nursing, patient involvement and the charity Diabetes UK. Two new members joined the group in the past year (Prof T Lyons, Dr C Watson). The CRN Committee meets three times a year, where possible we meet in a central location such as Antrim. Currently we have 'face to face' meetings rather than tele-conference meetings due to lack of high quality communication facilities.

Most of the new studies during the past year have been commercially funded, partly due to the work of Dr Courtney in establishing links with the companies and lobbying them to include N Ireland in their trials. There have been no new multi-site investigator led studies adopted in the last year reflecting difficulties with securing funding for large clinical trials. Efforts continue to forge links between researchers in the Universities and the Trusts. Prof Coates, has represented N. Ireland as co-chair of the NICRN over the past year at a nationwide initiative led by Diabetes UK for the establishment of Diabetes Clinical Studies Groups representing 7 priority areas for research in diabetes. The chairs of these groups have now been appointed and applications for group membership will soon be circulated.

Interaction with other research infrastructures

There have still not been any UK Network meetings relating to diabetes as far as we are aware. The co-chairs would be keen to attend such an event should the opportunity arise.

PPI

Mr Martin Adams represents the views of people with diabetes at our meetings. He is a founding member of the Diabetes UK lay research group and communicates the views of this wider group at our meetings. Diabetes UK works closely with Dr Gail Johnston in order to offer training of lay members regarding their input to the research agenda. A second group is being established in the north west of the province also with the support of Diabetes UK.

Other initiatives

Fiona Chambers, Clinical Research Manager, from Novo Nordisk gave a presentation to group (November 2015) including information about potential studies that could come to NI and also potential routes of engagement. Some background on how Novo works and its objectives was also included.

World Congress on Clinical trials in Diabetes: November 2017. Abstract entitled; 'Building A Clinical Research Network to Support Clinical Trials in Diabetes in Northern Ireland'. (Authors: Coates V, Courtney H & Biagioni P) accepted for a poster presentation. V Coates to represent NICRN at this event.

The Company Celerion invited Dr Courtney & Prof Coates as Co-chairs of the NICRN Diabetes Group to visit their facilities with a view to seeking opportunities to collaborate in the future diabetes related research. Their main areas of work relate to Phase 1 and 2 trials.

Primary Care Interest Group

Co-clinical leads Professors Margaret Cupples and Carmel Hughes

Introduction

NICRN (Primary Care) continues to aim to support high quality clinical trials across all Health and Social Care Trusts in NI. We have developed productive working relationships with key individuals and groups to ensure that recruitment and retention of patients into trials are facilitated. A key aspect of our work is to support patients' involvement in research, and in planning and delivering trials, as well as in disseminating findings, so that research activity has real relevance and makes an impact on practice, improving the quality of care.

The clinical leadership is shared between Prof Margaret Cupples and Prof Carmel Hughes, each working one session per week. They work closely with the Primary Care Clinical Trials

Manager, one clinical research nurse [one research nurse (0.5FTE) resigned during the reporting period], and a Clinical Management Group (CMG), comprising a range of individuals from different disciplines (general medical practice, nursing, pharmacy, physiotherapy, epidemiology, sociology, dentistry), different geographical areas across NI and different academic institutions (QUB and UU). The CMG's purpose is to advise regarding the adoption of studies into the group's portfolio and on its future direction; it meets three times per year and has the facility for interim communications, to avoid undue delay in decisions. It has facilitated high quality research in primary care and allowed more patients the opportunity to participate in trials and studies that are likely to lead to improved clinical care. The approach to adoption of studies aims to ensure that practitioners are well supported by the research nurses and that proper regulatory processes are in place.

The increasing devolvement of clinical care from hospital into the community has increased reliance on general practice support in identifying and monitoring patients, both in relation to clinical care and research. Primary care has worked closely with other interest groups, specifically to date, with the respiratory, diabetes, cardiovascular and cancer groups.

Portfolio

The number of active studies has remained relatively consistent in 2013/14 (n=15), 2014/15 (n=15) and 2015/16 (n=13). Nine studies in 2015/16 are active and four were newly adopted in the reporting period. In 2014/15, the distribution across CTIMP, 'CT Other' and 'Other' categories remained consistent. In 2015/16, CTIMAP accounted for 15% of adopted studies, CT other and observational each contributed 38% of studies to the portfolio, and the remained (Other) equated to 8%. The decrease in CTIMP studies can be attributed to the close-out of NIC-PIP. There is a preponderance of studies which focus on the management of long-term conditions, across a range of disease areas

Recruitment has been excellent, with the vast majority of studies on target, at target or exceeding target numbers (e.g. GARFIELD, Alcohol in over-50s, Live:Life and WILDA). Indeed, in 2015/16, the total number of patients recruited was 2587, compared to 1735 in 2014/15 (see table 9). As mentioned in previous reports, it is noteworthy the extent of screening which is required in order to identify potential participants for recruitment.

Table 9 : Overview of patient recruitment to studies 2015/16

HEAT	68
GARFIELD	34
ALCOHOL	2310
DEMENTIA	3
RIVER	1
LIVE LIFE	2
DIABETES	3
INTERVAL	156
WILDA	10
Total	**2587**

Two studies (DECIDE and REDUCE) were not adopted which applied for support, the primary reason being lack of feasibility in primary care.

Workforce

The workforce for the primary care group is based in the BHSCT, in Dunluce Health Centre, within the QUB Department of General Practice. This places their offices in close proximity to the clinical leads who are both from QUB. The staffing component is 1.0 WTE band 7 Clinical Trials Manager and 1.0 WTE band 6 CRN. The staff have been highly productive in terms of collecting high quality data and developing research in new sites and other disciplines within primary cares, including dentistry. As previously stated, a CRN (0.5FTE) resigned in 2015. She has been replaced, and the new appointee took up post in July 2016. Staffing will remain a critical issue for Primary Care in order to maintain and indeed, increase the current level of activity

During 2015-16, the NICRN Primary Care Group has engaged with 13 PIs, 52 general medical practices and three dental practices, with a total of 4065 patients who have participated in studies. Many of the PIs are known to the Network staff, and great emphasis is placed on ensuring that PIs, health care professionals and patients experience the highest quality of service from Network staff. This accounts for a number of PIs seeking study adoption on a continuing basis, and health care professionals who are ready to consider participation in further studies.

Education and Training

NICRN Primary Care Staff attended a range of training over the reporting period. The mandatory courses attended were:

- Health & Safety Awareness, May 2015
- Complaints Awareness, May 2015
- GCP Awareness, April 2016

Other courses attended were: Data Management in Clinical Research, May 2015, Practice Nurse Forum (Long Term Conditions), May 2015, PCF/KSF Reviewer Skills, July 2015, HRPTS-MSS Reporting, August 2015, Deputy Nominated Fire Warden, July 2015, Revalidation Workshop October, 2015, Site Initiation Visit River Study, October 2015, Clinpal Training, October 2015, Eating Disorder Obesity and Mental Health Awareness Day, February 2016, Adult Community Basic Life Support, March 2016 and Nursing In Practice Conference, March 2016

Interaction with other Research Infrastructure

Primary care has worked closely with other interest groups, specifically the respiratory, diabetes, cardiovascular and cancer groups. They have maintained communication with the National Institute for Research (NIHR) Clinical Research Network (CRN), and have been

liaising with the Royal College of General Practitioners in respect of the 'Research Ready' initiative (see below).

Patient and Public Involvement

To date, NICRN (Primary Care) has not recruited a PPI representative. This is primarily due to the diverse nature of primary care, and the difficulty in identifying who would best represent primary care patients' interests. As mentioned above, the portfolio of studies encompasses a range of long-term conditions, and one patient with a particular condition may not be able to represent the interests of those with other conditions. However, it is ensured that the studies supported include active patient participation within their planning and management.

Other Initiatives

All Network staff have continued to actively engage in supporting the Research Ready Accreditation Initiative, which has been pioneered by the Royal College of General Practitioners. This supports general practice in meeting the legal requirements of the UK for carrying out research. It is a self-assessment, aligned with the UK's Research Governance Framework and has been developed in conjunction with the NIHR CRN. Network staff have participated in the ongoing oversight of this process and in a number of workstreams which have developed specific aspects of Research Ready notably:

- Redevelopment of the basic Research Ready Accreditation process and site
- Development of e-learning module
- Development of complex Research Ready (RR+) to support industry standard research

Network staff organised the Northern Ireland Primary Care Research Forum, which is now badged as a NICRN event. This meeting is aimed at primary care health care professionals who are interested in research and increasingly acts as a showcase for our adopted studies. The most recent event was held on 7th October, 2015. It was attended by approximately 45 health and social care professionals and academics with interests in primary care research and from a range of locations across NI. Feedback indicated that the Forum overwhelmingly met the expectations of delegates, the quality of the presentations was excellent, and the organisation of the event was outstanding.

Primary Care Activity Report

For such a small unit the Primary Care Group is one of the networks which has been most successful in terms of recruitment to target. This is due in no small part to a robust focus on feasibility at the adoption stage, realistic target setting and a committed workforce who have developed excellent skill sets and knowledge of their particular environment and site capabilities.

The portfolio has maintained a healthy number of studies. Four new studies were adopted over the current year, easily meeting their objective. Accrual is also excellent, with 2587 patients recruited in 2015/16 compared to 1735 in 2014/15. Recruitment to target is exemplary (one of the highest in NICRN) with a mean across the year of 132%, which again easily meets their annual objective (Figure 5).

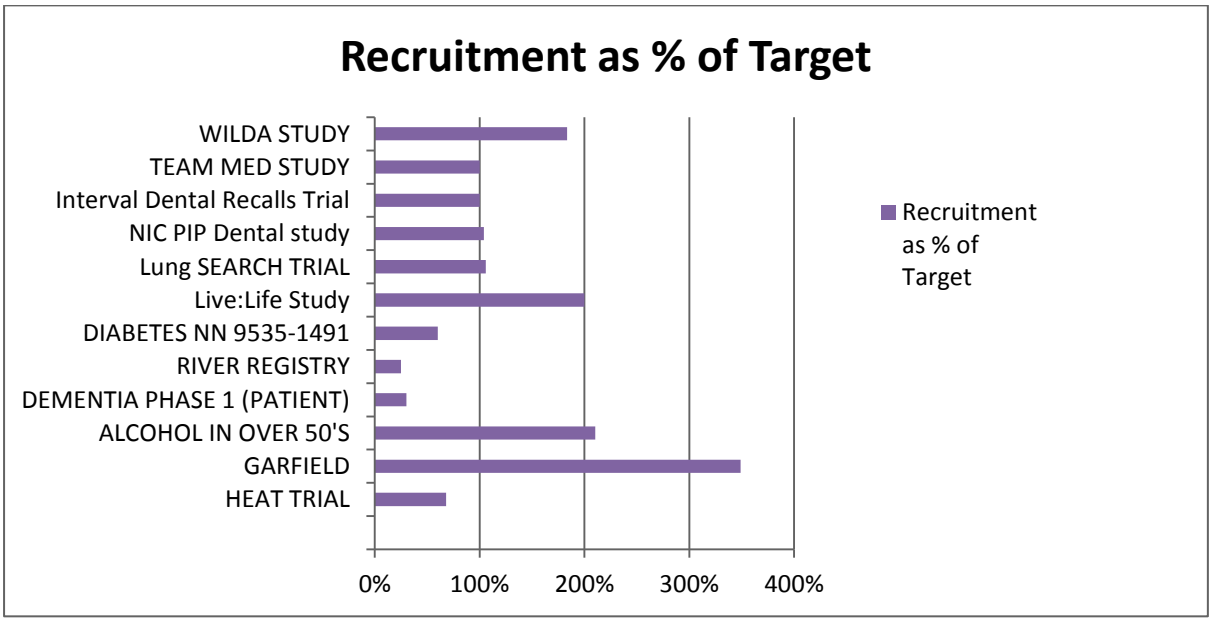


Figure 5 Recruitment as a percentage of target for studies adopted in 2015/16

Of the four newly adopted studies, one was commercial and one commercially funded; both were of good quality, consistent with the Network's remit and group objectives.

In terms of portfolio balance, during 2015/16, clinical trials accounted for 53% of the portfolio, of which 15% were categorised as CTIMP and 39% as other clinical trials; 38% were observational studies (Figure 6).

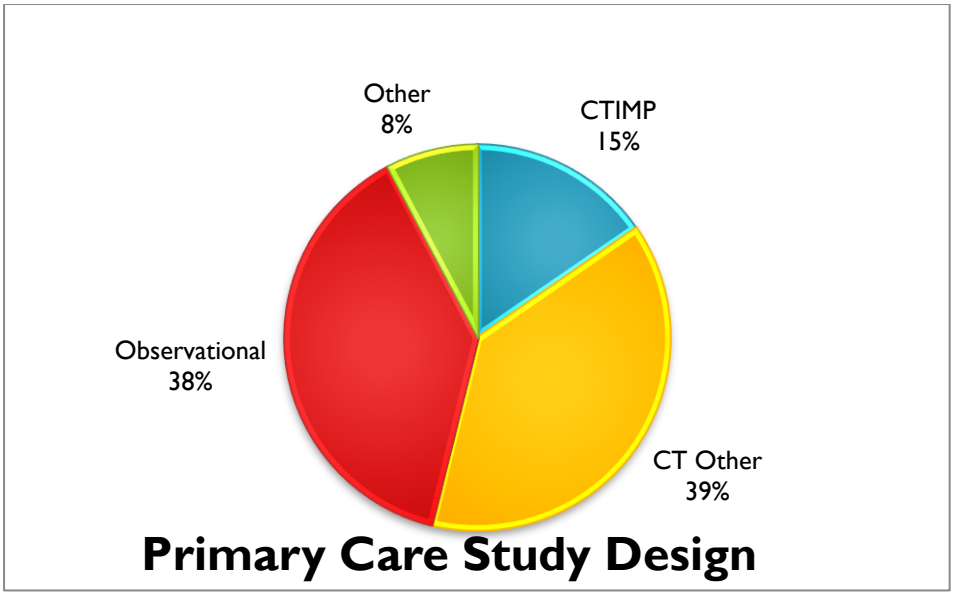


Figure 6 Categorisation of study based on design

Renal Interest Group

Co leads Professor Peter Maxwell and Dr Neal Morgan

Introduction

The NICRN Renal group continues to perform strongly. All NI HSC Trusts are involved in renal research with 23 active studies in 2015/16, 61% of which were multicentre, reflecting the excellent engagement from researchers across our network.

We have a broad research portfolio with a balance of commercial (22%) and non-commercial studies, the majority of which are on the UKCRN portfolio. Our network

continues to proactively seek research opportunities and develop its infrastructure aligned to the needs of our renal population. The BHSCT site maintains a high profile in national and international studies and continues to be offered multiple opportunities to participate in academic and pharma-sponsored clinical research. The success of NICRN Renal in delivering high quality research data and the strong collaborative links we have established should encourage commercial partners to realise the benefits of investing across our active sites.

Internationally regarded, the UK Renal Registry[1] (UKRR) is one of the few high quality clinical databases open to requests from researchers. Data is collected on a quarterly basis, automatically downloaded from renal unit databases this process will evolve significantly with the launch of the UK Renal Data Collaboration (UKRDC). Developed initially as a source of accurate clinical data for audit and quality benchmarking against care standards, the UKRR now increasingly supports the development and delivery of important research studies, evidenced by the number of registry supported studies on our portfolio (SPEAK, EQUAL, PIVOTAL, PD-CRAFT, PERIT- PD, ALPHA and UKPDOPPS).

All NI renal units are network linked by the eMED *Renal* clinical management system, this creates an integrated patient record capturing comprehensive clinical data on all patients with chronic kidney disease (CKD), acute kidney injury (AKI) and end stage renal disease (ESRD). Combining data from eMED *Renal* and the UKRR we can accurately characterise the disease burden in our local population and identify regional variances in outcome, thus direct quality improvement and research priorities. Moreover the reporting capabilities of eMED *Renal* enable PIs to generate study specific reports which rapidly and accurately inform local and regional feasibility assessments on newly proposed studies. These scoping exercises are invaluable in assessing our ability (as a network) to deliver on research objectives.

Allied to this local capability there have been a number of major national research and quality improvement developments over this reporting period. The first UK Renal Research Strategy[2] (UKRRS) was launched in April 2016. Produced by a multi-stakeholder steering group it highlighted four overarching strategic aims for renal research in the UK, namely, a) to engage professionals, patients and the public, b) to capitalise on the wide range of research approaches to ensure a well-balanced portfolio, c) to provide broad support to research training and career development building sustainable capability and d) to provide a culture that maximises cross-disciplinary and collaborative research. The UKRSS also identified evidence gaps collated from their initial consultation. These aims and associated recommendations provide added impetus and support to a number of our NICRN Renal objectives. The UK Renal Trials network (UKRTN) was also established in 2016. It is envisaged this group will aid the UK nephrology community by providing methodological expertise and guidance on trial design (including early stage consultation and formal endorsement to support funding), advice to trials in difficulty and provide educational resources and training days. The UKRTN will report every 6 months to the UK Kidney Research Consortium (UKKRC, meetings attended by Dr Neal Morgan). The Kidney Quality Improvement Partnership (KQuIP[3]) was also established in 2016. With broad stakeholder support this partnership of renal healthcare professionals, patient groups, and quality improvement professionals, aims to embed quality improvement into daily practice so better understand and reduce unwarranted variations in care.

Our portfolio in 2015/16 includes studies incorporating a range of designs and disease themes; basic science studies in haemodialysis vascular access and peritoneal dialysis, CTIMPs in polycystic kidney disease and diabetic nephropathy and qualitative mixed methodology studies surveying young adults with kidney failure, investigating the psychological traits of patients selecting a renal replacement therapy modality and palliative care in CKD.

Aligned to a clear vision of future capacity requirements we have continued to build our network infrastructure to support the development of local investigator-led studies tailored to the current and future needs of our renal population, a key overarching network priority. In addition to the robust epidemiological framework provided by long term NI research databases in kidney transplantation, chronic kidney disease and haemodialysis vascular access via representation on NI Haemodialysis Vascular Access group Dr Neal Morgan facilitated acquisition of *Transonic Flow-QC Hemodialysis Monitors® to objectively measure vascular access performance.* Also almost all networked sites now have body composition monitors (e.g. for use in studies investigating frailty and cachexia) and the SHSCT have a continuous glucose monitoring system for use in a haemodialysis study under development.

The 2002 NI Renal Service Review was driven largely by a need for additional haemodialysis capacity. In recent years, sustained expansion in our renal transplantation programme (following external review of surgical workforce needs in 2011), an ageing dialysis population and an increasing proportion of patients too frail for dialysis therapy has contributed to a shift both in capacity pressures and the skill mix required to optimise outcomes. To address the research questions posed by this contemporaneous population we recognise the need for increased qualitative research, closer alignment to quality improvement initiatives and engagement of the wider multidisciplinary team. In response to this challenge the network has already fostered qualitative research partnerships with nursing colleagues investigating palliative care needs in ESRD (PACKS study), advance care planning for older patients with ESRD (ACREDIT study) and the phenotype of renal cachexia in dialysis patients (funded by a PHA R&D Division enabling award).

Mitigating the patient-related and financial costs (£15M p.a. to HSCNI) of AKI, highlighted in the 2009 NCEPOD report *Adding Insult to Injury*[4], represents another major focus for our group. Prof Peter Maxwell and Dr Neal Morgan have helped develop the regional AKI quality improvement (chairing the regional AKI working group that delivered an AKI e-Alert to hospital laboratory systems/ECR hyperlinked to GAIN AKI guidance) and education infrastructure (co-developing the AKI FY2 education programme incorporated within NIMDTA generic skills training and co-authoring 2014 GAIN AKI guidance). We now seek to develop detailed reporting capability on regional AKI incidence and outcome, variances in which will inform and direct our AKI research streams. We remain closely linked to national AKI initiatives, Dr Morgan represented NI at the *Think Kidneys* AKI Stakeholder Consolidation Event and receives regular updates from the *Think Kidneys* AKI Programme Board and our group will be involved in the UK wide RISK study (risk prediction for AKI in acute medical admissions) developed by the UKKRC AKI Clinical Study Group (AKI-CSG). In October 2015 Dr Morgan organised a regional AKI seminar hosting Dr Nick Selby, co-chair of the AKI-CSG, attended by a number of PIs from our research group. We will look

to capitalise on these networked relations in development of patient-centred study exploring how best to educate patients about AKI risk.

To build a more sustainable and inclusive research infrastructure we plan to help establish a multidisciplinary NI Renal Quality Improvement Group. This group will benefit from links to the Renal KQuIP programme. It is envisaged the group will initially cultivate and draw upon existing expertise in qualitative research methodology and quality improvement within the Northern Ireland Nephrology Forum (NINF, all NI consultants and trainees) and allied nursing and dietetic groups. The group would work in parallel to the NICRN Renal engaging colleagues via NINF and the regional multidisciplinary renal audit programme. To facilitate and sustain this project we have outline-planned a regional renal web site for healthcare professionals and patients, integrating research, quality improvement and education. This strategic focus of actively coupling multidisciplinary research and quality improvement is echoed by the 2016 UKRRS report which called for *'a commitment to robust and appropriate patient-focused qualitative research, to allow improvements in quality of care, health, quality of life and patient empowerment'* and highlighted *'we should accept that the question how to deliver reliable implementation of 'best practice' is a legitimate research question'*.

Further targets for the group in 2016/17 are to build upon our capacity by recruiting a clinical MD/PhD fellow to join our CRN and increase renal clinical research links with Queens University Belfast. In recent years clinical trainees have secured personal fellowship funding from PHA R&D Division, Kidney Research UK and the NI Kidney Research Fund. Opportunities for clinical fellowship funding have been further expanded by the launch in 2016 of the Wellcome Trust Irish Clinical Academic Training (ICAT) programme www.ICATprogramme.org which promotes clinical research throughout Ireland. Prof Maxwell is Director of the Clinical Academic Training programme for Queen's University and postgraduate deanery (NIMDTA). Clinical fellows would also have the opportunity to work on discrete projects within the multiple programme grants awarded to the Nephrology Research Group within the Centre for Public Health, Queen's University (e.g. SFI-DfE partnership grant exploring chronic kidney disease biomarkers; NIH R01 grant for tripartite US-NI-RoI research on diabetic kidney disease).

Challenges

Our group proactively manages the challenges which serve to potentially constrain delivery of our portfolio and the strategic expansion of our network. Negotiating (in a timely fashion) the various research ethics committee and individual Trust research governance requirements continues to be an issue around which we work with colleagues to improve the efficiency of our interactions with Clinical Research Organisations and Principal Investigators (external to NI). Despite strong engagement from multiple MD/PhDs across the NI renal consultant body we appreciate that time restrictions and wider commitments serve to limit the depth of contribution toward research. **The 2016 UKRRS called for leverage upon employers to enhance protected time for research, arguably within the financial constraints of our local health service the positive benefits of such research endeavour will need to evidently precede a paradigm shift in consultant job planning, not vice versa.**

Research skills acquired over periods of years should not be wasted; our research network must successfully harness and build upon latent research capacity e.g. 76% of consultant nephrologists have a postgraduate research degree. Provided the infrastructure is soundly established it is anticipated that co-alignment of research to quality improvement will more aptly engage our renal workforce, with the envisaged benefits (cost saving, improved patient outcome, more rapid translation of research findings to practice) attracting a sustainable funding revenue to support and sustain this co-aligned model.

Staffing across the network is robust, after a short term gap in SEHSCT capacity Nurse Sharon Brown was seconded onto the network in Dec 2015 and is now in a substantive post.

As discussed, we continue to adopt numerous UKCRN non-commercial studies targeted to key research priorities for our local CKD and ESRD populations (EQUAL, UKPDOPPS, PIVOTAL, PD-CRAFT and ALPHA). Whereas in England and the other devolved nations recruitment of patients to non-commercial studies is financially recognised, that is not the case in Northern Ireland. Participation therefore directly draws upon our nurse capacity without reciprocal remuneration. We anticipate a continued expansion in the national non-commercial study portfolio; driven by the success of infrastructure projects (e.g. UKRR, UK Renal Data Collaboration, UKRTN and the National BioBank) in providing a research environment to support the aims of the UKRRS. Our current financial model is increasingly disadvantageous for our patients, network and national collaborators (Northern Ireland sites have contributed significantly to a number of national projects); evidenced this year by the inability of the BHSCT site to adopt the **UK CKD Cohort Study when** invited to be one of ten centres contributing to an important national cohort of 3000 patients.

Workforce

The Northern Ireland Renal network is co-led by Prof Peter Maxwell in BHSCT and Dr Neal Morgan in SHSCT. Strong regional engagement continues to drive the network with research leads and research nursing staff from each Trust attending our CMG meetings and proposing studies for adoption (trust leads - Dr Camille Harron and Dr Michael Quinn NHSCT; Dr Alastair Woodman SEHSCT and Dr Ying Quan WHSCT). A number of sites have multiple PIs in named studies and an update on the work of our network is provided 6 monthly to the Northern Ireland Nephrology Forum. Highlighting the depth of engagement across our specialty, of the 25 consultant nephrologists in post 10 are currently acting as local PIs/co-PIs for portfolio studies.

Table 10 NICRN core funded staffing allocation in 2015/16

Trust	WTE funded	WTE in post	Job Title	Banding	Comments
NHSCT	0.5	0.5	Nurse	6	
BHSCT	0.5	0.7	Nurse	6	Additional increase 8.5 hours from capacity for 1 year
BHSCT	0.5	0.7	Nurse	6	Additional increase 8.5 hours from capacity for 1 year
SHSCT	0.6	0.6	Nurse	6	
SEHSCT	0.5	0.5	Nurse	6	18.75 hours – start date TBC
WHSCT	0.5	0.5	Nurse	6	
Sub-Total	3.1	3.5	6		

Financial Statement

Historically the funding of research nursing staff in three sites across the region was initially dependent on commercial studies but this has now evolved to more secure posts enabled by NICRN Renal funding. The stability of this funding stream will continue to provide a solid foundation for investigator-led studies as well as for projects with clinical relevance outside of commercial domains e.g. qualitative research on conservative and end-of-life care for ESRD as exemplified by the NIHR-funded PACKS study.

Funding has also been made available by the Western Trust, available on a competitive basis for locally designed studies. Likewise in the Southern Trust investigator designed studies are supported by competitive awards from R&D. The Northern Trust has increased their research capacity to 1.0 WTE with 0.5 WTE provided by endowment and gift funding (research support consistently featuring as a key priority of such donors) on top of their base 0.5WTE NICRN funding.

BHSCT costs are covered by commercial income from pharma-sponsored studies and it is generating a surplus on activity.

Cognisant of capacity constraints NICRN renal appreciates the benefits to the network through reinvestment of monies generated by commercial activity; this remains a priority target for all sites.

Education and Training

Networked nursing staff have greatly benefited from NICRN courses on Recruitment and Retention in Clinical Trials, Informed Consent Ethical, Legal and Practical Aspects and an Introduction to Clinical Research.

To deliver high quality multi-disciplinary renal research additional expertise in qualitative methodology will be required. The British Renal Society and UKRTN may provide useful resources in this regard and we will look to draw upon the expertise available in other NICRN networks where suitable.

Interaction with other Research Infrastructure

Dr Neal Morgan regularly attends the UKCRN Renal Disorders Specialty meeting and the UKKRC renal clinical subgroups (CSG) meeting. Engagement with CSG leads in a variety of sub-specialty areas is of considerable benefit to the network. There are also close links to the members of the recently formed UK Renal Trials Network. Dr Morgan also represented NICRN renal at the *Think Kidneys* AKI Stakeholder Consolidation Event and at the inaugural Renal KQUiP meeting.

Prof Maxwell is now a member of the Renal Association (RA) Executive Committee which oversees national strategy for research supported by the RA.

The renal research activity in the Western Trust is based at the Clinical Translational Research and Innovation Centre (C-TRIC) campus, within the grounds of Altnagelvin Hospital.

Patient and Public Involvement

The Northern Ireland Kidney Patients Association, NIKPA (charity for patients with end-stage renal disease supported by dialysis and transplantation) and Northern Ireland Kidney Research Fund, NIKRF (local charity supporting kidney research) have both been active in shaping the research agenda e.g. they have influenced the design of the workshop and subsequent grant application to British Renal Society and then HSC R&D Division for the study of renal cachexia (Dr Joanne Reid QUB School of Nursing). A prospective collaborative patient-centred study in 2016/17 exploring how best to educate patients on AKI risk awareness will draw heavily on patient involvement at all stages of protocol development and grant application. As the network moves toward the development of larger scale investigator led studies and competitive grant application the strength of our PPI (study design, patient engagement and feedback etc.) will be of paramount importance to success.

We realise there are further opportunities to develop the culture of engagement within our renal community. It is envisaged the proposed regional renal web site will contribute significantly to this aim, i.e. by providing information on how to participate in research,

information on prospective and active studies and feedback and analysis of results from completed studies. The NIKPA and NIKRF will be widely consulted and instrumental to the successful design of this project. Nationally, information and opportunities to participate in renal research are presented and circulated in a number of formats (e.g. by the British Kidney Patients Association via its patient advisory group, website and social media, by the National Kidney Federation in its magazine *Kidney Life* and via the Kidney Research UK website) and we recognise that any engagement strategy must reach beyond a web based system to be both inclusive and effective.

Publications continue to be generated from many of the current or previously adopted studies including Quality of Life and Physical Function in Older Patients on Dialysis: A Comparison of Assisted Peritoneal Dialysis with Haemodialysis (Clin J Am Soc Nephrol. 2016 Mar 7;11(3):423-30); vascular access in haemodialysis (Clin Kidney J. 2016 Feb;9(1):142-7; J Vasc Surg. 2016 Feb;63(2):429-35) and renal transplant complications associated with genetic/epigenetic variation (BBA Clin. 2016 Jan 8;5:41-5; PLoS One. 2016 Jan 20;11(1):e0147323).

Other Initiatives

At this year's Renal Association the NIHR-CRN Renal disorders Specialty group and Kidney Research UK hosted a symposia '*Engaging with industry to promote and deliver renal research in the UK*'. Focusing on time to target, realistic recruitment projections and the use of social media were raised as important issues and are learning points that have been discussed within our research group.

Renal Activity Report

As illustrated in Table 11 and Table 12, over this reporting period we had 23 active studies (compared to 24 in 2014/15) across 57 active sites and 38 studies in our overall portfolio.

The group again exceeded targets on regional working (>50%) with 61% of the overall portfolio delivered at more than one NI site and we adopted 6 new studies in 2015/16.

With respect to study design we adopted one commercially sponsored study (Long term safety of Tolvaptan), to add to the SONAR and PIVOTAL studies adopted in 2014/15, three UK Renal Registry/UKCRN studies (SPEAK, UKPDOPPS and PERIT-PD) and two local investigator-led studies (the Arterial Stiffness Study and a study titled The role of patient reported psychological traits in renal replacement therapy and modality selection). This contrasts to no local investigator-led studies being adopted in 2014/15 and reflects delivery of a strategic goal of the network.

Table 11 Summary NICRN Renal group portfolio for 2015/16

Active Studies	Active Sites	Commercial	Randomised	Multicentre
23	57	22%	26%	61%

Table 12 NICRN Renal group portfolio breakdown

Clinical Trial of a Invest Medicinal Prod.	CTIMP	**26%**	**6**
Clinical Trial (other) or Clinical Investigation	CT Other / Clinical Investigations	**4%**	**1**
Study using questionnaire/interview/mixed methods inc. quantitative	Quantitative Mixed Methods	**30%**	**7**
Basic science study involving procedures with human participants	Basic science study	**17%**	**4**
Study limited to Tissue, Biological samples and/or data	Tissue/Bio Samples, Data	**22%**	**5**

Screening and recruitment figures for 2015/16 (696 and 337 respectively) compare favourably to 2014/15 (680 and 257, 2015/16 demonstrating a >30% rise in recruitment). The NICRN Renal portfolio has maintained a very solid record in terms of mean accrual to target at 74% (78% in 2014/15), Figure 7.

Notably a) delivery of the SONAR study has proved very challenging across all UK sites, with a consistently wide recruitment to accrual gap in participating centres and b) as the network looks to develop its portfolio of important qualitative research we are aware that studies with elderly, frail participants predicate considered and often modest recruitment projections.

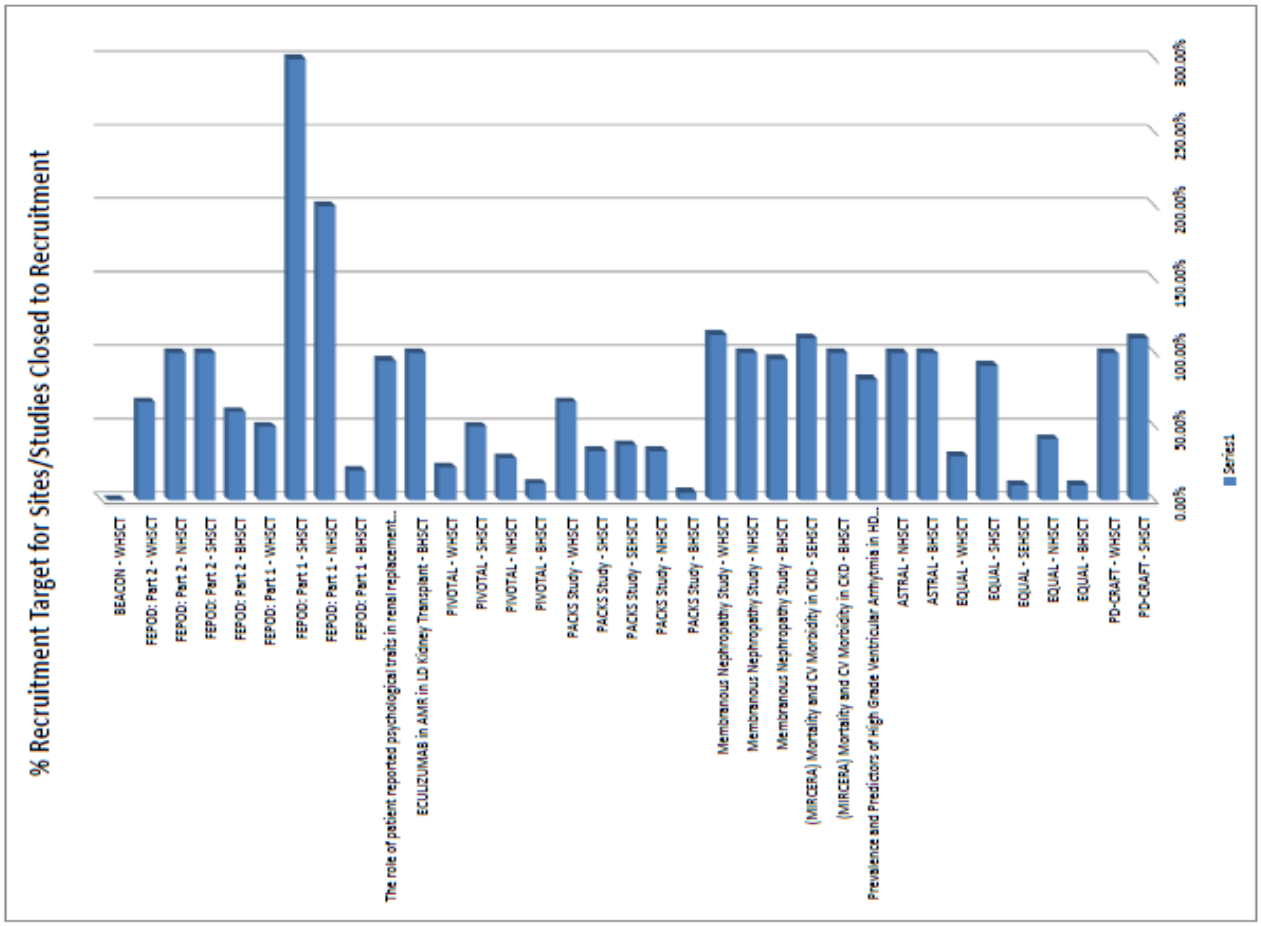


Figure 7 NICRN Renal groups recruitment to target figures

In terms of our balance across the portfolio the percentage of commercial studies fell to 22% during 2015/16 (Figure 8). The important PIVOTAL study (now successfully completed and in follow up) was a considerable drain on nursing resource in 2015/16 and as such led to competitively bias adoption of other commercial studies, this was discussed in detail at our CMG meetings and deemed an acceptable consequence. The trend is also explained by our participation in a number of high-quality UKCRN adopted non-commercial trails supported by the UKRR. These UK studies look to answer key research questions in a generalizable patient population, as such they are deemed highly relevant and prioritised by our network.

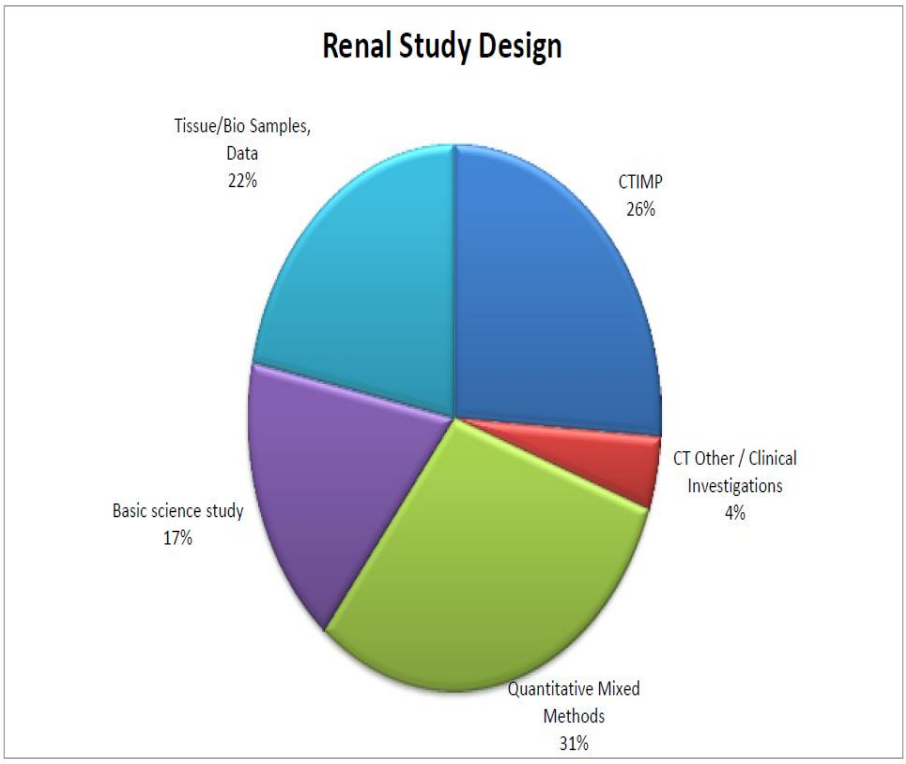


Figure 8 NICRN renal portfolio design breakdown

References

1. UK Renal Registry; www.renalreg.org
2. UK Renal Research Strategy, 2016; www.kidneyresearchuk.org/file/ukrrs.pdf
3. Kidney Quality Improvement Partnership, 2016; www.thinkkidneys.nhs.uk/kquip
4. Adding Insult to Injury, NCEPOD 2009; www.ncepod.org.uk/2009aki

Respiratory Health Interest Group

Respiratory Health co-leads; Professor Judy Bradley and Dr Lorcan McGarvey

Introduction

The NICRN-Respiratory Health Interest Group, established in 2008, has had another successful year in 2015/2016 and within this annual reporting period has presented the extent of success in terms of portfolio size, balance of industry and investigator-led studies, recruitment in studies to time and target and expanding portfolio into a new area. The careful management of our portfolio has enabled reinvestment both in coordinator staff, fellowship programmes and in support of investigator-led studies.

Portfolio of studies

In 2015/2016 NICRN-Respiratory Health were involved in 25 active studies, demonstrating a steady year on year increase (active studies in 2013/2014: n=19; 2014/2015: n=21). Of these active studies 15 were industry-led (15/25, 60%) (active industry-led studies in 2013/2014: n= 11; 2014/2015: n=14), while 10 were investigator-led (10/25, 40%) (active investigator-led studies in 2013/2014: n= 8; 2014/2015: n=7). 15 new studies were adopted in 2015/2016, demonstrating a significant increase on previous years (newly adopted studies in 2013/2014: n=6; 2014/2015: n=6). These statistics demonstrate the achievement of the NICRN-Respiratory Health's key objective to increase the number of investigator-led studies. We have achieved this alongside an increasing industry portfolio.

The NICRN-Respiratory Health has established strong relationships with industry. Eleven of the active industry-led trials in 2015/2016 were with companies we had previously collaborated with. However, we also continue to attract new companies: we collaborated

with five new companies in 2015/2016 reflecting an increasing international reputation with pharmaceutical companies at delivering clinical trials.

In total 173 participants took part in NICRN-Respiratory Health studies in 2015/2016. 101 participants were newly recruited to trials in this period. Of the studies closed to recruitment in 2015/2016 (n=12) n=6/12 recruited to 80% or more of their target. Of the majority of the studies that did not meet their target the pharmaceutical company closed recruitment before we met our target. To reduce this occurrence in the future is we now include an assessment of UK recruitment when deciding whether to adopt a trial. If recruitment is near the target, we get assurance from company that we will have allocated recruitment slots.

The NICRN-Respiratory Health continues to focus on adopting high quality trials, many of which are complex, often 'proof of concept' in design, and as a consequence labour intensive with high levels staff involvement (Figure 9). The majority of adopted studies are Phase II/Phase III (n=18/25, 72%), RCTs (n=17/25, 68%) and require the involvement of more than one other directorate (n=18/25, 72%), such as Pharmacy, NICRF, Radiology, Laboratories (within BHSCT and QUB). In 2015/2016 NICRN- Respiratory Health also adopted two trials involving paediatric patients (VX14-809-109; VX15-809-110). Collectively, these factors add a level of complexity and require additional resources from the set-up phase of the study through to the active phase, as well during close out.

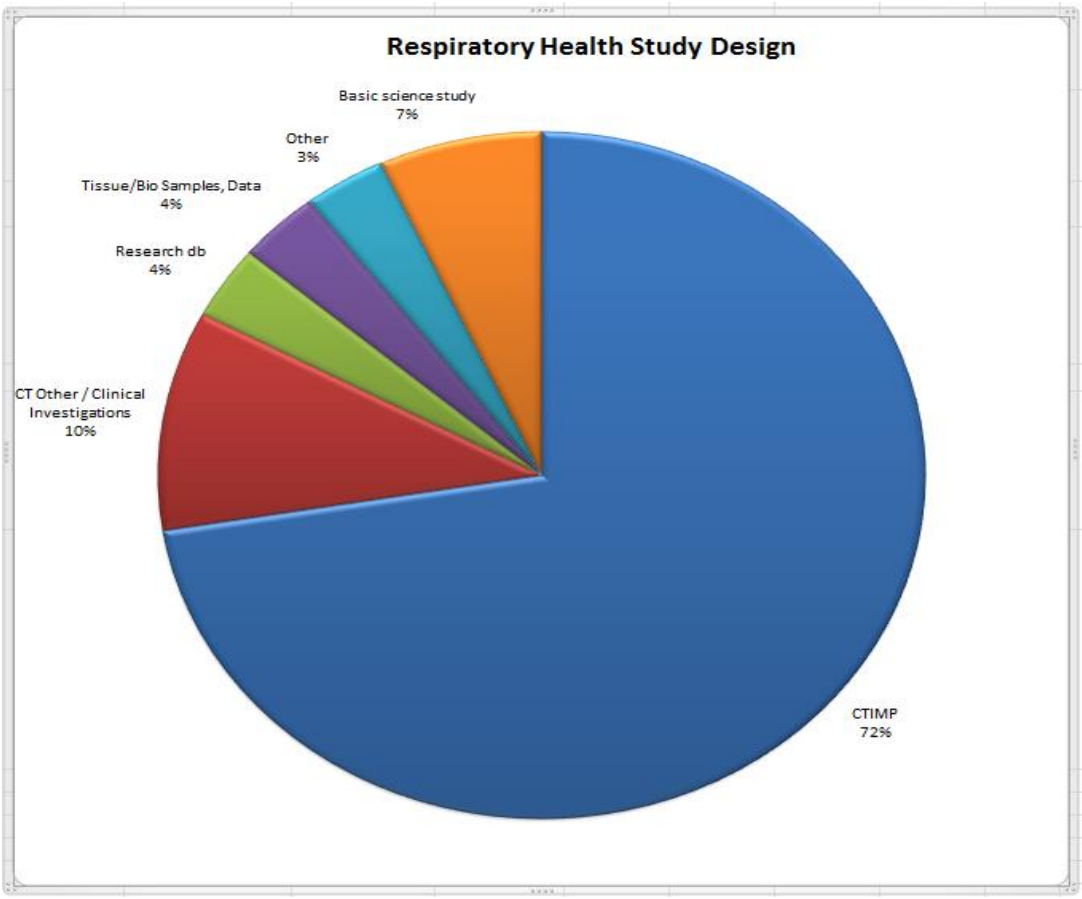


Figure 9: Respiratory Health groups portfolio design breakdown 2015/16

Table 13 summarises the intensity of adopted trials in 2015/2016 (definition of intensity according to the NICRN's Intensity Tool: Level 6: >10 hours per visit on average; Level 5: 5.6 to 10 hours; Level 4: 3.6 to 5.6 hours; Level 3: 1.6 to 3.6 hours; Level 2: 1 to 1.6 hours; Level 1: <1 hour). 18/25, 72% of adopted studies in 2015/2016 have an intensity rating of 4 or above These ratings reflect the patient's participation in the trials: the average duration of a patient's total participation was 35 hours (range: 4.5 to 72.5 hours), over an average period of 100 weeks (range: 8 to 260 weeks), involving an average of 10 visits (range: 3 to 25 visits). The majority of study visits include specialised procedures resulting in long visits: 11/25, 44% trials involved visits of over 7 hours. These complex and intense Phase II/Phase III trials limits the number of patients that can be recruited to each trial.

Study name	Intensity of study	Length of patient's participation	Number of visits/ patient	Average length of visits (range), hours	Total hrs/patient
VOCALS	6	100weeks	25	2(2-3)	51
Respire 1	6	60 weeks	15	2.8 (1.5 – 8)	42
OligoG	6	20 weeks	8	5.1 (2.5 – 7)	41
BAYER NPD	6	10 weeks	7 + 2 PC	8.05 (3 - 16.5)	72.5
Knowledge Exchange	6	n/a	n/a	n/a	n/a
VX15-809-110	5	100 weeks	16	6.4 (5 - 8)	70.5
VX12-809-105	5	100 weeks	12 + 1 PC	2.25 (2 – 5)	27
VX14-661-110	5	100 weeks	12	3.67 (3 – 7)	44
VX14-661-106	5	32 weeks	10	6.11 (3 – 10)	55
VX14-809-109	5	32 weeks	11	5.4 (1 – 8)	49
VX14-661-109	5	20 weeks	8	6.68 (5 - 10)	53.5
CORBUS	5	20 weeks	8	5 (2.5 – 9)	40
VX12-770-112	4	108 weeks	12	2.17 (2 – 4)	26
CELTAXSYS	4	55 weeks	12 + 3 PC	3 (2 – 8)	36
Laser	4	54 weeks	6	2.5 (2 – 3)	15
CLINIMETRICS	4	52 weeks	6	4.16 (3.94 - 5.24)	25
TWICS	4	52 weeks	3	1.5 (1.5)	4.5
AFFERENT AF219-0212	4	16 weeks	11	2.28 (2 - 3)	20.5
EME-TIPAC	3	182 weeks	12	2.88 (0.7 – 5.08)	34.55
TORPEDO-CF	3	104 weeks	9	1.9 (1.5 - 2.25)	17
SoMOSA	3	56 weeks	16	2.3 (1 - 3.5)	36.5
Novartis	3	10 weeks	9	4.8 (2-9)	44
Pacify	3	8 weeks	3	2.23 (1.4 - 3.9)	6.7
EMBARC	2	260 weeks	6	1.5 (0.96-2.28)	7.88
LIVELY	2	12 weeks	12	1.51 (1.58 – 2.10)	18.12

Table 13 A summary intensity of NIRCN-Respiratory Health studies
Definition of intensity according to the NICRN's Intensity Tool: Level 6: >10 hours per visit on average; Level 5: 5.6 to 10 hours; Level 4: 3.6 to 5.6 hours; Level 3: 1.6 to 3.6 hours; Level 2: 1 to 1.6 hours; Level 1: <1 hour
*PC = Phone Calls

NICRN-Respiratory Health's studies involve a range of respiratory disease populations: Cystic Fibrosis, Bronchiectasis, COPD, Chronic Cough and Asthma. One of the group's key objectives for 2015/2016 was to extend the portfolio to include other respiratory conditions. In 2015/2016 the Altnagelvin site adopted the group's first trial in Idiopathic Pulmonary Fibrosis.

NICRN- Respiratory Health offers a regional research infrastructure. Belfast City Hospital is the regional centre for Cystic Fibrosis, Chronic Cough and Difficult Asthma therefore is the only centre that studies involving these patients can be conducted in. However, patients

participating in trials for each of these disease areas reside in each of the HSC Trusts therefore ensuring region-wide access to trials and justifying the need to base the majority of staff in the Belfast site. In Altnagelvin there is a dedicated 0.5WTE coordinator and this has enabled the Western HSC Trust to facilitate clinical trials. In this reporting period they were the lead site for three NICRN studies. NICRN-Respiratory Health seek, where possible, to offer studies proposed to the network to satellite sites with interested PIs. Satellite sites that identify and wish to participate in trials are offered the assistance of a coordinator on an as-required basis, with an honorary contract in place. This approach has resulted in the successful completion of three investigator-led trials over the past two years in the other three HSC Trusts. Three studies have also been offered to Craigavon in this reporting year, with one study carried out with local resources and staff. At least one further study is being considered for adoption for the subsequent reporting year.

All of the studies NICRN-Respiratory Health proposed for adoption were subsequently adopted by the NICRN. However, we were also approached by companies for another three studies and on completing the feasibility assessment the PI assessed the studies as not appropriate for submitting for adoption, for example due to current competing studies.

In addition to the core portfolio some investigators have requested staff support from the NICRN-Respiratory Health to cover periods of high workload intensity or annual leave for their investigator-led industry-supported studies. The group are currently providing this support to the RASP study (PI: Prof Heaney).

Workforce and Capacity Building

NICRN-Respiratory Health has been co-led by Professor Judy Bradley (QUB) and Dr Lorcan McGarvey since its inception in 2008. The group benefit from a group of experienced PIs with national and international profiles (Dr Lorcan McGarvey, Prof Liam Heaney, Prof Stuart Elborn, Dr Damian Downey, Dr Martin Kelly, Dr Rory Convery, Prof Judy Bradley, Dr Brenda O'Neill) and have welcomed the addition of two new PIs in 2015/2016: Dr Alastair Reid and Dr Terence McManus, Dr Nick Magee and Dr Stephen Rowan. The group is also supported by a dedicated team of multidisciplinary team members and sub-investigators.

The group also benefits from the addition of new CMG members in 2015/2016: Dr Charlotte Addy, Kathy Hetherington, Dr Claire Butler and Dr Nick Magee.

The NICRN-Respiratory Health are currently funded for six core posts, of which five posts are Band 6 research coordinators and one post is a Band 4 administrator. In addition, for at least part of this reporting period the NICRN-Respiratory Health had additional posts (2.5WTE) funded through their capacity. As core posts became vacant staff employed under capacity were moved to core funding. As demonstrated in Table 14 the group were also carrying a maternity leave for six months of the reporting period.

Core Funded Posts		
Research Coordinator (Band 6)	5WTE	0.5WTE on maternity leave for 6months Post vacant in Sep2016. Capacity funded post transferred in Mar 2016
Administrator (Band 4)	1.0WTE	
Clinical Lead (J Bradley)	0.1WTE	
Clinical Lead (L McGarvey)	0.1WTE	
Capacity Funded Posts		
Research Coordinator (Band 6)	2.5WTE	1.0WTE vacated in Feb2016 1.0WTE vacated in Mar2016 when post transferred to core funding

Table 14: NICRN-Respiratory Health posts

Key achievements in 2015/2016

In 2015/2016 we have been successful in the following:

Making a difference to patient care

Bringing new treatments to patients

- A number of the clinical trials that were completed in 2015/2016 resulted in trial participants entering Managed Access Programmes, namely Ivacaftor for R117H and Orkambi for F508 Cystic Fibrosis patients.

- NICRN-Respiratory Health are currently assisting the Cystic Fibrosis team evaluate/audit the introduction of a newly licensed mucolytic, Mannitol, to their patient group by carrying out specialised assessments, namely Lung Clearance Index. The Phase III trial of Mannitol was previously conducted by NICRN-Respiratory Health. The funding for this evaluation/audit was secured by Dr Jackie Rendall and Prof Judy Bradley (co-lead) in collaboration with members of the CF team.

Preliminary findings of this evaluation/audit were presented at the 2016 European Cystic Fibrosis Conference by one of our coordinators (D Cosgrove).

Translating research into clinical practice

- Findings from recent investigator-led trials coordinated by the group (PhAB and LIVELY) formed the basis of a successful PHA RDO Knowledge-Exchange grant application to develop a physical activity intervention and comprehensive educational materials for patients with Bronchiectasis and the health professional who manage patients with Bronchiectasis (NICRN grant applicants: Prof J Bradley, co-lead; B O'Neill, PI; D Downey, PI). The NICRN-Respiratory Health have adopted this project and are developing these exciting interventions/materials to facilitate the translation of research findings into clinical practice.

Expanding access to clinical trials

- An objective of the group at the start of 2015/2016 was to extend NICRN-Respiratory Health activities to other sites. To date the majority of studies have focused on BELFAST City Hospital and Altnagelvin. An investigator-led study included recruiting from other sites within the Belfast and Western HSC Trusts, mainly the South West Acute Hospital, Enniskillen, Tyrone County Hospital, Omagh and Royal Victoria Hospital, Belfast. Another trial involved recruiting patients from Craigavon Area Hospital, Southern HSC Trust.

Increase in MRC funded programmes led by Belfast

- Clinimetrics is a multicentre MRC-funded study [CI: J Bradley]. Eight sites across the UK are participating in this study including Belfast. The study is coordinated by the NICRN-Respiratory Health – this involved submitting and obtaining ethical approval, setting up, running and monitoring the electronic Case Report Form, site initiation visits, providing training on Lung Clearance Index to each site and weekly telephone calls with sites re: recruitment and data collection. The group are also the UK over-reading site for Bronchiectasis Lung Clearance Index and so will also be over-reading and analysing the Lung Clearance Index tests performed at all sites. The group will also be responsible for data analysis, write up and dissemination.

Increasing relationships with industry

Enhancing reputation

- NICRN-Respiratory Health have built an excellent reputation as an experienced, high-quality group in terms of research design, recruiting to target and the quality of data collection and data management. Often the group are approached by industry early in the design of protocols for their comments on, for example, inclusion/exclusion criteria and outcome assessment tools. Also the feedback and comments from external companies /individuals is testament to quality of recruitment and data management:

  "I would like to thank all of you for your contribution on the study, in particular [coordinator] for her hard work, dedication and true professionalism."

  "As always, it was a pleasure to visit your site. Thank you & your Team so much for your demonstrable professionalism, availability, dedication to the study & excellent adherence & knowledge of the protocol, procedures & GCP…. The source files & data were excellent…. [coordinator] has been wonderful in filing & checking documents sent to her & I thank her especially for her eye to detail, quick action & pertinent questions."

TRP adopted by NICRN-Respiratory Health

- The NICRN-Respiratory Health adopted its first TRP in this reporting period, the Afferent AF219-012 study. Belfast was the first site to recruit to this study in the UK and recruited above target (recruitment target: n=6; actual recruitment: n=9) in a very short timeframe (R&D start cert received: 25Mar2016; first participant enrolled: 31Mar2016; last participant enrolled: 27Jun2016).

Increasing industry-supported investigator-led portfolio

- In 2015/2016 NICRN-Respiratory Health adopted a number of new industry-supported investigator-led studies to the portfolio (for example, Clinimetrics, RASP, Somosa) that are led by Belfast, demonstrating the increasing international profile of the NICRN-Respiratory Health group.

Chief Investigators of Industry-sponsored studies

- In the past year some of the NICRN-Respiratory Health PIs have been the UK CI for a number of trials: VOCALS (Prof Liam Heaney), VX14-661-109 (Prof Stuart

Elborn), VX14-661-106 and VX14-661-110 (Dr Damian Downey) and VX14-809-109 and VX15-809-110 (Dr Alastair Reid).

Recruitment on time and to target

In 2015/2016 we had a number of specific recruitment successes:

- Belfast was the first site in Europe to recruit to the Corbus study in Europe.
- Belfast was the first site to recruit to the Afferent AF219-012 study in the UK
- Altnagelvin are currently the third highest recruiting site in the UK (56 sites) to the EMBARC study
- Belfast was the joint second highest UK recruiting site to the VX14-661-106 study (12 UK sites)

Building research infrastructure

- Lung Clearance Index is increasingly recognised as a key primary outcome measure in Cystic Fibrosis and Bronchiectasis trials. Belfast (QUB and NICRN) are the lead European site for over-reading Lung Clearance Index tests performed within two research programmes in Bronchiectasis. Two NICRN coordinators have secured over-reading accreditation to date.

Challenges in 2015/2016

Staff changes

- We have had a number of staff changes in the past year and currently have only 0.5WTE coordinator employed under capacity funding which has reduced our overall workforce. It is a testament to our hardworking PIs and coordinators that despite this reduced workforce we recruited to target.

  Proposed actions: Workforce analysis is imperative to ascertain our staffing needs to deliver a challenging upcoming portfolio. A Band 6 waiting list will be created from the next advertised post so that we can respond to staff changes promptly.

Trial challenges

Additional unexpected activities

At the start of a trial it can be difficult to pre-empt all additional activities therefore they are included in the budget on a "per event" basis so that income can follow activity. For example:

- Protocol amendments: A significant number of our trials are long-term trials (> 1 year in duration), therefore increasing the potential for protocol amendments. Amendments impact on the intensity of a trial as they involve renegotiations of budgets/CTAs, revision of intensity tools, retraining of staff and reconsenting of patients.

  Actions taken: To account for the additional time required to action protocol amendments we have started to include them in our intensity tools. We also include additional fees, such as protocol amendment and reconsenting fees, into our budgets.
- SAEs: Our patient population, particularly patients with Cystic Fibrosis, Bronchiectasis, and COPD, are prone to pulmonary exacerbations, frequently requiring hospital admissions. As a direct result we manage a significant number of AEs and SAEs each year.

  Actions taken: This additional intensity is accounted for in both intensity tools and budgets.

Issues with study set-up / recruitment:

- Two studies adopted by the NICRN- Respiratory Health were not set-up (Clavier and Afferent AF219-010). Also, due to unforeseen delays in the set-up of an industry study we had a two-week recruitment window before the recruitment end date therefore we were unable to recruit to this study.

  Actions taken: Subsequent to this we now include a work-up fee in the budget of all new studies that can be invoiced for if a study does not get set-up. We also include an assessment of UK recruitment when deciding whether to adopt a trial. If recruitment is near the target, we get assurance from company that we will have allocated recruitment slots.

National and International Profile of group

In 2015/2016 our PIs were authors on 57 publications, of which 22 publications involved studies carried out within the NICRN-Respiratory Health. Three of these publications also involved coordinators as authors.

One of NICRN-Respiratory Health coordinators (A Clinton), presented a poster at the Irish Thoracic Society entitled "Experience of Establishing and Delivering a Clinical Research Network for Respiratory Health".

Two other coordinators (K McDowell and D Cosgrove) also contributed to international training day on clinical trials (European Cystic Fibrosis Society, Clinical Trial Network).

Financial Statement

NICRN-Respiratory Health have a successful past record of income management. This is as a direct result of appropriate assessment and budget negotiations for new studies and dedicated administrative support and coordinators compiling quarterly finance requisitions for each study.

The funding obtained from industry studies is imperative to ensure continued reinvestment into the group. Over the last year we have had significantly reinvestment in the following areas: additional co-ordinator staff, two fellowship programmes, staff training and development, and additional support for investigator-led studies.

Interactions with other research infrastructure

- Prof Judy Bradley is the director the Northern Ireland Clinical Research Facility (NICRF). NICRN-Respiratory Health continue to be key service-users of NICRF – all studies in the BHSCT, with the exception of one study, utilise the NICRF.
- Dr McGarvey is a member on UKCRN/NIHR Respiratory Specialty Group Committee (2008-present)
- Dr McGarvey is a Steering Committee member on NIHR Translational Research Partnership for Inflammatory Respiratory Disease (Partners: Nottingham, Leicester, Southampton, QUB, Imperial, Oxford, King's College London) (2011-present)
- Prof Judy Bradley sits on the advisory committee for the Northern Ireland Clinical Trial Unit (NICTU)

- One of the active industry-led studies involves collaborating with ResearchNurses.com in order to facilitate home-based participant visits, in order to minimise any burden on the participant.
- NICRN-Respiratory Health coordinators assisted with the recent launch event in the NICRF, which involved carrying out health assessments on attendees.
- NICRN-Respiratory Health facilitate student placements for school leavers and physiotherapy students.

Education and Training

To promote shared learning across our expanding team we introduced regular coordinator-led in-service training in 2015/2016. Training topics can be suggested by coordinators, co-leads or PIs. Topics can cover common/previous challenges in clinical trials, an overview of new processes being introduced or the sharing of information from courses/conferences. Topics covered to date include: 1) Preparing for a Site Initiation Visit; 2) Preparing for Site Monitoring Visits; 3) R&D and the NI Gateway. Shane Jackson, NICRN-CC also attended a meeting to give an overview of EDGE. All talks are saved to our Shared Drive and can be used as Induction tools for new staff.

Our multidisciplinary coordinators undergo training in procedures they would not usually receive in their undergraduate/professional training (for example, venepuncture and ECGs for non-nurses and spirometry for non-physiotherapists). They also regularly receive study-specific training. In addition to attending site initiation and investigator meetings they have also received training on sweat chloride testing, FeNO, Lung Clearance Index, Lung Clearance Index over-reading / analysis, cough challenges, cough monitoring, sputum induction and breathomics. Coordinators have also availed of other CPD opportunities in this recording period through non-mandatory courses and conferences, for example: European Cystic Fibrosis Conference, Nursing in Practice training day, Introduction to Excel training course, the N. Ireland ethics committee evening on "The Duty to Disclose: How much information is too much" and the Clindox training on developing an EDC.

Stroke Interest Group

Co-clinical leads Dr Michael Power and Mrs Carolee McLaughlin

Introduction

NICRN stroke continues to develop and diversify. 4 new studies were adopted during 2015/16; HeadPoST, FOCUS, Mirror Box and CGA. All 4 of these studies are randomised controlled trials and at least 2 (or 3 if mirror box is an RCT) are multi centre randomised control trials. 975 patients were screened for stroke studies during the year and 58 patients recruited to all studies across all sites which is an increase of about 30% from the previous year. Recruitment as a percentage of target was 72.71%. There were 14 active studies in 32 sites, 14% of these were commercial, 86% RCT's and 64% multi centre. We had planned to recruit more patients to rehab studies and the FOCUS trial, looking at the potential benefit of an SSRI drug in stroke recovery, allows us to do that.

Significant successes

1. As mentioned in last year's annual report the Belfast Trust was one of only 2 European centres taking part in a ground breaking hyper acute trial of clot retrieval and along with several other similar trials from around the world demonstrated the significant advantages of this type of early intervention for certain suitable patients in the very early stages after their stroke. These results have led to a rethink on how we investigate, manage and transfer suitable patients to the Belfast Trust for consideration of such early interventional treatment and many patients have benefited hugely from this intervention. Having taken part in the ESCAPE trial the Belfast Trust is seen as one of the best organised and most effective hyper acute intervention units in the UK.
2. One of the trials adopted in 2015/16 was HeadPoST. The Belfast Trust recruited very successfully to this study, continues to do so and was congratulated by the Chief Investigators office as being one of the most successful centres in the UK.

3. BIG CACTUS. A complicated trial of aphasia using IT support for patients/carers. This trial recruited very successfully and to target and was coordinated by one of the network co-chairs Carolee McLaughlin. Carolee continues to be significantly involved at national level in the design, funding and delivery of national studies. (Caroline please feel free to amend as you see fit).
4. Overall recruitment as improved significantly from last year and looks set to continue to increase.

Challenges

Significant challenges remain. It has been difficult to maintain appropriate staff on the ground in all sites and appropriate cross cover has been difficult to deliver. Recruiting patients to hyper acute stroke studies remains difficult in many Trusts due to delays in stroke unit access. The percentage of patients gaining access to stroke units as their ward of first admission remains low, less than 50% which limits the number of sites able to recruit to hyper acute stroke studies. Although there is no academic department for stroke in Northern Ireland the Stroke Association has funded a stroke lectureship. However it remains to be seen if this will attract suitable applicants.

Current portfolio

The Stroke network faced recruiting challenges in 14-15 and we are pleased to announce that while numbers arguably remain low it is an improvement from the previous year, 58 patients were recruited this year in comparison to 22 in the previous year. Importantly 72.71% recruited reached target recruitment on closed studies. 86% of active studies are RCTS; 14% of studies were commercial. We have had 14 active studies in this reporting period

Studies that were open last year and are currently open include;

1. ***GABS-*** a physiotherapy lead rehabilitation study is being conducted locally in SE Trust. It was adopted at the beginning of this reporting period. It has screened and recruited 9 out of a predicated 12.

2. ***BIG CACTUS***; this opened in Belfast and Northern Trust in early 2015. This is a speech and language therapy study. Big CACTUS is a pragmatic randomised controlled trial (RCT) to compare outcomes for people with persistent aphasia using computerised speech and language therapy at home with those having usual care (standard speech and language therapy provision or general daily communication

activity), or attention control (daily completion of puzzle book activities. The recruitment target was set at 15 per site but amended to 11 due to the overall success of the study in all sites nationally. Belfast and Northern Trust have been on target monthly and should reach 100% recruitment by end of the recruitment phase in June 2016.

3. ***RESTART*** REstart or STop Antithrombotics Randomised Trial (RESTART). This is an Investigator-led, multicentre, parallel group, prospective randomised open blinded end-point (PROBE) clinical trial of investigational medicinal products (CTIMP) comparing two treatments that are widely used in the UK. In this preliminary study of 720 people who survive a brain haemorrhage, we will study the potentially beneficial effects of three antiplatelet drugs (aspirin, clopidogrel, or dipyridamole) on the risks of heart attack, stroke and other clotting problems as well as their effect on the risk of a brain haemorrhage happening again. This information will help us to decide whether antiplatelet drugs are a promising treatment. If they are, we will recruit a much larger number of patients so that we can determine really reliably whether the beneficial effects of antiplatelet drugs on the risk of clotting outweigh any risks of a repeat brain haemorrhage for such people. This has been a difficult study nationally to recruit to. We recognise low numbers of recruited patients.

4. ***TICH 2*** Tranexamic acid for hyperacute primary IntraCerebral Haemorrhage is another hyperacute trial to assess in a pragmatic phase III prospective double blind randomised placebo-controlled trial whether tranexamic acid is safe and reduces death or dependency after primary intracerebral haemorrhage (PICH). The results will determine whether tranexamic acid should be used to treat PICH, which currently has no proven therapy. Again by the hyperacute nature numbers recruited are small.

In 15-16 we adopted 4 new studies. These are summarised below

1. ***Headpost*** , An investigator-initiated and conducted, international, multicentre, cluster, randomised cross-over controlled trial to establish the comparative effectiveness of different head positioning in patients with acute stroke The primary aim is to compare the effects of lying flat (0°) head position with sitting up (≥30°) head position applied in the first 24 hours of admission, for patients presenting with AIS, on the poor outcome of death or disability at 90 days. Secondary aim is to determine whether lying flat is superior to sitting up on poor outcome (death and neurological impairment) at 7 days in AIS; and whether sitting up is superior to lying flat on these outcomes in acute ICH. This is a multicentre, prospective, cluster randomised crossover, blinded outcome assessment study through a global network of investigator. This opened in Belfast Trust and recruited 16 patients within first month.

2. The second study is a RCT of Comprehensive Geriatric Assessment in a Hospital at Home setting. The study objective is to test the effectiveness and cost effectiveness of admission avoidance HAH with CGA compared with hospital admission with CGA – this is led by local Consultant in SHSCT with a proposal of extending to Belfast .

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3. ***Focus*** – The trial aims to robustly address whether routine administration of fluoxetine (20mg od) for 6 months after an acute stroke improve patients' functional outcome. This is open in most of the Trusts. Again recruitment is slow by the nature of the study and as a result of many patients being recruited into Headpost.

4.***Mirror box*** is another local rehabilitation study by occupational therapists in Northern Trust. This pilot study aims to explore the feasibility of conducting a fully powered randomized controlled trial of mirror box therapy for upper limb rehabilitation within a sub-acute stroke population. The objectives of the study are to: Evaluate the feasibility of patient recruitment and delivery of this as an OT treatment within an in-patient sub-acute single setting.

We are pleased to see a development of rehabilitation studies represented from OT, SLT and PT in addition to hyperactue trials. This is in true stroke multidisciplinary working which is at the core of Stroke management and clearly evident in our research portfolio.

Vision Interest Group

Miss Giuliana Silvestri & Associate Professor Jonathan Jackson Clinical Leads

Introduction

Once again the Vision NICRN group is pleased to report a very busy year. In this report we will outline the range of activity that the group has been involved in during the course of the 2015/16 year, and in addition share some of the year's highlights and challenges. The activity represents a healthy mix of commercial and non-commercial studies and illustrates how members of the group have responded to the opportunities available through regional and national collaboration. The portfolio overview (Table 15) highlights the position of the group in terms of study number and profile of studies.

Table 15 summarises the NICRN Vision group portfolio for 15/16

Active Studies	Active Sites	Commercial	Randomised	Multicentre
27	27	52%	44%	96%

Since its inception in 2008 the NICRN Vision group has grown consistently in terms of both the volume and quality of research adopted and managed by the group and also in terms of the number of PIs represented on its CMG(12). Much of the group's success has been achieved by building on foundational work initiated by Professor Chakravarthy. Miss Giuliana Silvestri who was a founding member is however largely responsible for shaping the groups current profile. This workload has of recent been shared with Associate Prof Jonathan Jackson who on returning from Australia in 2014 very quickly re-engaged with research colleagues in the Group.

The Staff Team working within NICRN Vision continues to grow and their skill set expands as studies in other ophthalmic sub-specialities are adopted with Glaucoma and Uveitis becoming well represented.

The core staff, more detail about whom will follow shortly, has remained very stable over the last 2 years. In terms of funding, all PIs continue to support NICRN Vision by donating 10% of their personal capacity fund to a central capacity fund established specifically to provide reinvestment in the Vision NICRN Network. In 2015/16 allowed the purchase of additional optometry and ophthalmology sessions in order to increase its capacity to carry out a diverse range of studies throughout the full working week.

NICRN Vision Staff

Table 16 illustrating the NICRN Vision group's staffing compliment (funded versus in post)

HSC	POSITION/BAND	R&D FUNDED
BHSCT	Research Nurse (Band 6)	2.4WTE
BHSCT	Research Optometrist (Band 7)	1.0WTE
BHSCT	Imaging Technician (Band 7)	1.0WTE
BHSCT	Admin (Band 4)	1.0WTE
BHSCT	Clinical Leads	1 PA each

In addition to the core publically funded staff shown in Table 16 above the group is also supported by Professor Chakravarthy' s release of her own funded staff (14 Medical sessions a month and 1 full time imager), to support activity as and when required. This adds significantly greater capacity to group and is very much appreciated.

The majority of staff employed within the NICRN Vision team have specialised in the field of ophthalmology, optometry and clinical vision science for a number of years and have, over time, developed a skills base beyond that normally practiced within the conventional clinical environment. Our staff are dedicated to provide the best possible specialised patient centred care and to working together as a team. All imaging technicians and optometrists are accredited by multiple research sites globally which allows ease of transition into new studies

The Groups nursing team (Miss Rebecca Denham, Mrs Georgina Sterrett, Mrs Angeline McBriar and Mrs Sharon Alexander) continue to do a fantastic job facilitating studies adopted by the Group. Rebecca is particularly adept at liaising with potential study sponsors and coordinators, as new studies are proposed and adopted by the group. Georgina, in preparation for a well earned retirement, reduced hours dropping to part time in the latter part of the year. Her role in imparting knowledge gained over time, to new staff continues to be invaluable. The nursing staff in particular has become skilled multi-taskers, keen negotiators, and have helped consolidate activities throughout the year. Our ability to engage with commercial organisations and provide high level support with the process of adoption is a significant contributor to our success as a group. Our nursing staff continue to exercise great versatile and have been very pro-active, playing a major role in both patient recruitment and clinical examination.

The quality of our small but highly effective Imaging team (Mr Vittorio Silvestri & Mr Graham Young) are highly rated by many other National CRNs. Vittorio and Graham continue to develop and use their extensive expertise in imaging a wide range of structures within the eye and visual system. Our Imagers recently produced and presented a successful morning workshop titled "Introduction to Clinical Imaging in research" in collaboration with other HSC imagers and two of our Optometrists; this was part of the TRG - NICRN Symposium.

As was the case with Imaging the optometric staff cohort (Dr Deidre Burns, Mr Paul Wright, Dr Lesley Boyle and Ms Katie Graham) remained unchanged during the course of 2015/16, although sessional commitments changed in line with other job opportunities that arose for members of the team. We are delighted to see these staff develop interests in other areas of optometry and vision science and take some pride in the fact that skills learned during time with NICRN have undoubtedly contributed to their professional development. The Optometric teams responsibilities extend well beyond those normally practiced by optometrists and this has contributed to their commitment to the service. All continue to protocol development; take part in clinical research audits; collated data; gain experience in reading OCTs and Fluorescein Angiograms; and take on additional responsibility in co-ordinating the studies IRISS and Luminous. Feedback from our Roche Study's Clinical Research Associate Amanda Grimshaw *"…very impressed with your VA worksheets and your documentation in general. Other sites had needed their data checked and cleaned but yours was very well presented and clean*."

Smooth running of the system is facilitated through involvement of the group's dedicated and hardworking administrator Miss Louise Scullion without whose careful oversight the Co-Chairs would find managing the evolving workload very difficult. Her role in helping coordinate the very successful joint NICRN-TRG symposium in Feb was particularly valuable. Louise also takes an active role in data management and in this regard it is a privilege to be able to support Louise as she broadens her skills in this area through her enrolment in future training in statistics next year through an Open University courses funded via Vision TRG.

Facilities

Progress in relocating to our new modified home within Ward 27 of the Eye & Ear Hospital at the Royal Victoria Hospital site had unfortunately to be postponed during the 2015/16 year. The delay was essentially unavoidable as moving was dependant on the relocation of a variety of other clinical services. Every indication is that the move will happen in the 2016/17 year and staffs awaits this with eager anticipation. In addition to providing us with more suitable space the relocation will take us closer to Ophthalmology's clinical hub, one which many patients, and potential study recruits, are familiar with. In addition to the new facilities on the RVH site staff will continue to have access to both the Clinical Research Facility at the City Hospital Site (QUB) and facilities at the Glaucoma unit at Shankill Health and Wellbeing Centre. The Vision Research Suite at the RVH site is, as indicated in previous reports, fully equipped with the following, instrumentation and equipment:

- eCRF facilities
- Visual Acuity and Contrast Sensitivity vision testing lanes
- Refraction equipment and accredited protocols
- Colour fundus cameras including Topcon, Nidek and Canon Instruments
- Fluorescein Fundus Angiography equipment
- MAIA Microperimetry & Visual field testing instrumentation
- Corneal endothelial cell count facilities
- Slit lamp Biomicroscopes
- 2RT Lazer
- Clean room for Intravitreal injections
- Spectral Domain OCT: Heidelberg Spectralis

We also have limited access to the Humphrey Visual Field Analyser.

Much of the equipment used by NICRN Vision staff is however used very regularly and, as is the case with cutting edge state of the art equipment, becomes outmoded relatively quickly. One of the challenges for the Group will be to develop a funding strategy for equipment replacement.

For example our Heidelberg Spectralis can no longer receive the gold servicing contract only the bonze and whilst the machine is in good working order, it is an old piece of equipment. Any breakdown would cause severe disruption to the majority of on-going NICRN studies.

Principal Investigators

Ophthalmology and Clinical Vision Science Research covers a vast area of sub speciality interests and deals with both the structure and function of components within the visual system, from Tear Layer to Visual Cortex. Although historically much of our work focused on Age Related Macular Degeneration, its detection, treatment and impact, of recent the portfolio of adopted studies has expanded to cover a much wider range of sub speciality topics including Glaucoma, Geographic Atrophy and Diabetic eye disease. The breadth of interest within the group is reflected in the list of PIs currently managing studies within the portfolio. (Usha Chakravarthy, Giuliana Silvestri, Jonathan Jackson, Michael Williams, Tanya Moutray, Noemi Lois, Augusto Azuara-Blanco, Sarah Wilson, Stuart McGimpsey and Ruth Hogg).

Collaboration with other Networks

In addition to the vision specific work carried out by the group, we provide on-going support for a portfolio of studies within the Cancer Network. Although numbers recruited to these studies are relatively small our staff continue to provide pre-study ophthalmic screening investigations and, thereafter, safety monitoring assessments of patients throughout the duration of the clinical trials. These studies could not proceed without the collaboration of the Vision Network. Staff have also worked with the Spinal unit to assist with study patients unable to attend for aspects of clinical care. It has also been agreed recently that out imagers will help train NICRN Dementia nurses to allow them to take images for their MCI study. Jonathan and Giuliana would particularly wish to convey their thanks to all on the team for facilitating the important work undertaken by the Cancer Group.

NICRN Vision Portfolio Metrics

Since its inception in 2008 the Vision Network has provided support for 53 studies in total. Of these 28 are closed; 14 are open; 8 are in follow-up and 3 are in set-up. During the course of the current year 109 patients were screened for inclusion in the portfolio of studies adopted and of these 50 were recruited to take part in the studies. In virtually every case recruitment was followed by attendance at a number of clinical appointments the vast majority of which involved multiple clinical assessments and many with interventional procedures.

At the commencement of the 2016/17 year an additional 4 studies were in pre-authorisation and Clinical Leads and the CMG management team were deliberating on feasibility and capacity before deciding if we have sufficient resource to adopt.

The ratio of commercial to non-commercial Ophthalmology studies being facilitated by the Group during the course of the current year was approximately 1:1 in closed or open phase. In terms of meeting recruitment targets our closed studies have achieved an impressive recruitment figure of 88.67%.

Commercial Companies with whom we are currently involved include:

Alcon Research, Ltd.
Alimera Sciences, Ltd.
Bayer Healthcare Pharmaceuticals, Inc.
Novartis
Roche
Ellex R&D Pry Ltd.

Ophthotech Corp.
Psividia Corp.

The value attributed to the work of the Network, and its dedicated team of staff, is illustrated by the comments made by representatives of those we serve. Representing the PI leads Dr Michael Williams *states "I see at first hand how the Vision NICRN research nurses and admin staff combine assiduous attention to detail with a capacity to get through an enormous amount of work, the result being the many studies successfully completed and actively recruiting. Furthermore a key characteristic of the team's work is the approach to participants, who are known and welcomed personally. Participants appear to really enjoy being part of the Vision NICRN's work."*

Representative of the strong relationships we have fostered with the funders of both Commercial and Non commercial studies that we have adopted are comments made by Dr Anthony King, CI on the multisite TAGS study, who states "*You are all integral to this success so I wanted to share this praise with you and thank you for all your work on TAGS which is clearly bearing dividends"*

Strengths of the Vision Network Group

One of the group's greatest strengths is the fact that staff do infact work as a team, dedicated, knowledgeable and above all enthusiastic. Our PIs work together on the process of adopting studies and share expertise when it comes to feasibility, protocol design and the development of recruitment strategies. The clinical team of nurses, optometrists, ophthalmologists and imaging technicians continue to assist each other and other specialities in the acquisition of new and shared skills.

Opportunities for Collaboration

Staff within the NICRN Vision Network have continued to work closely in collaboration with our colleagues at the Centre for Experimental Medicine (CEM) and the Central Angiographic Reading Facility at QUB. The Ophthalmology Programme within (CEM) is multidisciplinary in nature and pioneers translational research in basic cell and molecular biology, pathophysiology of disease, genetic analysis, protein chemistry, retinal imaging, patient-based phenotyping/genotyping and the co-ordination of multi-national clinical trials. The coordination of a Regional Research Symposium with members of the TRG has helped foster collaborative working relationships with our colleagues at the University of Ulster, and our hope is that this will lead to some successful multi site Northern Ireland led studies in the future. Miss Silvestri has been appointed as Visiting Professor to the University of

Ulster which will likely lead to increased collaborative projects. In addition to the Vision specific research supported by the network, we continue to work with our colleagues in the Cancer Network, screening and monitoring patients in receipt of new treatments, for ophthalmic and vision related adverse events. Due to the nature of the disorders, patients in Cancer trials often need to be assessed at very short notice and to date our Group has been able to respond in the required timeframe.

Cardiovascular risk in diabetes study investigator Dr Gareth McKay states *"The Vision CRN adopted our HSC funded research study to investigate variation in retinal parameters as an early indicator of cardiovascular health. The dedication and support from the CRN nurses, photographers and administrative team has been immense in driving recruitment, enabling several important research objectives to be addressed in a cross disciplinary study. The pilot data generated will help inform a full NIHR proposal and would not have been possible without the support of the HSC R&D Office working in tandem with the Vision CRN."*

Challenges

During the course of 2015/16 the Network continued to face challenges which were a direct result of success achieved in previous years. As more studies were proposed for adoption our nursing, team was required to increase the administrative workload and process increased numbers of adoption forms and intensity tools. Our Optometrists and Imaging team members have been called upon, not only to deliver a broader range of complex visual function, functional vision and photographic/imaging assessments and tests, but to do this across multiple sites. Recently the request to support studies in the CRF has put significant strain on the Group's resources due to time required off site, The final staff grouping, absolutely essential to the smooth running of adopted studies are medical staff and the absence of core funding to appoint sessional medical staff to the team creates undue pressure on other staff and jeopardises our ability to take on board other commercial trials. An on-going challenge facing the team is that of "Trust Processes" however the dedicated team in the NICRN office (Dr Paul Biagioni, Mrs Sonia McKenna, Mr Shane Jackson, Mrs Ciara McKenna and Miss Roisin Kerr) have once again worked consistently to help us through these.

The Network has historically tended to be Belfast-centric, and in this regard we will continue to try and address the challenge of supporting the Clinical Vision Science Community, region wide, in pursuit of research opportunities in the incoming year.

Achieving this objective will be facilitated by increased involvement of CMG member representation from both the Western Trust and the University of Ulster.

The lack NICRN funded medical staff impacts on all studies especially those studies which are masked. This sometimes necessitates two visits to ensure that the appropriate staff are available.

Specific Study Challenges

The research team continue to respond creatively to the challenges associated with the recruitment of treatment naive subjects.

The study HARRIER rotated through several PI's (UC, MU, SMG) before set up and when it eventually received R&D approval study had fully recruited and closed before we could randomise a patient.

Spectri proved very difficult to recruit for and of the 33 patients pre-screened, most seemed to have resigned themselves to the disease and were not interested in research therefore difficult to recruit. Recruitment was competitive and USA was doing very well.

SAFARI also proved difficult to recruit as of 311 patients pre-screened, only a few progressed to recruitment. The UK in general also found it difficult to recruit.

Education and Training

In Feb 2016 (19th) the NICRN Vision Group coordinated, in partnership with the Vision TRG Group, a Regional Vision Symposium at the Centre for Experimental Medicine Wellcome-Wolfson building, QUB. The Symposium, which was attended by in excess of 110 delegates, illustrated the rich and diverse multiprofessional and inter agency expertise inherent in the Vision Sciences community in Northern Ireland. In attendance were Medical Staff, Nurses, Optometrists, Clinical and Basic Science Researchers and Postgrad Students. The meeting was also attended by a number of undergraduate students interested in pursuing a career in the Vision Related disciplines. The symposium programme including 2 morning workshops, 3 Key Note addresses, 6 Oral presentations and 28 posters presentations.

With regards to NICRN staff development, members of the NICRN Vision Team attended a variety of training events, (1 mandatory and 8 non-mandatory) during the course of the 2015/16 year. Table 17 illustrates the training events supported by the NICRN for the vision group.

Table 17 illustrating the training events specific to NICRN vision

01/04/2015 – 31/03/2016 (Staff attended throughout)	Ophthalmology speciality Group Meetings – London
April 2015	MP1 Scotopic Visual Fields Capture - Training
September 2015	SPECTRI Meeting in London
September 2015	Ophthalmology Nurse Meeting, Belfast
October 2015	Harrier Study Meeting, Frankfurt
October 2015	Mirrors Study Workshop
October 2015	IRAS and Good Research Practice - Course
February 2016	TRG / NICRN Symposium and workshops
March 2016	All about the Macular Service Training Day, Belfast

Summary

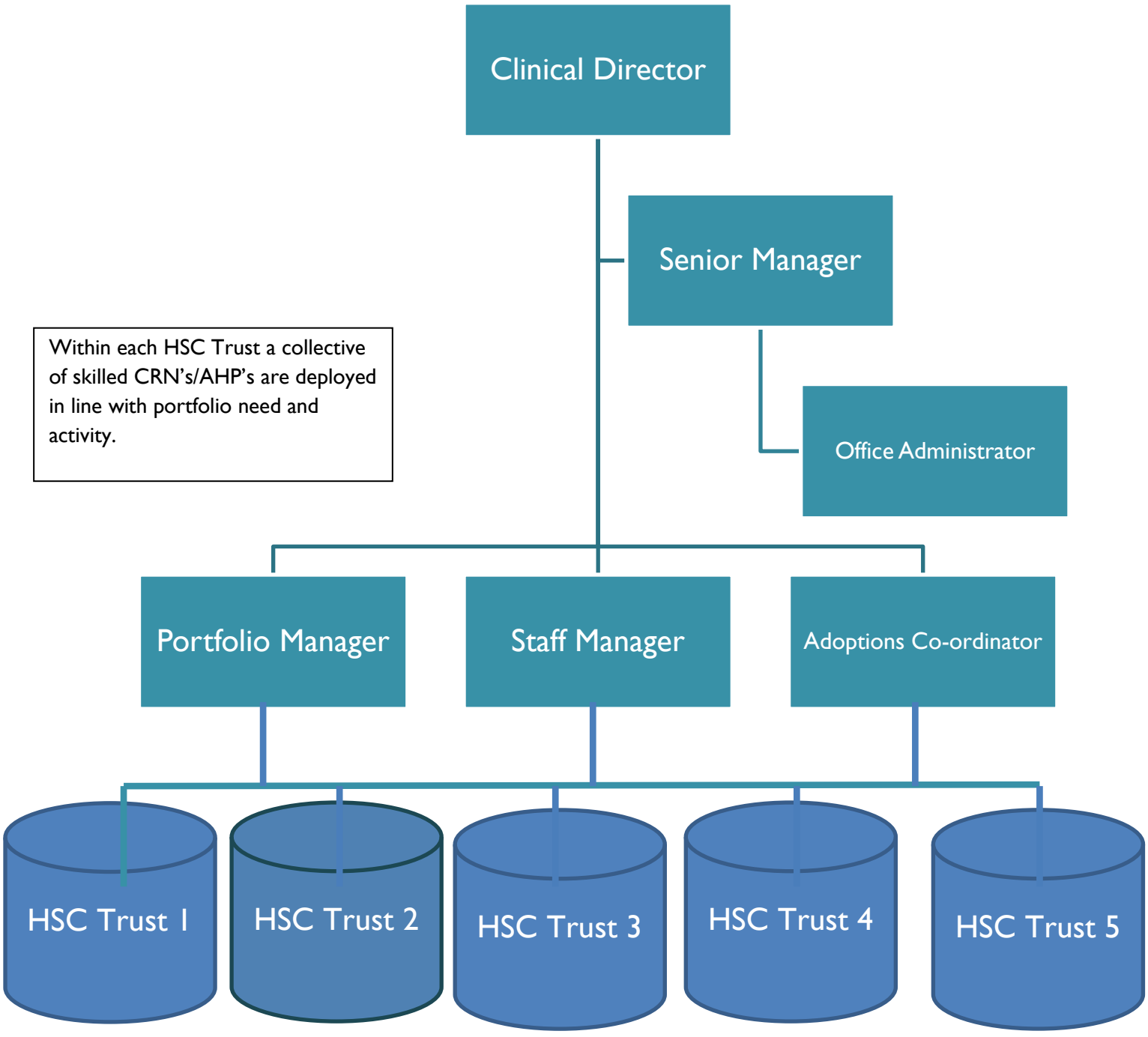
By way of conclusion the NICRN Vision Network continues to be a vibrant, active and dedicated group with excellent recruitment and accrual targets. The group has interacted with a number of other specialities and groups and continues to grow. The staff complement has been expanded using the Research Capacity Fund to help meet the increasing and projected need for 2016/17

Section 4

Appendices

Appendix I

NICRN Co-ordinating centre Organisational structure



Within each HSC Trust a collective of skilled CRN's/AHP's are deployed in line with portfolio need and activity.

Appendix 2

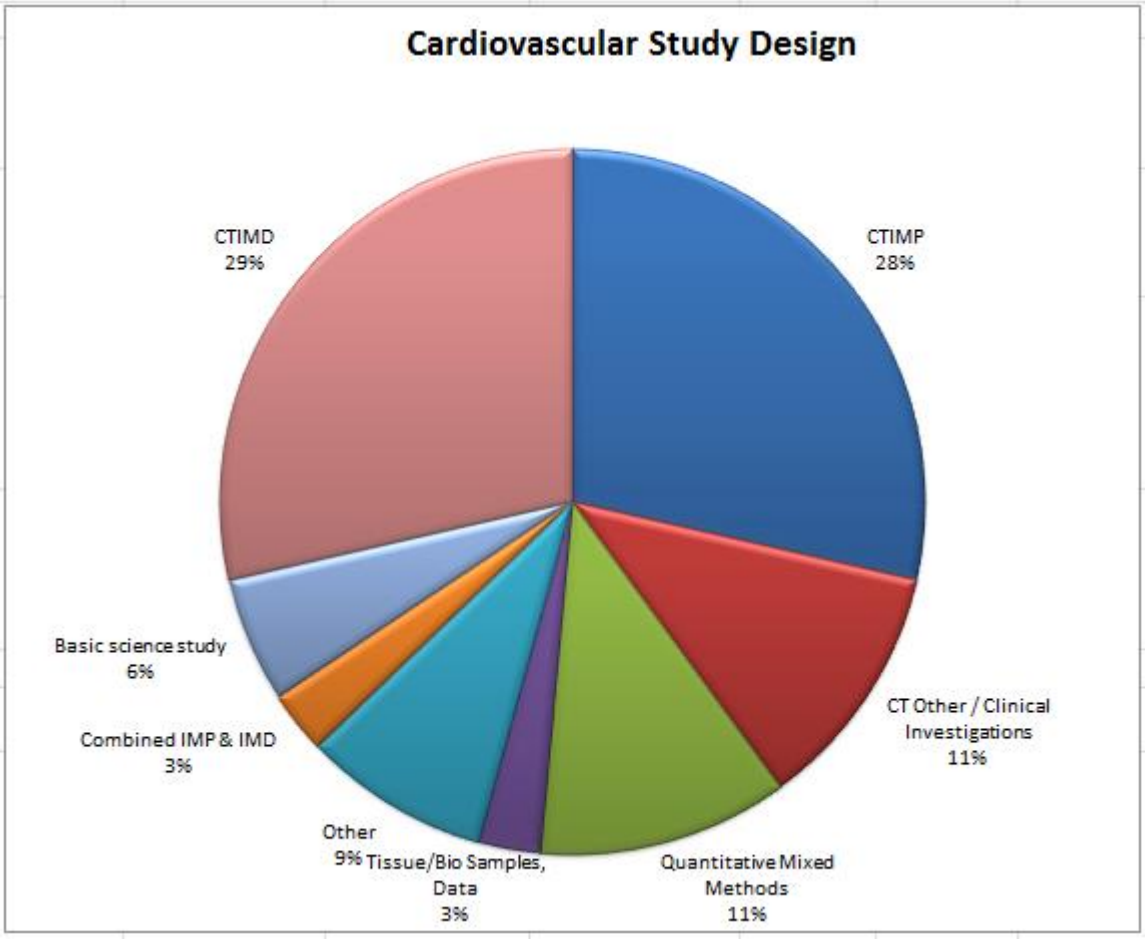
NICRN Interest group data tables

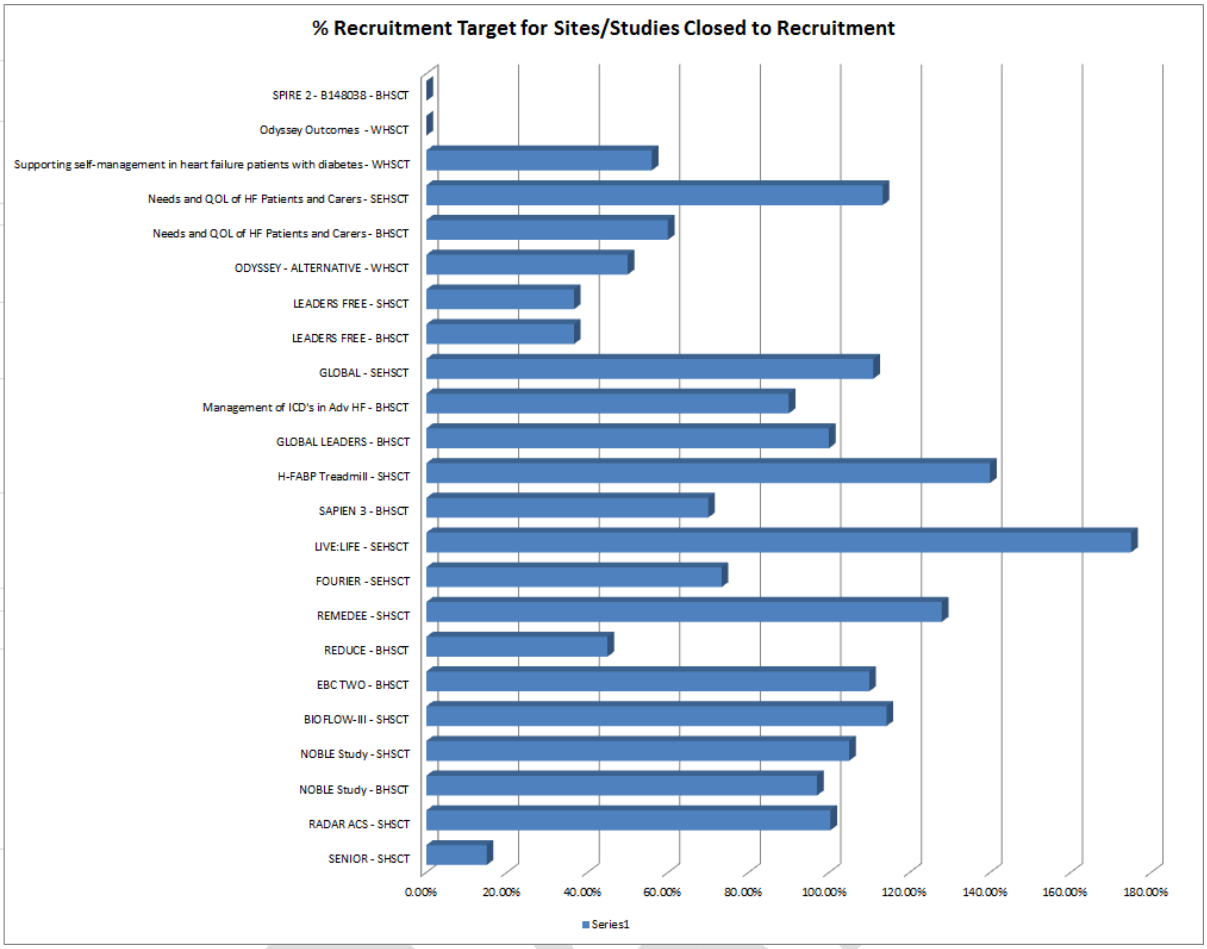
NICRN Interest group data tables for 15/16 reporting period. Data relates to all/any adopted study which had an activity allocated against it within reporting period.

Cardiovascular Interest Group

Total Active Studies 2015/16	35
Total Active Sites 2015/16	41
Total Studies in Overall Portfolio	61

Active Studies	Active Sites	Commercial	Randomised	Multicentre
35	41	54%	49%	14%

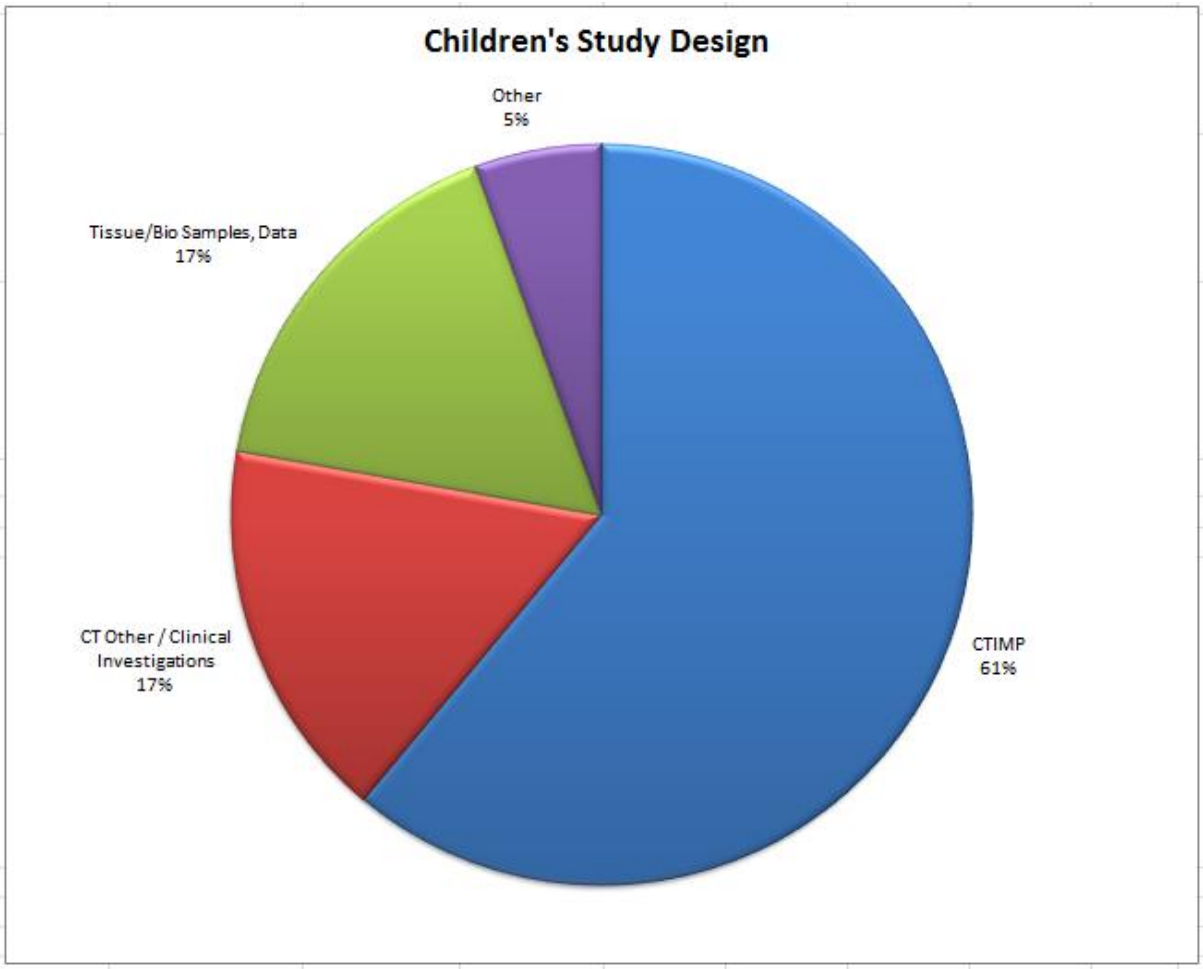


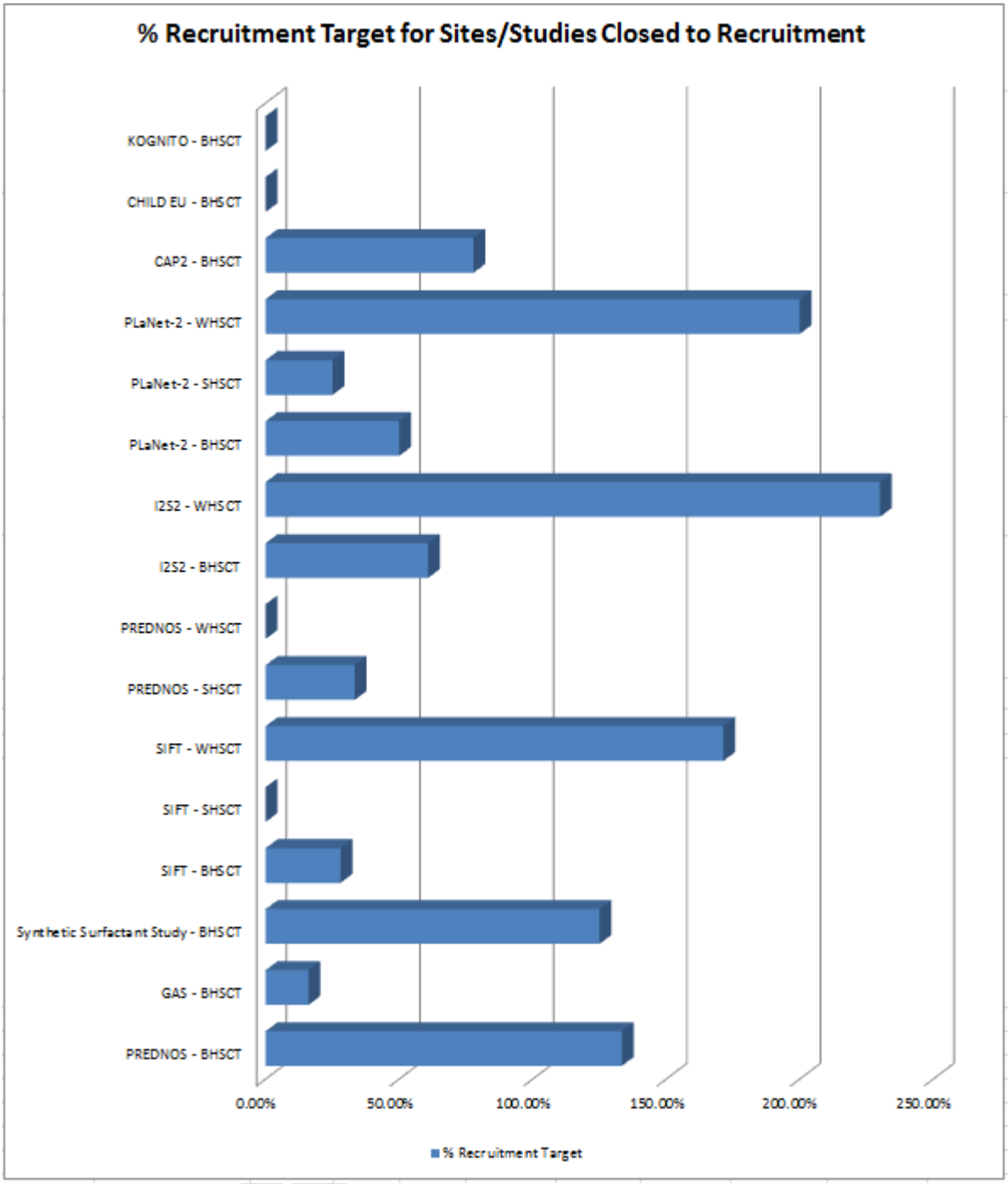


Childrens Interest Group

Total Active Studies 2015/16	18
Total Active Sites 2015/16	28
Total Studies in Overall Portfolio	36

Active Studies	Active Sites	Commercial	Randomised	Multicentre
18	28	17%	56%	44%

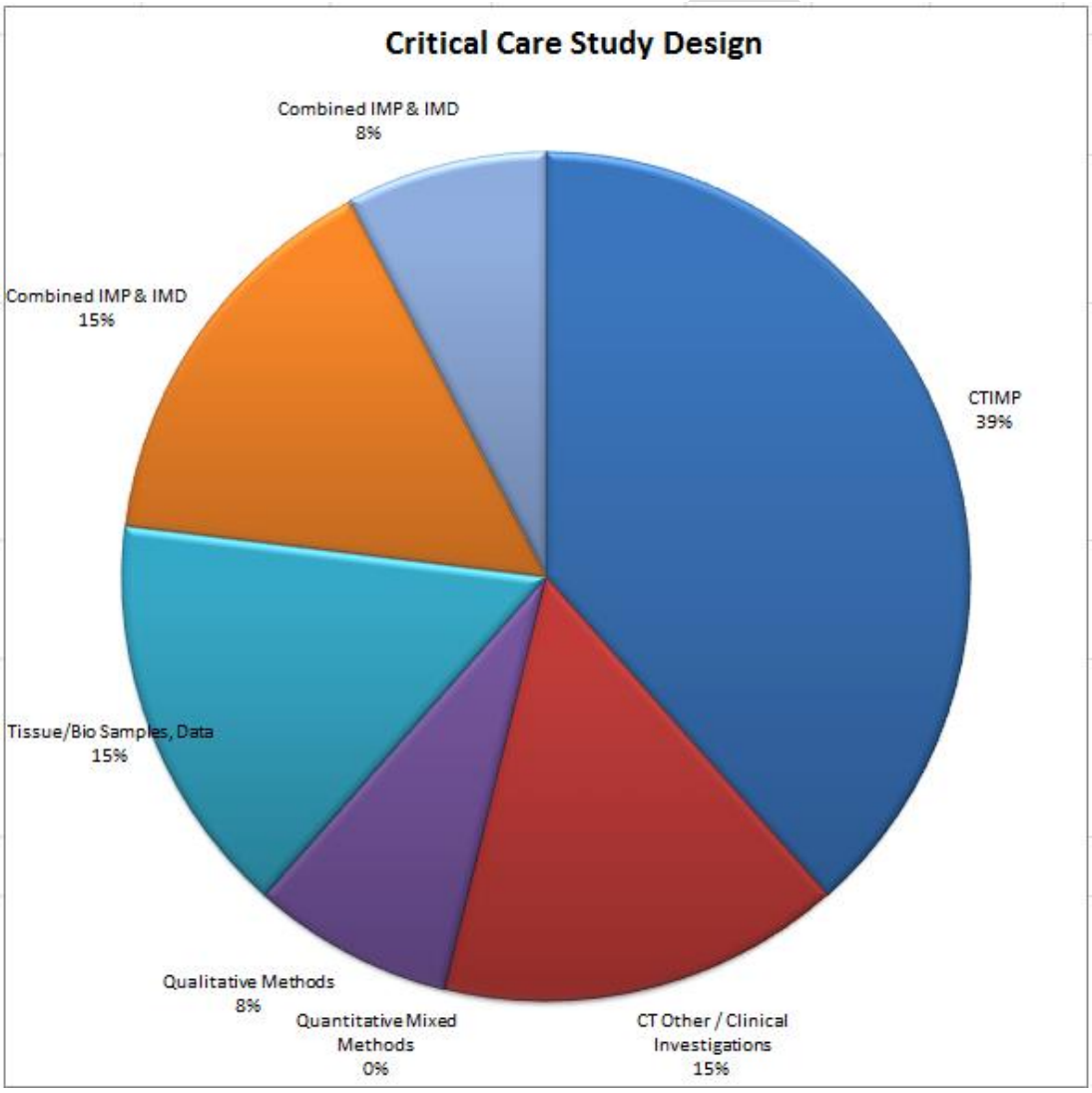

Children's Study Design
Other
5%
Tissue/Bio Samples, Data
17%
CT Other / Clinical
Investigations
17%
CTIMP
61%

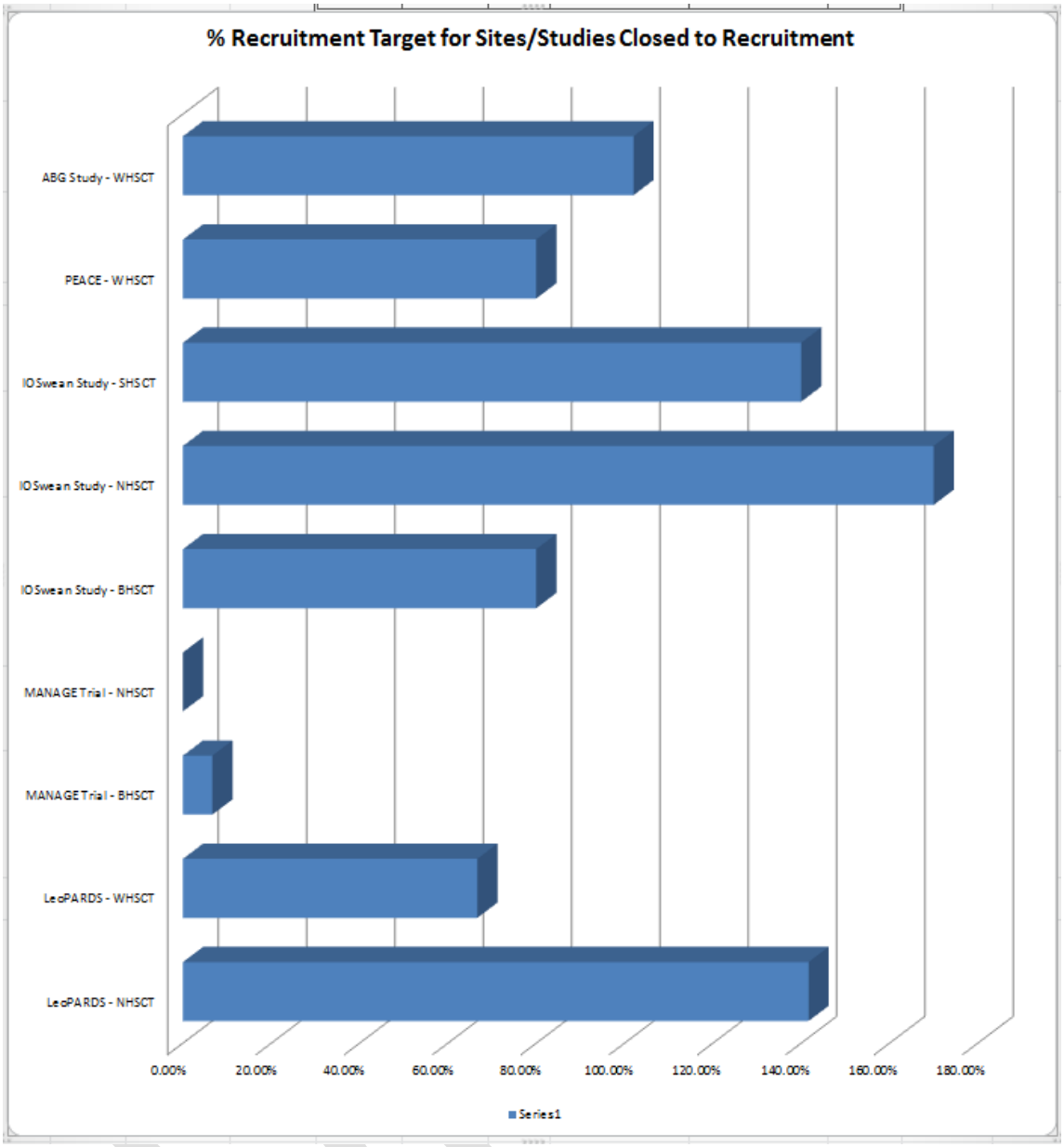

% Recruitment Target for Sites/Studies Closed to Recruitment
KOGNITO - BHSCT
CHILD EU - BHSCT
CAP2 - BHSCT
PLaNet-2 - WHSCT
PLaNet-2 - SHSCT
PLaNet-2 - BHSCT
I2S2 - WHSCT
I2S2 - BHSCT
PREDNOS - WHSCT
PREDNOS - SHSCT
SIFT - WHSCT
SIFT - SHSCT
SIFT - BHSCT
Synthetic Surfactant Study - BHSCT
GAS - BHSCT
PREDNOS - BHSCT
0.00%
50.00%
100.00%
150.00%
200.00%
250.00%
% Recruitment Target

Critical Care Interest Group

Total Active Studies 2015/16	13
Total Active Sites 2015/16	21
Total Studies in Overall	31

Active Studies	Active Sites	Commercial	Randomised	Multicentre
13	21	8%	62%	31%

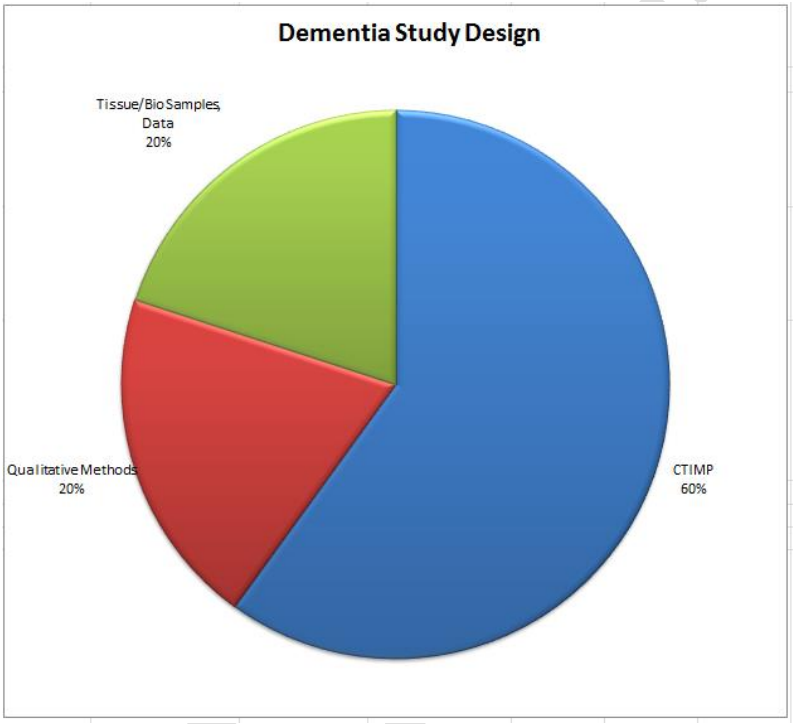


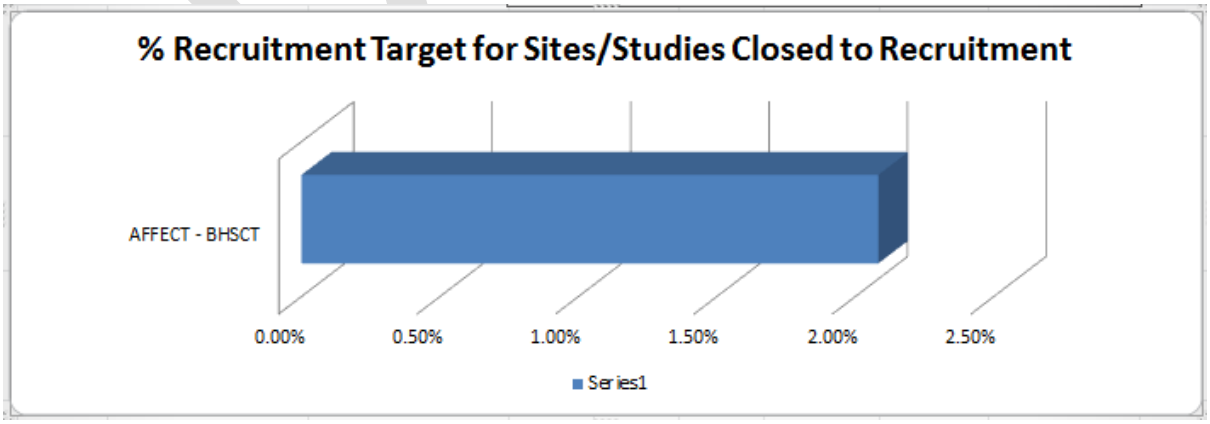

% Recruitment Target for Sites/Studies Closed to Recruitment
ABG Study - WHSCT
PEACE - WHSCT
IOSwean Study - SHSCT
IOSwean Study - NHSCT
IOSwean Study - BHSCT
MANAGE Trial - NHSCT
MANAGE Trial - BHSCT
LeoPARDS - WHSCT
LeoPARDS - NHSCT
0.00%
20.00%
40.00%
60.00%
80.00%
100.00%
120.00%
140.00%
160.00%
180.00%
Series1

Dementia Interest Group

Total Active Studies 2015/16	5
Total Active Sites 2015/16	5
Total Studies in Overall	13

Active Studies	Active Sites	Commercial	Randomised	Multicentre
5	5	20%	40%	0%

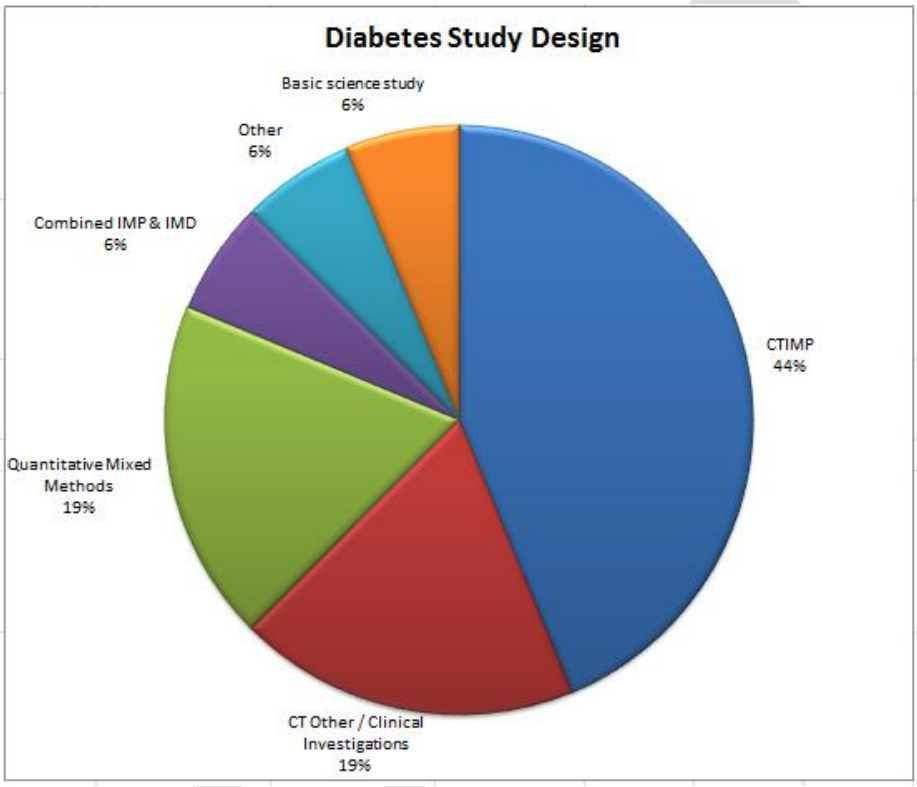


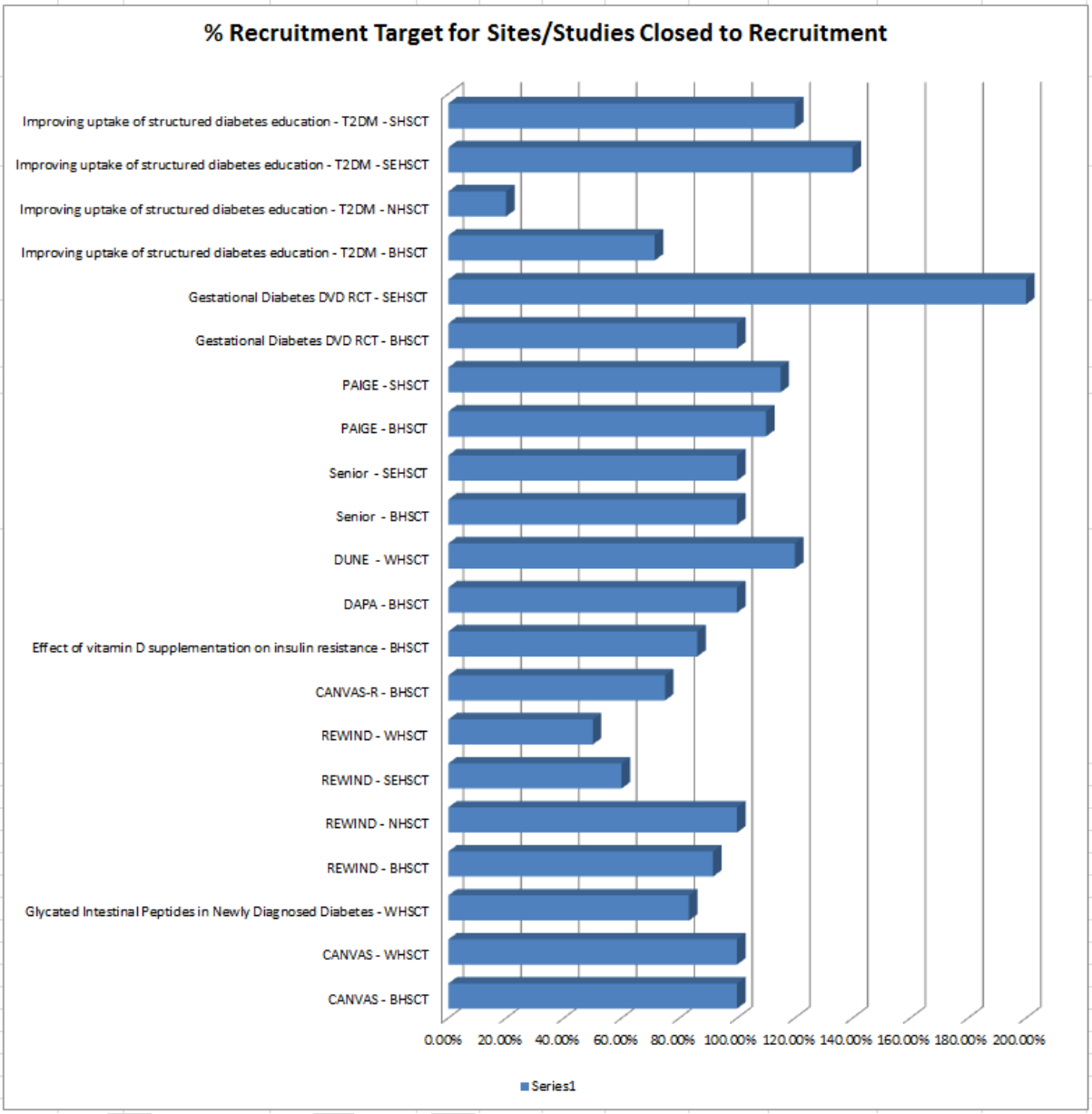


Diabetes Interest Group

Total Active Studies 2015/16	16
Total Active Sites 2015/16	29
Total Studies in Overall Portfolio	46

Active Studies	Active Sites	Commercial	Randomised	Multicentre
16	29	63%	69%	50%

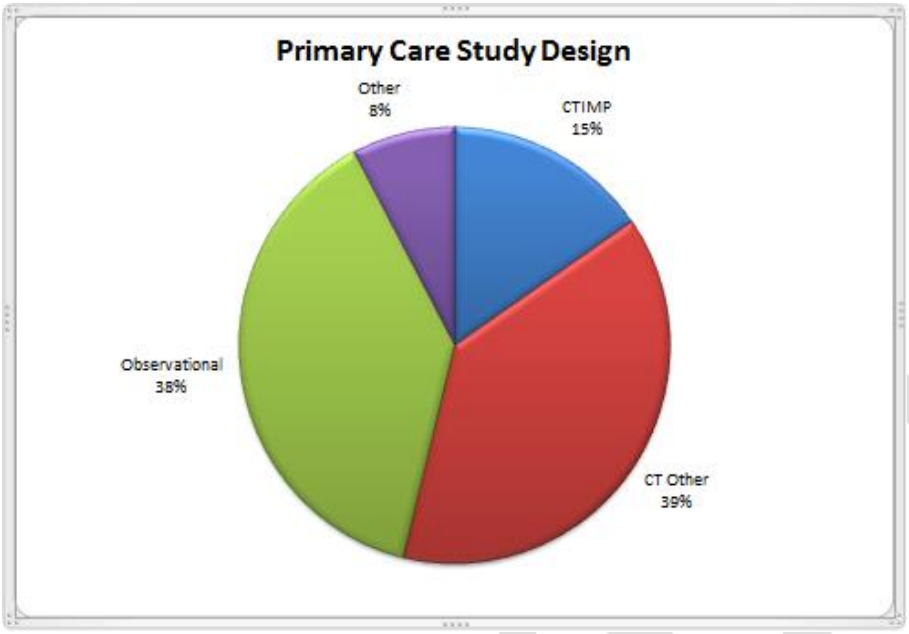


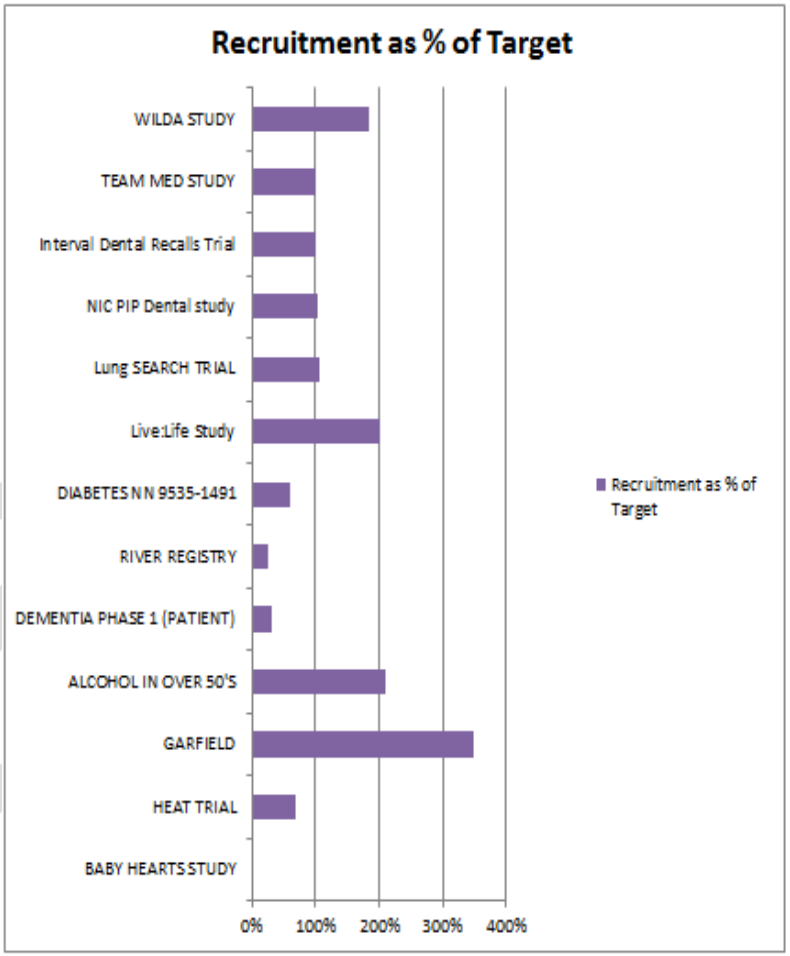

% Recruitment Target for Sites/Studies Closed to Recruitment
Improving uptake of structured diabetes education - T2DM - SHSCT
Improving uptake of structured diabetes education - T2DM - SEHSCT
Improving uptake of structured diabetes education - T2DM - NHSCT
Improving uptake of structured diabetes education - T2DM - BHSCT
Gestational Diabetes DVD RCT - SEHSCT
Gestational Diabetes DVD RCT - BHSCT
PAIGE - SHSCT
PAIGE - BHSCT
Senior - SEHSCT
Senior - BHSCT
DUNE - WHSCT
DAPA - BHSCT
Effect of vitamin D supplementation on insulin resistance - BHSCT
CANVAS-R - BHSCT
REWIND - WHSCT
REWIND - SEHSCT
REWIND - NHSCT
REWIND - BHSCT
Glycated Intestinal Peptides in Newly Diagnosed Diabetes - WHSCT
CANVAS - WHSCT
CANVAS - BHSCT
0.00% 20.00% 40.00% 60.00% 80.00% 100.00% 120.00% 140.00% 160.00% 180.00% 200.00%
Series1

Primary Care Interest Group

Total Active Studies 15/16	9
Total Studies in Overall Portfolio	36

Active Studies	Commercial	Randomised	Multicentre
9	31%	46%	92%

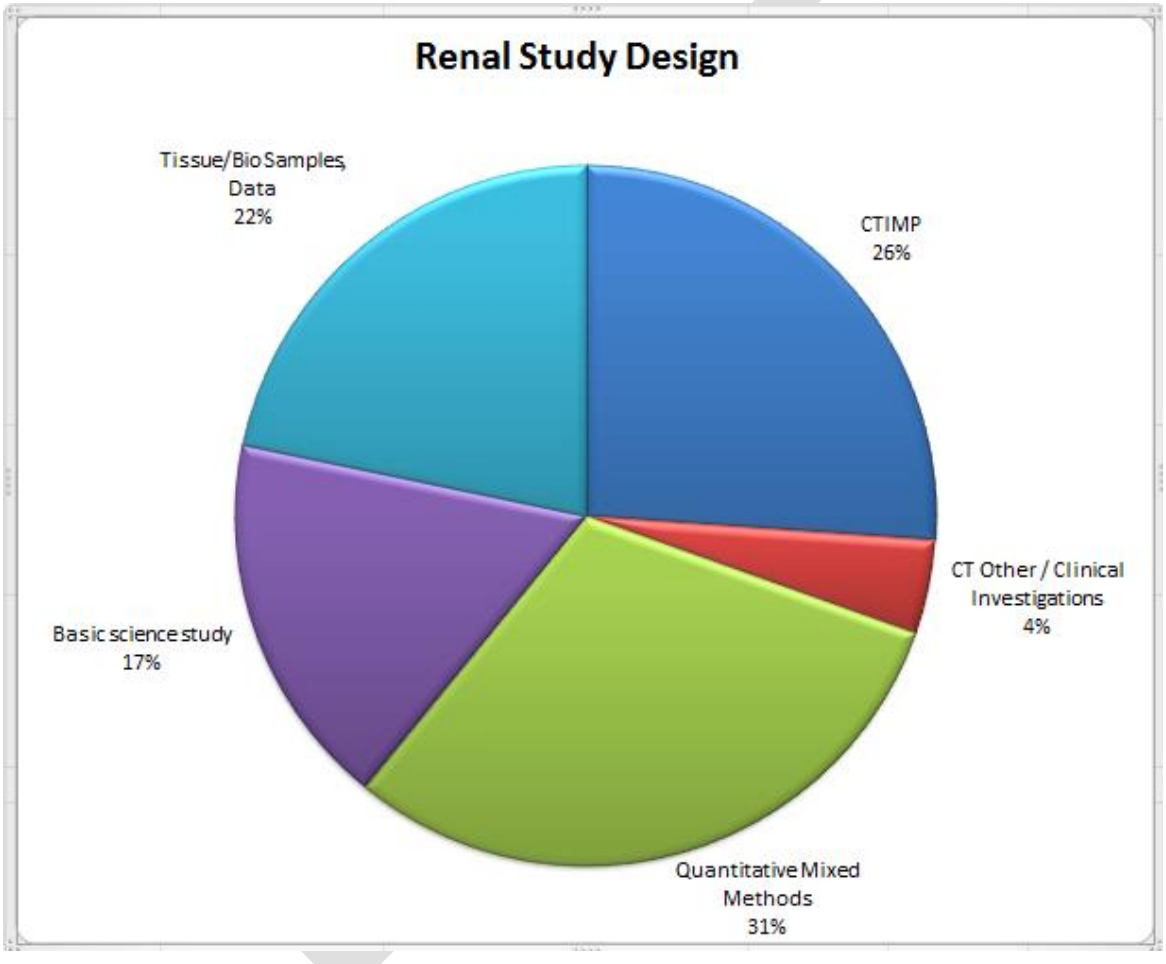


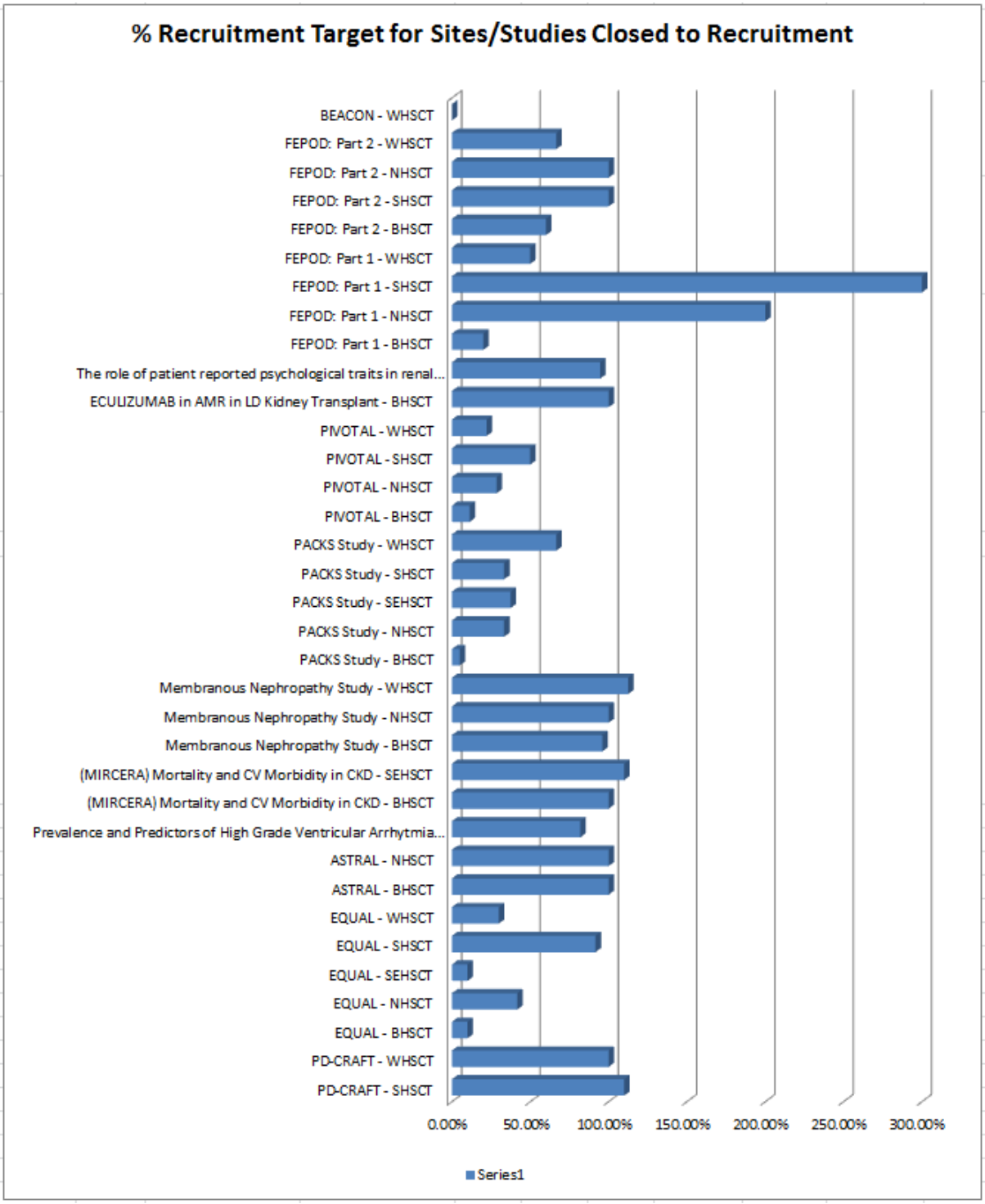

Recruitment as % of Target
WILDA STUDY
TEAM MED STUDY
Interval Dental Recalls Trial
NIC PIP Dental study
Lung SEARCH TRIAL
Live:Life Study
DIABETES NN 9535-1491
RIVER REGISTRY
DEMENTIA PHASE 1 (PATIENT)
ALCOHOL IN OVER 50'S
GARFIELD
HEAT TRIAL
BABY HEARTS STUDY
0%
100%
200%
300%
400%
Recruitment as % of Target

Renal Interest Group

Total Active Studies 2015/16	**23**
Total Active Sites 2015/16	**57**
Total Studies in Overall Portfolio	**38**

Active Studies	Active Sites	Commercial	Randomised	Multicentre
23	57	22%	26%	61%

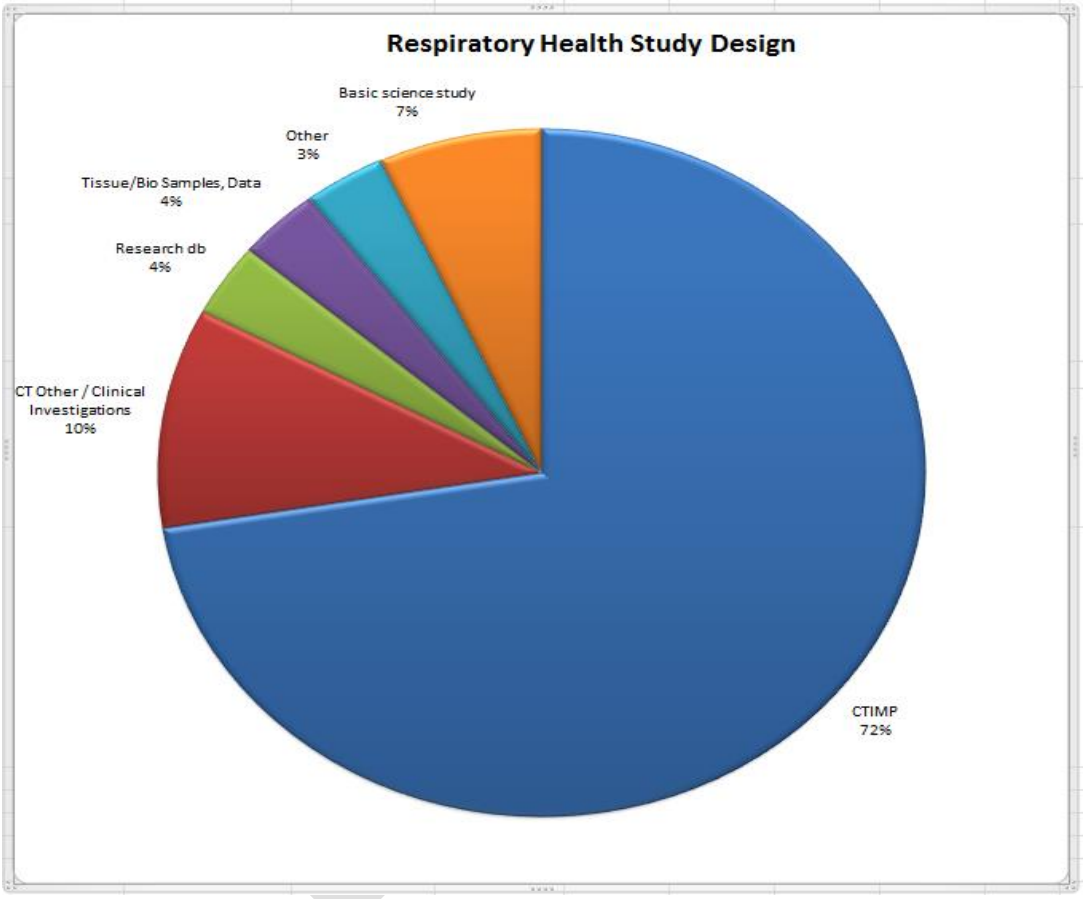


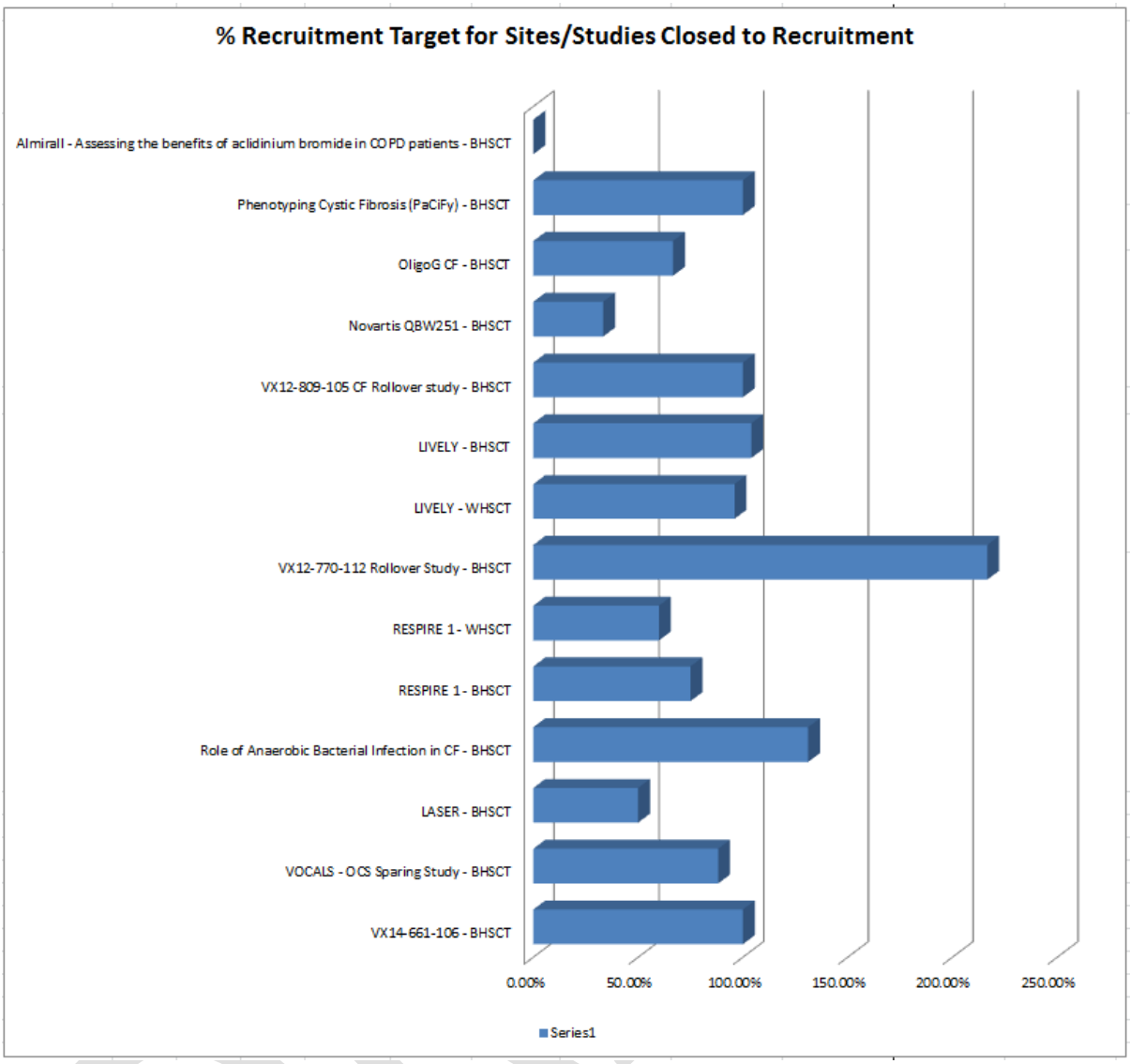

% Recruitment Target for Sites/Studies Closed to Recruitment
BEACON - WHSCT
FEPOD: Part 2 - WHSCT
FEPOD: Part 2 - NHSCT
FEPOD: Part 2 - SHSCT
FEPOD: Part 2 - BHSCT
FEPOD: Part 1 - WHSCT
FEPOD: Part 1 - SHSCT
FEPOD: Part 1 - NHSCT
FEPOD: Part 1 - BHSCT
The role of patient reported psychological traits in renal...
ECULIZUMAB in AMR in LD Kidney Transplant - BHSCT
PIVOTAL - WHSCT
PIVOTAL - SHSCT
PIVOTAL - NHSCT
PIVOTAL - BHSCT
PACKS Study - WHSCT
PACKS Study - SHSCT
PACKS Study - SEHSCT
PACKS Study - NHSCT
PACKS Study - BHSCT
Membranous Nephropathy Study - WHSCT
Membranous Nephropathy Study - NHSCT
Membranous Nephropathy Study - BHSCT
(MIRCERA) Mortality and CV Morbidity in CKD - SEHSCT
(MIRCERA) Mortality and CV Morbidity in CKD - BHSCT
Prevalence and Predictors of High Grade Ventricular Arrhytmia...
ASTRAL - NHSCT
ASTRAL - BHSCT
EQUAL - WHSCT
EQUAL - SHSCT
EQUAL - SEHSCT
EQUAL - NHSCT
EQUAL - BHSCT
PD-CRAFT - WHSCT
PD-CRAFT - SHSCT
0.00%
50.00%
100.00%
150.00%
200.00%
250.00%
300.00%
Series1

Respiratory Health – Interest Group

Total Active Studies 2015/16	29
Total Active Sites 2015/16	31
Total Studies in Overall Portfolio	66

Active Studies	Active Sites	Commercial	Randomised	Multicentre
29	31	59%	66%	7%

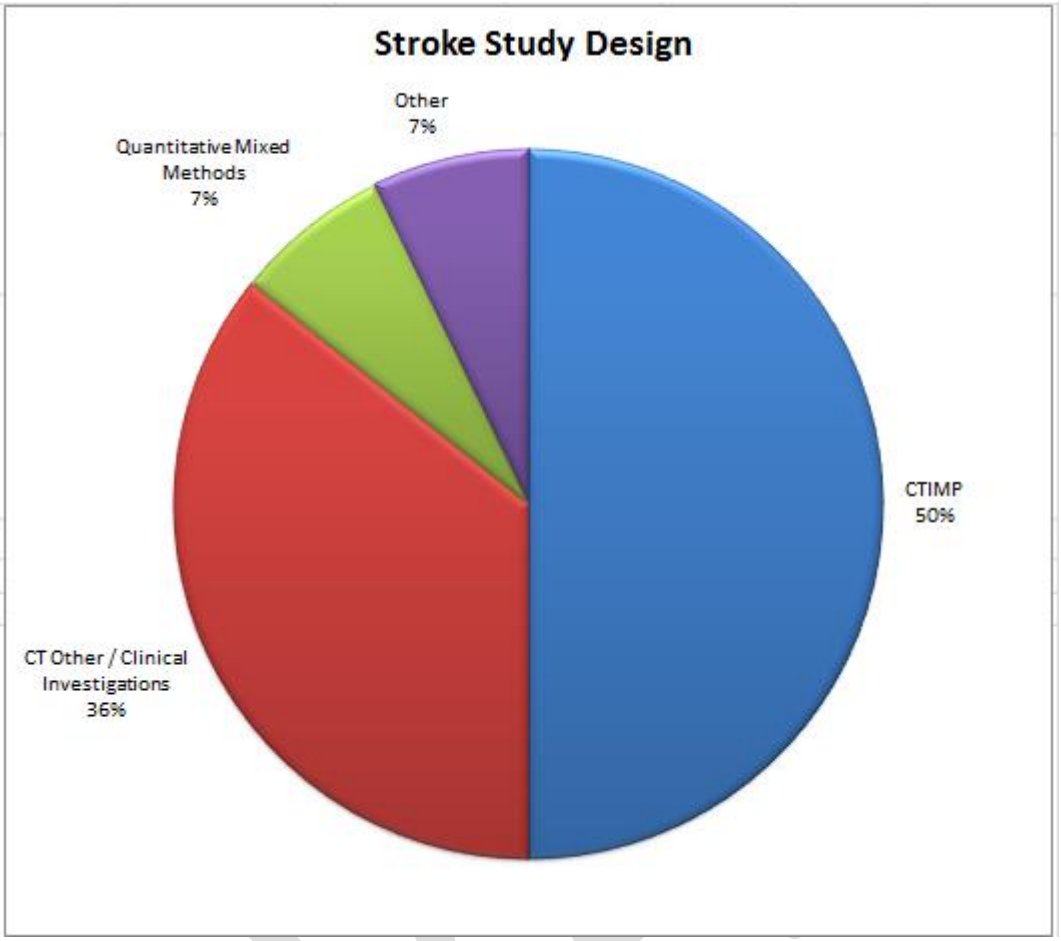


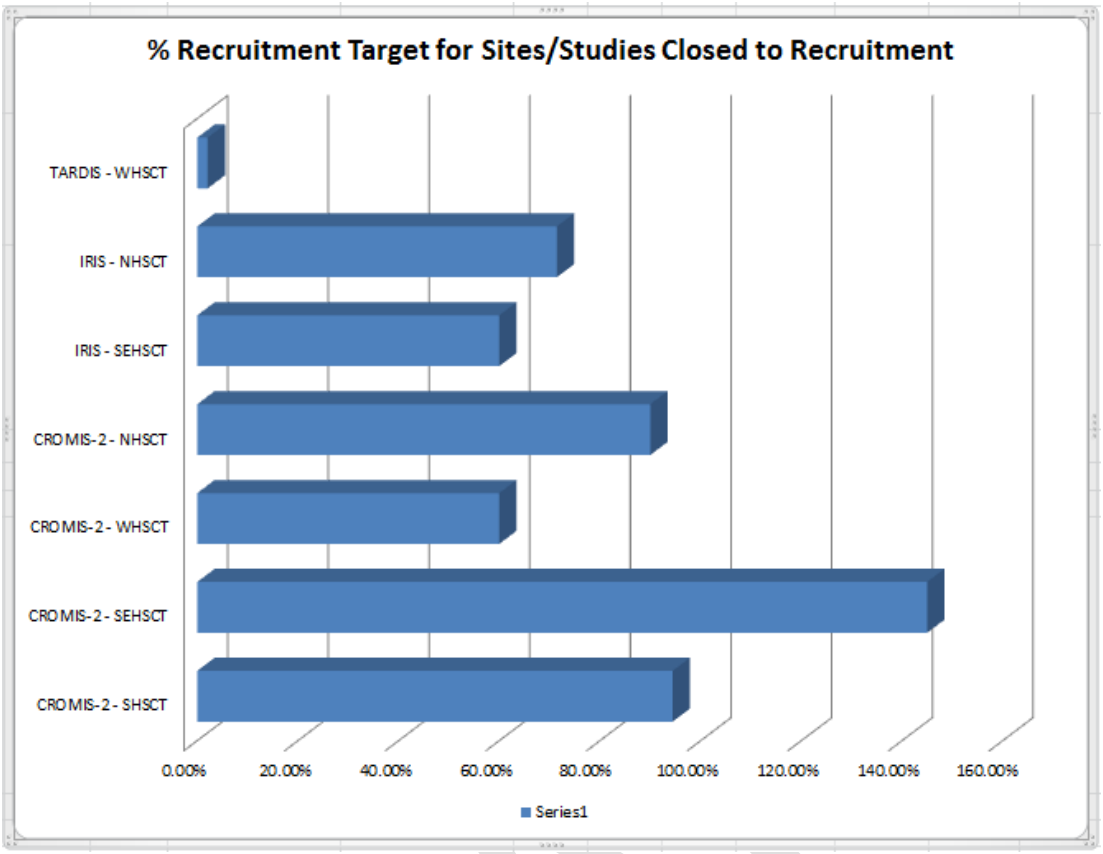


Stroke Interest Group

Total Active Studies 2015/16	14
Total Active Sites 2015/16	32
Total Studies in Overall Portfolio	24

Active Studies	Active Sites	Commercial	Randomised	Multicentre
14	32	14%	86%	64%

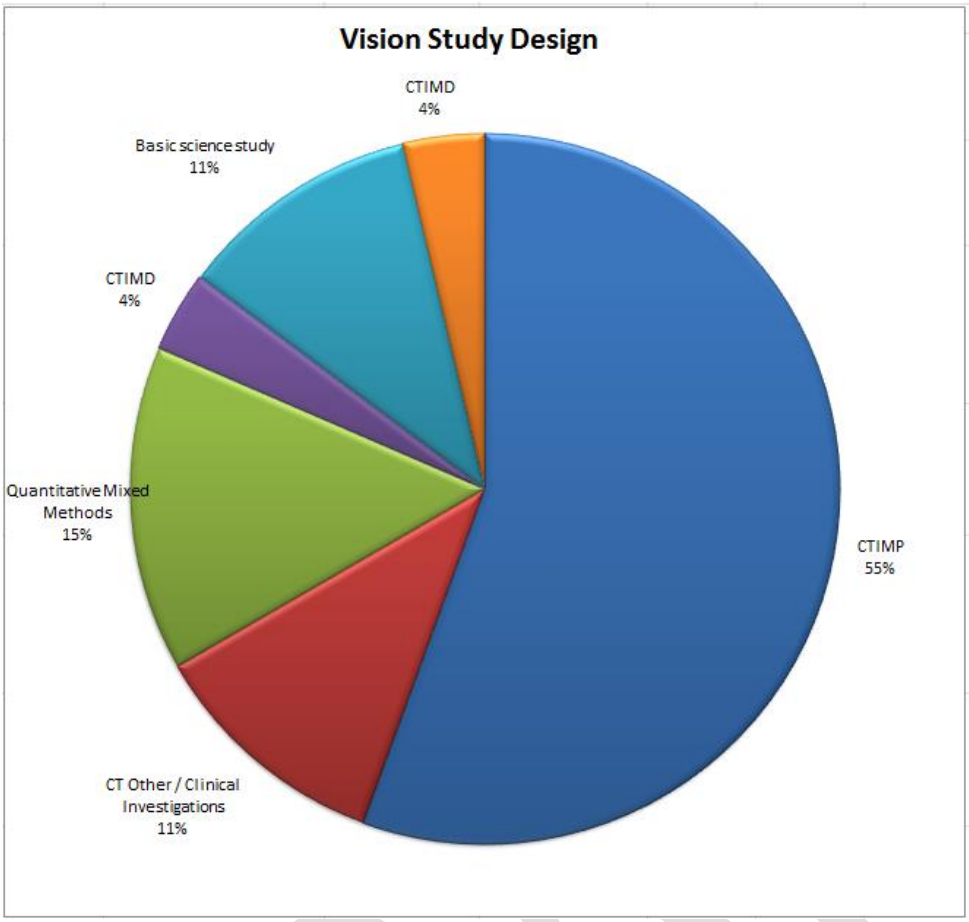

Stroke Study Design
Other
7%
Quantitative Mixed
Methods
7%
CTIMP
50%
CT Other / Clinical
Investigations
36%

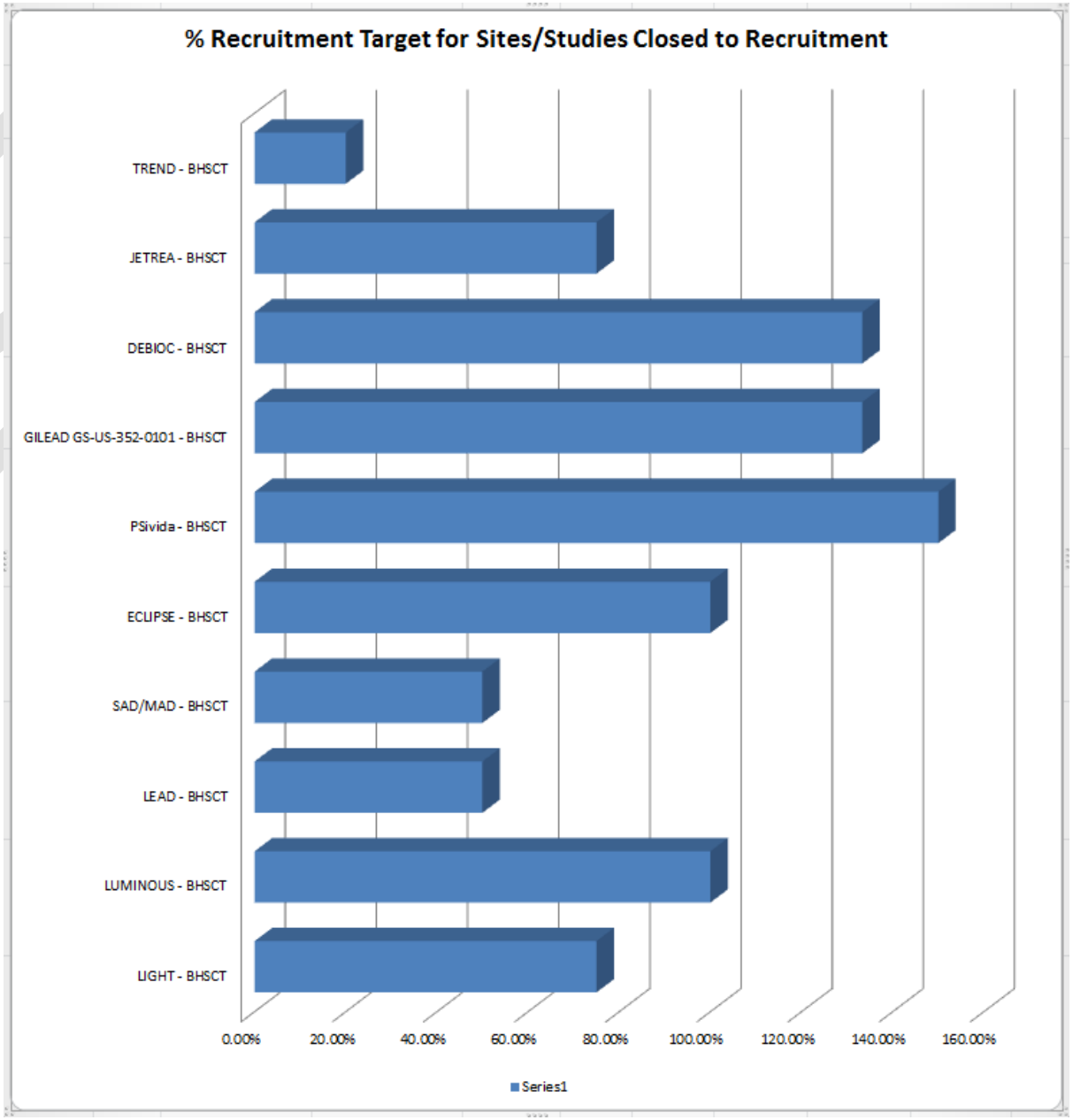


Vision Interest Group

Total Active Studies 2015/16	**27**
Total Active Sites 2015/16	**27**
Total Studies in Overall Portfolio	**54**

Active Studies	Active Sites	Commercial	Randomised	Multicentre
27	27	52%	44%	0%


Vision Study Design
CTIMD
4%
Basic science study
11%
CTIMD
4%
Quantitative Mixed
Methods
15%
CTIMP
55%
CT Other / Clinical
Investigations
11%


% Recruitment Target for Sites/Studies Closed to Recruitment
TREND - BHSCT
JETREA - BHSCT
DEBIOC - BHSCT
GILEAD GS-US-352-0101 - BHSCT
PSivida - BHSCT
ECLIPSE - BHSCT
SAD/MAD - BHSCT
LEAD - BHSCT
LUMINOUS - BHSCT
LIGHT - BHSCT
0.00%
20.00%
40.00%
60.00%
80.00%
100.00%
120.00%
140.00%
160.00%
Series1

Appendix 3

NICRN Adoption process

NICRN Adoption Process