**Biennial Review of Institute for Health Research 2016-2018**

**Overview** The Institute for Health Research (IHR) is an umbrella organisation for researchers and research activities across an extensive spectrum of health and health-related research within LJMU, bringing together a multi- and inter-disciplinary mix of expertise to address 21st century health challenges. The vision, to establish the IHR as a world-leading institute at the forefront of health research, scholarship and knowledge exchange, across local, national and international platforms, is gradually being realised as researchers appreciate the benefits of collaboration across disciplinary boundaries. The IHR is gaining recognition as being at the forefront of innovative research with a focus on understanding healthy behaviours, the prevention of illness and improved patient care, with particular attention towards the health needs of our city region. The original objectives for the IHR were, in brief, to:

1. Provide leadership, direction and unity for health-related research and scholarly activities across LJMU.
2. Enhance the research environment and individual researcher capability.
3. Align our research and activities to external priorities and increase the acquisition of funding from a variety of external sources.
4. Promote the publication of world-leading outputs and increase the overall REF quality profile of health research.
5. Develop capacity and capability in focused health-related research disciplines to enable swift, targeted responses to external drivers, policy initiatives and workforce needs.
6. Explore all potential opportunities for effective external engagement and establish productive partnerships.

**Structure & governance** Membership of the IHR is inclusive and offered to all LJMU staff. The IHR currently has 191 staff members from across LJMU and this number is steadily growing with an increasing awareness of the benefits of being part of the IHR research community. Moving forwards, the intention is to offer membership to PhD and research-based MSc students and professional service staff undertaking health-related research and/or internal and external engagement activities. In the future membership may also be offered to key external collaborators. The membership breakdown across LJMU (Table 1) indicates the truly cross-institutional membership of the IHR. Some IHR members are highly active researchers who engage fully in developing collaborative research ideas, projects and outputs where-as others benefit from the developmental opportunities the Institute’s workshops offer, where they can engage and learn from the more experienced researchers with a wide variety of interest and expertise (objective 2).

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| --- | --- | --- | --- | --- | --- | --- | --- |
| Faculty/Dept. | APPS | EHC | FET | LBS | SCS | RIS | PRO |
| Members | **12** | **60** | **17** | **2** | **87** | **9** | **4** |
| Per School |  | NAH (24) |  |  | NSP (27) |  |  |
|  |  | SSLN (6) |  |  | PBS (26) |  |  |
|  |  | PHI (19) |  |  | SPS (34) |  |  |
| **TOTAL: 189** |  | EDU (11) |  |  |  |  |  |

*Table 1. IHR membership* distribution

The IHR is overseen by an Executive Board (Figure 1) that meets quarterly to discuss key strategic decisions regarding external collaborations, research direction and funding.



*Figure 1. The Executive Board*

The Advisory Board (Figure 2) meets bimonthly to disseminate and review ongoing research activities within, the IHR; IHR interest groups; contributing schools; research institutes/centres; and external meetings. The minutes from this group are reported to the Executive Board and there is good communication between the two Boards.



*Figure 2. The Advisory Board*

Research within the IHR is currently organised within eight interest groups (Figure 3) that capture the relevant research activities across the IHR and feed into external local research priorities and also support internal and external engagement projects. Each group is led by one or two co-ordinators who steer the group research direction, priorities and activities, reporting via Head of IHR to the Advisory Board. Many IHR members contribute to more than one Interest Group.



*Figure 3: IHR Research Structure*

**Strategic alignment** The IHR contributes to the LJMU strategic plan by supporting a culture of excellence in research, scholarship and external engagement. It encourages and facilitates collaboration, not just between researchers within LJMU but extending to those working in the health services, the commercial sector, and also with patient populations and local communities. The IHR works alongside other local, regional, national and international research communities (figure 5) to ensure that our research is recognised as world class, and funding opportunities that encourage staff exchanges, meetings and collaboration within the Liverpool City region and across the globe are embraced (objective 5). The IHR is an important contributor to involving researchers in the REF process and increasing the REF readiness of UoA3, a large (<75 FTE) cross-Faculty and cross-School unit of assessment. Outside of UoA3, the IHR also has over 60 members who will most likely be submitted to other UoAs such as sports science, psychology, maths, art and education but could also potentially be submitted to UoA3.

**Research Environment** The IHR aims to increase the ability and capacity for researchers to improve human health across the life courseby providing leadership, direction and unity for health-related research and scholarly activities (Figure 4). Also by enhancing individual researcher capability via promoting researcher development, the sharing of ideas and increasing cross-discipline collaborations through participation in shared projects, PhD supervisions, discussions, workshops and seminars, (objective 1). One of the IHR’s major strengths is in generating a diverse and inclusive environment for researchers, with different levels of experience and, who bring expertise in different subject areas and methodologies to the table (objective 2). The IHR works with the LJMU Researcher Development team to support IHR members at different career stages. For example, a systematic reviews workshop was incorporated into the Activator Series to encourage those new to health research to consider systematic reviews as a mechanism to define research projects and start publishing in peer reviewed journals.

The IHR interest groups (Figure 3) were designed to be flexible, to grow and to develop with the changing needs of the group members and to address new health priorities of different communities. Recently, certain interest groups have been re-assigned as cross-cutting themes; Data Science & Technology, International Health Research, Systematic Reviews and Workforce Development, with the realisation that this expertise feeds into several different groups. A new interest group, “Living with Cancer”, has recently been established through the recognition of a critical mass in this area and a critical mass is evolving around social prescribing. Although the strong Interest Groups are meeting their targets, others still require support to develop a focused approach and increase activity. The success of an interest group is related to the motivation and dedication of the group co-ordinators so, moving forward, the intention is to secure coordinators with time and ambition to lead these groups.

*Figure 4: IHR Strategic Approach*

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In 2017, the IHR Cardiovascular Health and Care Group organised a workshop between cardiovascular researchers here at LJMU with clinical cardiovascular researchers from local NHS trusts, in particular Alder Hey Children’s Hospital and Liverpool Heart and Chest Hospital (LHCH). Since then, they have been working with colleagues at LHCH and the University of Liverpool to establish a Liverpool City regional focus on cardiovascular research, culminating in the launch of the Liverpool Centre for Cardiovascular Science in September 2018 that will enhance collaborative research in this area. Members of the Green Spaces Interest Group have been working closely with Merseyforest on Forest Schools and the Nature 4 Health project about the Natural Health Service (<http://nature4health.impacts.report/>). This group has also taken an interest in engagement programmes; one internally looking at developing and optimising the use of green space around the campus to enhance the wellbeing of staff and students, and one with Alder Hey around developing Springfield Park. The Children’s Health Group engage with the Paediatric Medicines Research Unit (PMRU) at Alder Hey and recently held a workshop at Liverpool Woman’s Hospital to develop new collaborations.

****A key driver of the IHR is to understand and address key external research priorities (objectives 3 and 6). This has been achieved by engaging with local NHS trusts via Liverpool Health Partners, and hosting workshops with clinical researchers to spark new ideas and develop collaborative opportunities (figure 5). The research ongoing within the IHR was central to the newly developed LHP strategy which has an increased focus on the health needs of the local population and on prevention and rehabilitation compared to the previous almost exclusive medical focus. Via the IHR, LJMU was included as a partner in the new NIHR Applied Research Centre (ARC) NWC bid that will follow on from the existing CLAHRC.

*Figure 5: Relationship between IHR, Internal LJMU Health Research and external stakeholders*

This will open up more opportunities for applied health research with a focus on the health inequalities of the local population. Many interest group activities are linked to the external priorities, for example of, local NHS trusts such as, LHCH; Merseycare; Clatterbridge Cancer Centre; Alder Hey; and Liverpool Woman’s Hospital, local public health needs and to supporting the wellbeing of LJMU staff and students (objective 5). For example, the IHR has been working with LHP to develop study days for primary and secondary healthcare on the topic of social prescribing either in the community or upon discharge from secondary care.

**PhD studentships** The IHR is now in its 3rd year of annually supporting four Cross-Faculty (EHC and SCI) studentships. These are mainly linked to interest groups priorities, cardiovascular care, forest schools, substance use, mental health etc. Starting in 2019, now that we have a full three year cohort, the IHR will provide additional researcher development support to this group of students and host an annual research seminar session will be held where current IHR-funded PhD students will do an oral (year 3) or poster (year 2) presentation to LJMU staff and postgraduate students and relevant collaborators. The Board is currently exploring whether this could be extended to include other Faculties.

**Events** Each interest group holds an annual meeting or workshop to discuss progress and new collaborations. An additional seven SPARK workshops, including external researchers, have been held over the past two years. The IHR Conference in May 2018, with the theme of highlighting health research and collaboration brought together over 130 academics, clinicians and healthcare professionals to listen to a diverse range of presentations invited guests and LJMU staff and students (objective 6). During the 2017 LJMU Wellbeing week the IHR held a successful interactive health and wellbeing session offering staff and students a free health check to determine ‘how healthy your heart is’ and what individuals can then do to reduce future cardiovascular risk followed by a session of laughter therapy to reduce stress. The branding of health-related research within the IHR enables a visible presence both within and externally to LJMU. For example, by using IHR pull up banners at our internal and external health events and encouraging researchers to use the logo on abstracts, posters slides etc.

**Funding** As a virtual institute, the IHR relies on individual Schools and Faculties to provide staff support and management and research facilities and infrastructure. This means it is difficult to secure data on submitted and successful collaborative funding applications (internal and external) and even more difficult to attribute them directly to IHR activity. A feature within the new electronic grant system will enable researchers to link their funding proposals to the IHR in addition to a school or other research Institute. This should make it easier to obtain more accurate data in the future. A quick review of successful LJMU funding bids showed that health and health related bids typically account for around 25% of total competitive research funding. Some indicative examples of successful bids (2016- 2018) that demonstrate cross School/Faculty working and/or working with external health providers are below.

* The Liverpool CCG funded a project to co-create a sternal wound support device to reduce sternal wound infections in women post cardiac surgery.
* A collaboration with the PMRU at Alder Hey resulted in a successful NIHR Efficacy and Mechanism Evaluation Programme fund for a study on ‘The efficacy and mechanism of surfactant therapy for critically ill infants with bronchiolitis: the Bronchiolitis Endotracheal Surfactant Study. (
* The IPEDS group (received funding from Public Health Wales to investigate SIEDS use in Wales.
* Working with Nature Connected and the LCR, Colm Bowe (NSP) was awarded a NERC Innovation Grant to work with LRC and stakeholders groups including the health sector.
* The Liverpool Clinical Commissioning Group (CCG) funded two Research Capability Funding (RCF) projects in 2016; A Patient & public Involvement study regarding weight management services for pregnant women with obesity and a project entitled ‘Can exercise training reduce the frequency and severity of hot flushes associated with breast cancer treatment?’ (The outcome of a 2018 bid for ‘before and after exercise referral: General Practitioner perspectives and 6-month patient outcomes.’ is still unknown). There is plans for the CCG to give a presentation on RCF to IHR members in 2019 to demonstrate its relevance to potential NIHR bids.
* International health research funding has also increased, with, for example, a > €4M collaborative bid on ‘Integrating and decentralising diabetes and hypertension services in Africa’ with LSTM and a British Academy award to generate evidence on ‘Dignity Without Danger: Collaboratively Analysing Stigma and Taboos to Develop Innovative Strategies to Address Menstrual Exclusion in Nepal’.
* Cross Faculty collaboration between PHI and RISES provided the expertise required for a Society for the Study of Addiction (SSA) funded PhD studentship on ‘Psychosocial interventions for smoking cessation in substance misuse treatment services’.

**Outputs** It has proved difficult to assign outputs as directly evolving from IHR activities and relationships. Especially as authors tend not to provide multiple affiliations. Appendix 1 includes a small selection of outputs (2016-2018) that demonstrate the internal and external collaborations of a selection of IHR members.

**Appendix 1: A selection of IHR outputs**

Ainscough, L.P., Ford, J.L., Morecroft, C.W., Peak, M., Turner, M.A., Nunn, A.J., Roberts, M. (2017) Accuracy of Intravenous and Enteral Preparations Involving Small Volumes for Paediatric Use: A Review. Eur. J. Hosp. Pharm., 25, 2: 66-71

Birtwistle, S.B., Ashcroft, G., Murphy, R., Gee, I., Poole, H., & Watson, P.M. (2018). Factors influencing patient uptake of an exercise referral scheme: a qualitative study. Health Education Research. Advance online publication. doi: 10.1093/her/cyy038

Buckley, B.J.R., Thijssen, D.H.J., Murphy, R.C., Graves, L.E.F., Whyte, G., Gillison, F.B., Crone, D., Wilson, P.M., & Watson, P.M. (2018).  Making a move in exercise referral: co-development of a physical activity referral scheme. Journal of Public Health.  Advance online publication. doi: 10.1093/pubmed/fdy072

Chalmers, C., Hurst, W., Mackay, M., Fergus, P., (2018) Identifying Behavioural Changes for Health Monitoring Applications using the Advanced Metering Infrastructure, Taylor and Francis Behaviour & Information Technology (accepted)

Ennis, S., McGregor, G., Shave, R., McDonnell, B., Thompson, A., Banerjee, P., Jones, H., (2018). Can a low frequency electrical muscle stimulation intervention improve endothelial function in advanced heart failure patients? European Society of Cardiology Heart Failure (in press).

Gibson, B., Umeh, K.F., Newson, L., Davies , I.G., (2018) Efficacy of the Best Possible Selves Protocol for Managing the Emotional Aspects of Diabetes Self-management: A Sequential Exploratory Mixed-Methods Approach. Journal of Health Psychology. (in press)

Gjuladin-Hellon, T., Davies, I.G., Penson, P., Baghbadorani, R.A., (2018) Effects of carbohydrate restricted diets on low density lipoprotein-cholesterol levels in overweight and obese adults: a systematic review and meta-analysis of large randomised controlled trials of at least 6 months. Nutrition Reviews. (accepted)

Longworth, H., McCallin, K., Narayanan, R.P., Turner, M.A., Quenby, S., Rycroft, D., Charnley, M., Abayomi, J.,Topping, J., Weeks, A.D. and Wilding, J.P., (2017) Screening methods for obstructive sleep apnoea in severely obese pregnant women. Clinical Obesity 7, 239–244.

Madathilethu, J., Roberts, M., Peak, M., Blair, J., Prescott, R., Ford, J.L. (2017) Content uniformity of quartered hydrocortisone tablets in comparison with mini-tablets for paediatric dosing. BMJ Paediatrics Open 2:e000198. [doi:10.1136/bmjpo-2017-000198](http://doi.org/10.1136/bmjpo-2017-000198)

Penson, P., Long, L., Howard, G., Howard, V.J., Jones, S.R., Martin, S.S,. Mikhailidis, D.P., Muntner, P., Rizzo, M., Rader, D.J., Safford, M.M., Sahebkar, A., Toth, P.P, Banach, M., (2018) **Associations between cardiovascular disease, cancer and very low HDL cholesterol in the REasons for Geographical And Racial Differences in Stroke (REGARDS) study.** Cardiovascular Research (in press)

Richey, R.H., Hughes, C., Craig, J.V., Shah, U.U., Ford, J.L., Barker, C.E., Peak, M., Nunn, A.J., Turner, M.A., (2017) The use of drug manipulation to obtain doses required in paediatric practice: a systematic review, Int. J Pharm., 518, 155-166

Shelley, J., Fairclough, S.J., Knowles, Z.R., Southern, K.W., McCormack, P., Dawson, E.A., Graves, L.E.F., Hanlon, C., (2018) A formative study exploring perceptions of physical activity and physical activity monitoring among children and young people with cystic fibrosis and health care professionals BMC Paediatrics, 18:335

Trapasso, E., Knowles, Z., Boddy L., Newson, L., Sayers, J., Austin, C., (2018) Exploring Gender Differences within Forest Schools as a Physical Activity Intervention Children , 5(10),

Van Miert C., Fernandes, R.F., Eccleson, H.,  Bedson, E., Lane, S.,   Peak,M.,   Thorburn, K.,  Compton, V., Woolfall, K., Lacy, D., Williamson, P., McNamara, P.S., (2018) Non-invasive ventilation for the management of children with bronchiolitis (NOVEMBR): a feasibility study protocol. Trials, 19:627 2018