

## Impact template (REF3a)

<b>Institution:</b> London Metropolitan University		
<b>Unit of assessment:</b> UoA 3		
<p><b>Context</b> - During the period 2008 to 2013, the submitting Unit, which comprises of Cellular and Molecular Immunology Research Centre (CMIRC), Public Health Nutrition (PHNRG), Molecular Systems for Health (MSHRG) and Lipidomics and Nutrition Research Centre (LNRC) has conducted focussed applied and translational investigations designed to promote human health, prevent infectious and chronic diseases, and innovate novel treatments and a new delivery mode for established drugs. Some of the studies which we undertook during the aforementioned period had measurable non-academic impacts. While the impact of the others is yet to be fully realised. Regardless of the impact, the potential non-academic benefits and audiences of the research work of each group are distinct.</p>		
<b>Research Group</b>	<b>Type of Impact</b>	<b>Beneficiaries/Audiences</b>
CMIRC	Health & welfare	General public – prevention and treatment of infectious and chronic diseases.
PHNRG	Health & welfare Practitioners & services	Overweight & obese children and adults at high risk of morbidity. Health care practitioners (school & diabetic nurses, dietitians and health care epidemiologists).
MSHRG	Health & welfare Practitioners & Services  Public policy & services  Commercial	Users of traditional medicine. Professional standards- Standardisation & quality control of herbal medicine based on chemical and metabolic finger print. Pharmaceutical regulatory authorities – Licensing and regulation of Chinese herbal medicine. Pharmaceutical industry – nanomedicine based drug delivery.
LNRC	Health and welfare  Practitioners & services  Public policy & services  Commercial	Pregnant women with diabetes & preeclampsia, children with behavioural and developmental disorders (autism & ADHD) & multiple sclerosis and sickle cell patients. Nurses & doctors of sickle cell, multiple sclerosis and diabetic & pregnancy clinics. Health ministry – policy debate and improved treatment of patients based on research evidence. Improved omega 3 fatty acid formulation.
<p><b>b. Approach to impact</b> – The submitting Unit is conscious that proactive consultations and regular engagement with user groups (patients, health professionals, policy makers, industry and other societal stakeholders) are critical for achieving academic, economic and societal impacts. Consequently, various approaches are employed to develop, promote and retain working relationships with these groups. These include:</p> <ul style="list-style-type: none"> <li>• Undertaking collaborative research projects with small and medium enterprises (SME). The collaborations usually involve the use of specially formulated product by an SME for research. The Unit collaborated with Efamol/Wessen International, UK (sickle cell, refractory epilepsy), Vifor Pharma, Switzerland (Diabetic pregnancy, autism and attention deficit hyper activity disorder), Seven Seas Ltd. UK (nutrition and cognitive function in school children), Tanita EU (<i>Obesity</i>) and others.</li> <li>• Conducting health related studies of special interest for Medical Charities registered in</li> </ul>		

the United Kingdom or other European countries. Some of these are: Letten Foundation, Mother and Child Foundation and Sir Halley Stewart Trust (*Diabetic pregnancy and birth outcome*), Down Syndrome Research Foundation (*Fatty acid-metabolism disorder in Down syndrome*) and North and Central London Primary Health Trust (*Obesity*).

- Forging collaborative working relationships with research groups within the National Health Service who have ready access to patients. Research members of the Unit have maintained long-term collaborations with Newham General University Hospital and Chelsea and Westminster Hospital (*Intervention study in diabetic pregnancy*), Institute of Psychiatry (*Intervention study in children with behavioural disorders*).
- Promoting international collaborations by entering a memorandum of research agreement (*Ministry of Agriculture and Fisheries Wealth, Oman; University of Khartoum., Medical School, Sudan*) and playing host to guest researchers (n=10).
- Embedding medically qualified PhD students (8) and research nurses (2) in translational research involving patients to enhance interactions with participants and hospital-based health professionals.

The Faculty enables non-academic and academic impacts by providing free access to the state-of-art-instruments, "Obesity Clinic", "Health and Wellbeing Centre" and "Fitness Assessment Centre" of the University. It underwrites the costs of technical support, and the maintenance and replacement of instruments. In addition, funds are made available to research staff to disseminate their research findings and its impact at major international meetings, and to organise a conference in London Metropolitan University.

**Sponsorship of international conferences** (*venue, catering and printing of abstract book or conference programme and some funds to cover the expenses of key speakers*)

- "Microvesiculation and disease", London Metropolitan University [13-14 September 2012]. *It was hosted to bring together researchers in biomedicine to discuss the burgeoning field of microvesicles and exosomes. One of the outcomes of the conference was the submission of a joint research proposal to the EU under the Marie Curie fellowships: Industry-Academia Partnerships and Pathways. CPD accredited conference.*
- "A Celebration of DHA: Discovery, Achievement and Challenges for Global Health 40 years on", Royal Society of Medicine. [26-27 May 2010]. *Organised in recognition of the contributions of LNRC to omega-3 fatty acid research. The conference was opened by Professor Malcolm Gillies, Vice-Chancellor of London Metropolitan University.*
- "Intervention Strategies to Challenge the Rise in Mental Ill Health", London Metropolitan University [September 8-9, 2009]. *This conference resulted from a collaborative research on ADHD and other Developmental disorders between LNRC, and the Institute of Child Psychiatry (London, UK), Department of Child Psychiatry, University of Warsaw (Poland), Letten Foundation (Norway, Vifor Pharma (Switzerland) and others.*
- "The Role of Essential Fatty Acids in Paediatric Nutrition", London Metropolitan University, [September 9-10, 2008]. *The aim of this RCP accredited conference was to present research findings of LNRC and others and to discuss the prevailing knowledge about the role of essential fatty acids in maternal health, and foetal and child growth and development.*

**c. Strategy and plans** – Since the last research assessment period, one of the goals of this Institution has been to develop and promote high quality research that can have discernible and significant positive benefits for health, society and economy. This is being achieved by:

- Promoting and sustaining mainly, but not exclusively, a world class applied and translational research. (Trial registrations - [ISRCTN68997518](#); [ISRCTN80844630](#); [ISRCTN93233285](#); <http://www.controlled-trials.com/ISRCTN20233876/>)
- Encouraging the research groups to engage with private and charitable organisations and other stake holders. This is vital for identifying health priorities and establishing partnership.
- Enabling staff to work on multi-disciplinary projects with researchers in centres of

international excellence (National Institute of Health, USA; Weizmann Institute of Science, Israel; Cornell University, USA; Imperial College, Institute of Child Psychiatry, London, etc.)

- Offering PhD fellowships for promising graduates to work on projects with potential impacts. Eleven PhD fellowships were awarded during this assessment period.
- Providing advice on research fund raising, commercial viability of ideas, intellectual property rights and communications and public relations.

#### **d. Relationship to case studies**

**Case Study 1** (*Novel Omega 3 fatty acid therapy for sickle cell disease*) – The idea for the research which led to the impact reported in case study 1 was conceived by Professor Kebreab Ghebremeskel (London Metropolitan University). However, there was continuous engagement and consultation between the collaborators throughout the duration of the study (i.e. study design to dissemination). Consultation meetings were held with the patients prior to the initiation of the study and dissemination of the findings. Briefly, the approaches were:

- The feasibility of conducting the study in Khartoum (Sudan), requirements (funds & staff) and related issues were discussed with Drs Bakhita Attllah, Haj Azan and Zahir Hassan (*Sickle Cell Referral Clinic, Faculty of Medicine, University of Khartoum, Sudan*)
- A meeting was held with Mr Peter Clough and his colleagues (*Efamol Ltd., UK*) to confer about a new formulation of omega 3 fatty acid capsules for the study.
- Dr Ahmed Daak, a medically qualified young Sudanese, joined the investigating team and registered for a PhD with London Metropolitan University (June 2008)
- Meeting with patients and staff of the Sickle Cell Referral Clinic to explain the purpose of the study and its potential health benefits (October/ December 2009)
- Implementation of the randomised, double-blind, placebo-controlled intervention study with new omega-3 formulation and data collation and analysis (February 2009 – March 2012).
- Interim analyses of efficacy data presented at the 9<sup>th</sup> Congress of the International Society for the Study of Fatty Acids and Lipids (Maastricht, May 29/June 2, 2010)
- Findings published in *American Journal of Clinical Nutrition* and selected highlight research of the month {January 2013; 97 (1):37-44}.
- An expert committee set up by the Ministry Health of Sudan to evaluate the findings of the study recommended the new therapy should be incorporated in the management of sickle cell disease in a policy report dated December 20, 2013, and the Ministry has accepted the recommendation.

**Case Study 2** - (*Childhood obesity assessment – influence on policy, practice and public perception*) - This case study was initiated and implemented by Professor David McCarthy (London Metropolitan University). The key users include clinical and public health staff across a number of primary care trusts. The approach followed in forging relationships with users and opinion formers were:

- Working with the Child Growth Foundation to produce the clinical assessment charts
- Serving on the Islington Primary Care Trust obesity steering group
- Serving on the City & East London Obesity Strategy Group
- Delivering teenage weight management services for Islington Primary Care Trust
- Working with industry (Tanita) to develop novel children's growth charts together with consumer/domestic versions
- Working with their public relations company (Decent Exposure Media Relations) to publicise the work to the press and consumers
- Working with health journalists and major national newspapers and magazines to raise awareness of the work generated from this unit.
- Delivering lectures at practice-based conferences