

MEDICINES OPTIMISATION INNOVATION CENTRE (MOIC)

Annual Report 2016/2017

Context

Medicines are the most common medical intervention used in the health service with an annual expenditure of over £550M. In comparison with other UK countries the volume and cost of medicines used per head of population in Northern Ireland is high. With an ageing population and a rising number of people with long term conditions, demand is expected to increase. Given the critical importance of medicine in what the health service delivers to patients, the Department has developed the Medicines Optimisation Quality Framework so that patients and healthcare professionals can work together to make the most of their medicines.

One of the key components of the Framework was the establishment of the regional Medicines Optimisation Innovation Centre (MOIC), which was formally launched in October 2015. The key aim of MOIC is to work towards better patient outcomes by initiating, developing and sharing best practice with regards to patient use and this is achieved via the following primary activities:

1. Developing a systematic approach to finding and testing solutions for the HSC.
2. Combining strengths in clinical pharmacy, pharmacy practice, research and service development with technology and business acumen
3. (a) Developing a medicines optimisation network, linking with the HSC and other life science networks and innovation centres in NI and Europe

(b) Support knowledge sharing both with the HSC and wider networks and the development of collaborative working partnerships and joint working arrangements between participants.

MOIC Workstreams

In addition to work around Infrastructure, communications & marketing, MOIC activity is split across four workstreams, namely:

- Focus on needs of patients and Northern Ireland population
- Accelerate the adoption of innovation into practice to improve clinical outcomes and efficiency
- Build a culture of partnership and collaboration
- Make a meaningful contribution to the Northern Ireland economy

This report will describe the key achievements in these areas during 2016/2017.

Infrastructure, Communications & Marketing

Funding was secured for the appointment of 3 WTE Programme Managers. A total of four positions have been created (2 full time programme managers & 2 split between the MOIC and clinical pharmacy teams). Interviews for these posts were held on 16.3.17. Funding has been secured for a link pharmacist for MOIC at each of the other 4 Trusts. The position has been filled at the WHSCT. In order to accommodate new staff, work has been undertaken to convert space within Bretten Hall to new office space.

During the year, the NHSCT appointed an Innovation and Quality Improvement (IQI) Lead, whose scope of work includes the support of innovation with MOIC. Staff at MOIC liaise regularly with the IQI lead and the work of MOIC is fully integrated with the approach to IQI, as medicines optimisation and use is one of the four strategic priority areas of the Trust IQI Strategy launched in March 2017.

During the year, work continued on the development and population of the MOIC website. In addition, key MOIC collateral was developed including a 2 minute MOIC animation and a MOIC leaflet

The MOIC team have attended a range of conferences and workshops across the UK to assist with the promotion of MOIC and there is ongoing dissemination by the International Coordinator in Europe including participation in a number of EU Twinning events.

Results from specific projects have been disseminated through a variety of means including the publication of papers, attendance and presentations at a range of conferences. In addition, the team jointly organised a showcase of research and service development relating to elderly care initiatives as part of the International Day of the Older Persons celebration in September 2016. The event held on 28.9.16, was attended by around 100 delegates and included a number of presentations and some 30 posters/stands. A Mental Health day was organised in conjunction with Sunovion and Pharmacy Management on 12/10/2016 and attracted over 90 attendees. A list of publications and presentations is included in Annex A.

In recognition of the growing need for communication and marketing expertise within MOIC a job description for a communications officer has been drafted. It is hoped that funding will be secured to permit an appointment to be made.

Focus on needs of patients and Northern Ireland population

When in hospital, it is likely that changes will be made to medications. The Post-discharge from hospital follow-up study, aims to support patients who are on multiple medications once they are discharged from hospital. Patients in the study (n=211) were prescribed 7 or more medications and were followed up by a clinical pharmacist by telephone at 5, 30 and 90 days post discharge. Initial results from the project have indicated that this can help prevent patients needing to be readmitted to hospital. The full results from this study are being analysed with assistance from researchers at the Queen's University of Belfast.

In primary care, a project involving GP practices in 4 regions (NI, North West England, Wessex and East of England) is underway. This project is being carried out under joint working arrangements with the ABPI and is being conducted with assistance from researchers at the Queen's University of Belfast. In each practice, a clinical pharmacist is managing the medicines of patients who are at high risk of complications and patient recruitment will continue until end of June 2017.

In order to aid patient flow through the hospital, a pilot of a Doctor Light Discharge scheme was carried out on the care of the Elderly/Stroke ward at the NHSCT. The pilot indicated that the pharmacy team could be more involved in the discharge processes which enable patients to leave hospital more quickly. The project won best poster at the Hospital Pharmacy Europe Conference in November 2016, and will be published in the Hospital Pharmacy Europe Journal. Plans are underway to carry out a larger test of this scheme in both the NHSCT and the SHSCT. In the SHSCT this will be undertaken by 3 discharge pharmacists, who are expected to take up positions in April 2017.

Work has been undertaken with the HSCB on the evaluation of 3 service development projects namely:

- The roll out of GP practice based pharmacists
- The establishment of a benzodiazepine reduction programme in the NHSCT area
- Novel emergency supply arrangements for medicines in primary care

Accelerate the adoption of innovation into practice to improve clinical outcomes and efficiency

Work continues on the use of secure analytic tagging with commercial partner Healthcare Analytics. A proof of concept pilot has been completed and a prototype of the application (capable of running on a range of devices) has been built. Using the technology, it is possible to track medical equipment as it moves through the hospital. This can be used to ensure that assets can be found and to record cleaning and maintenance of medical equipment. A full pilot of use of the technology on beds and mattresses is being planned and further applications, for example, tracking laboratory samples and use of equipment in domiciliary care settings are being considered.

Under the Small Business Research Initiative (SBRI) scheme, commercial companies work closely with Health Service Trusts in order to find new solutions to problems. Two Phase 1 SBRI schemes were undertaken during the year:

- SBRI Home is considering enhanced domiciliary care. Five phase 1 projects were approved (1 per Trust). It is anticipated that 2 of the projects will proceed to Phase 2 during 2017/18. In NHSCT work was undertaken with PillPacPlus Limited.
- SBRI Fast, which considers hospital pharmacy staff skill-mix, was re-advertised with a closing date in November 2016. Three projects were

approved with 3 commercial companies (Healthcare analytics, Anabias Ltd. & Analytic engines).

A pilot study on a Topical Negative Pressure system has been completed with a commercial partner (Iskus Health Ltd / Cardinal). These systems are used to assist with wound healing in difficult to manage wounds. This was presented at the International Wound Conference (Harrogate) and was presented at the USA Wound Conference (San Diego) in November 2016.

MOIC have worked in the past on the development of a number of procedure packs (Blood Culture packs, Lumber Puncture Packs, Peripheral Line Packs, HICC/PICC Lines. Appropriate revenue sharing agreements have now been negotiated and are awaiting signature. Further potential packs are under discussion, including one for use in naso-gastric feeding that was proposed at the Trust Quality day.

Data collection for a one year follow up of an HSC R&D Division Fellowship is almost complete. The study is investigating antibiotic cycling in prevention of HCAI. Data analysis will be completed when the researcher returns from a period of maternity leave.

Build a culture of partnership and collaboration

Staff in MOIC work closely with a range of partners including those in other health service organisations, universities and commercial companies. During the year, members of the MOIC contributed significantly to the bid from NI for reference status under the European Innovation Partnership (EIP) Active and Healthy Ageing (AHA) and the highest award (four stars) were awarded to NI. As a result of this award, 3 bids under the EIP- AHA reference site Twinning programme were successful. This award provided funding for teams from North West England, Olomouc (Czech Republic) and Catalonia to learn about medicines optimisation from teams in NI. Members of the MOIC team represented NI at the EIP-AHA Conference of Partners in Brussels in December 2016

A team from NI continued to be involved in the EU funded SIMPATHY 3rd Health programme grant. In this project 10 teams from across Europe are working together to help promote and support innovation across the EU in the management of appropriate polypharmacy and adherence in the elderly. Members of the team have contributed to all work packages and attended consortium meetings in Portugal & Poland. A high level conference will be held in Brussels in April 2017 before the final consortium meeting in Belfast in May 2017. As a further development, a team from NI will be visiting Catalonia to share learning from the NI SIMPATHY case study in April 2017.

A key component of MOIC work is knowledge translation via the hosting programme. Under this programme, visitors are welcomed to NI for periods lasting between 1 day and 5 months. During 2016/17 these visits included:

- 2 pharmacists from the Northern Trust visited Sittard (Netherlands) under an exchange programme in May 2016. In return 2 pharmacists from Sittard visited NI in February 2017
- The first cohort of pharmacists under the joint MOIC / UU programme for Egyptian pharmacists visited NI in August 2016 for a period of 2 weeks.
- One pharmacist visited the NHSCT during October 2016 and 2 pharmacists visited during February/March 2017 under the MOU with the Spanish Hospital Pharmacists Association.

An undergraduate student from Sweden who is undertaking a project in the area of in-patient pharmacy monitoring commenced a visit in January 2017 for a period of 5 months.

Work was undertaken to finalise a Memorandum of Understanding (MOU) with the Queen's University of Belfast. It is hoped that this will be completed and signed during April 2017.

Links with Pharmacy Management as a partner organisation have been established. As well as attending a number of Pharmacy Management National Workshops, members of the MOIC have established an all-island clinical leadership in pharmacy programme. The programme was launched on 8th March 2017 and the first cohort will commence training in 2017. Members of the MOIC team are also involved in the planning for a Celtic MO conference and the first planning meeting was held in March 2017 with a view to running the conference during 2017/18.

The inter ecosystem Medicines Optimisation Working Group in the European Connected Health Alliance has been established and discussions are in train on the way forward. The group had a stand at in Brussels during the EIP –AHA conference (December 2016) and the next conference call for the group will be held in April 2017. In addition, MOIC presented at the first Ireland - Northern Ireland joint ecosystem meeting (UU, December 2016).

Initial discussions regarding the Development of a formal relationship with International Healthcare Institute (IHI) have been held and a number of teleconferences between MOIC, IHI and DoH have taken place.

A workshop between the MOIC, ICPs and GP Federations was held in February 2017 with a view to developing an integrated locality based, medicines optimisation model for reform in the NHSCT area. It was agreed a specific project involving these partners would be scoped.

Make a meaningful contribution to the Northern Ireland economy

StepSelect is a method of selecting medicinal products for procurement based on safety and clinical efficiency. Work has been undertaken a number of countries across Europe who are interested in this system. In particular:

- A pilot study is underway in the use of StepSelect in low molecular weight heparins. One hospital in Poland (Gdansk) is involved and a team from MOIC to travelled to Poland in January 2017. This has been used initially

as formulary tool but will now be used to undertake an EU procurement. The Polish partners have expressed an interest in extending the pilot into new therapeutics areas including wound dressing, direct oral anticoagulants (DOAC's), sutures and respiratory products.

- Two members of the MOIC team visited Serbia in September 2016. The Centre in Belgrade has a focus on Rheumatology and are therefore interested in biologics. The selection matrix has been completed by a number of clinicians and this will be followed for a potential procurement.
- Colleagues in Georgia, are interested in MOIC carrying out a pharmacy system scoping exercise. The International Co-ordinator visited Georgia in February/March 2017 in order to scope their requirements.

The DoH European Engagement Forum was established in February 2017 with MOIC as a member. Under this forum a number of work streams will be progressed including gaining EU funding and building partnerships with key EU economies. Of particular interest to MOIC is the objective to build links with a number of countries e.g. Georgia and Ukraine as MOIC have existing links in these areas.

Work was completed with the Pharmacy Distance Learning Centre at Queen's regarding the development of a new module as part of the current MSc in Clinical Pharmacy. This Masters programme is undertaken by students from across the world.

The Director of MOIC visited Norway during March 2017 to deliver a number of keynote addresses, and to develop further collaboration through attendance at relevant meetings. MOIC have been nominated as a peer reviewer for the potential new Norwegian Advisory Centre for Clinical pharmacy to be based in Trondheim In addition MOIC are now included in a bid with Uppsala University Hospital and the University of Tromso to the Norwegian Research Council for up to 15M Krone looking at an Australian medicines homecare model. An MOU is under preparation with the University of Oslo.

Finally work is ongoing with a number of software companies in order to develop software solutions for medicines management in line with the Medicines Optimisation Quality Framework and e Health strategies.

Financial Report 2016/17

The Medicines Optimisation and Innovation Centre has reported an overall surplus of £99k and has £102k of deferred income from commercial funding carried forward into 2017/18. An income and expenditure report is included at Annex B.

Annex A: Dissemination activity

Papers

Conlon Bingham G, Aldeyab M, McElney JC, Scott M, Kearney P, Baldwin N, Green C & Knight R. Implementing an infection control intervention. Hospital Pharmacy Europe, 2016; 82 PP19-22

EF Ruth Miller, Carmel M Darcy, Anne BM Friel, Michael G Scott, Stephen B Toner. Consultant pharmacist case management of older people in intermediate care: a new innovative model. European Journal for Person Centered Healthcare, 2016; 4(1): PP1-7

McKee H, Miller EFR, Cuthbertson J, Scullin C, Scott MG. Nursing Home Outreach Clinics show an improvement in patient safety and reduction in hospital admissions in residents with chronic conditions. European Journal for Person Centered Healthcare, 4(4): PP650-655

Alvaro-Alonso EA, Aldeyab M, Ashfield L, Gilmore F, Perez-Encinas M. International Centres of Excellence in Hospital Pharmacy; a SEFH new initiative; the role of the clinical pharmacist in the hospital antibiotic stewardship in Northern Ireland. Farmacia Hospitalaria, 2016; 40(4) 233-236

Aldeyab M, Scott M, Kearney P, Magee F, Conlon- Bingham *et al.* Point prevalence survey of antibiotic use and HAIs. Hospital Pharmacy Europe, Winter 2016 84. PP 41-50

Stewart D, Mair A, Wilson M, Kardas P, Lewek P, Alonso A, McIntosh J, MacLure K and SIMPATHY consortium*. REVIEW: Guidance to manage inappropriate polypharmacy in older people: systematic review and future developments. Expert opinion on drug safety. 2016 <http://dx.doi.org/10.1080/14740338.2017.1265503> (*Carlos Codina, Glenda Fleming, Mary Geitona, Ulrika Gillespie, Cathy Harrison, Maddalena Illario, Moira Kinnear, Fernando Fernandez-Llimos, Thomas Kempen, Joao Malva, Enrica Menditto, Nils Michael, Claire Scullin, and Birgitt Wiese)

Scott M & Fleming GF. Medicines Optimisation Innovation Centre. Journal of medicine optimisation, 2017; 3 PP9-12

Mair A, Fernandez-Llimos F, SIMPATHY Consortium. Polypharmacy management programmes: the SIMPATHY Project. Eur J Hosp Pharm. 2017 24. (1)

Conference presentations and posters

Authors	Title	Poster or oral	Conference/Meeting
Scullin C, Fleming GF, Scott M, Harrison C,	Polypharmacy & Adherence: Key components of integrated care – The case of Northern Ireland	Poster	ICIC conference, Barcelona, May 2016

McIntosh J and SIMPATHY Consortium			
Magee J, Gill D, Fleming GF, Haughey S	Evaluation of a Doctor Light Discharge Service implemented by a Pharmacist Independent Prescriber	Poster	Hospital Pharmacy Europe, London, November 2016
McCrudden M, Gill D, Fleming GF, McCaw B	The Impact of a Pharmacist Independent Prescriber on the Discharge Processes at the Weekend in an Acute Hospital	Poster	Hospital Pharmacy Europe, London, November 2016
Tohill S & Gill D	Enabling technology Assist with Carter	Poster	Hospital Pharmacy Europe, London, November 2016
Abuelhana, A <i>et al</i>	An Analysis of Medicine Reconciliations undertaken from Monday to Friday in a District General Hospital	Poster	Hospital Pharmacy Europe, London, November 2016
Harrison C & Scott M	Four star reference site status; Medicines Optimisation	Oral	1 st Joint Connected Health Ecosystem meeting Belfast December 2016
Scott M	Medicines Optimisation - Why?	Oral	Norwegian Clinical Pharmacy Network Meeting Tromso March 2017
Scott M	Medicines Management to Medicines optimisation	Oral	Norwegian Clinical Pharmacy Network Meeting Tromso March 2017
Scott M	Medicines Management to Medicines optimisation	Oral	Seminar on Clinical Pharmacy in Norway Oslo March 2017
Scott M	Medicines Optimisation and Clinical Pharmacy staff	Oral	Seminar on Clinical Pharmacy in Norway Oslo March 2017

General conferences and workshops to promote MOIC

9 th June 2016	Presentation at e-Health week (Amsterdam)	Mike Scott
12 th July 2016	EIP AHA workshop on A1 day	Frans van Andel
27 th July 2016	Visit from Lilly team.	Glenda Fleming, Anita Hogg & Dianne Gill
4 th August 2016	Presentation to SEHSCT pharmacy department	Glenda Fleming

9 th August 2016	Presentation to Northern ICP	Mike Scott
7 th September 2016	Presentation at the NHS expo (Manchester)	Mike Scott
13 th September 2016	Presentation to Northern LMC	Mike Scott
28 th September 2016	International day of older person showcase	A number of MOIC team members attended and presented
7 th October 2016	Pharmacy Management National Workshop on Diabetes	Linden Ashfield
12 October 2016	Medicines optimisation in Mental Health Showcase	A number of MOIC team members attended and presented
16 th November 2016	Pharmacy Management National Forum, London	Anita Hogg, Mike Scott
29 th October – 2 nd November 2016	ISPOR 19 th European Congress (Vienna)	Frans van Anandel
18 th January 2017	Presentation at SEHSCT	Mike Scott
1 st February 2017	JoMO- UKCPA National Medicines Optimisation in Respiratory medicines Workshop	Anita Hogg
3 rd February 2017	Meeting with Catalan Institute of health (Barcelona)	Frans van Anandel & Anita Hogg
8 th February 2017	Meeting with Czech Ministry of Health	Frans van Anandel
20 th March 2017	IQI Strategy launch	A number of MOIC team members attended and presented

Annex B: Medicines Optimisation and Innovation Centre Income & Expenditure as at 31st March 2017

	Project	Partners	As at 31st March 2017	Deferred Income
			£	£
Deferred Income as at 1st April 2016				
HSC Innovation Fund - B94945				
	Difficile S		14,250	14,250
	Goldshield		2,192	2,192
	Pfizer		-	-
	C-Diff		589	589
	ABPI (Cont of Care)		16,014	16,014
	HSC Innovation		10,929	10,929
MOIC002	Stimulating Innovation Management of Polypharmacy and Adherence in The Elderly	EU Funding	11,143	11,143
MOIC001	GP practice based pharmacist input to medicines optimisation	ABPI	125,000	125,000
Income 2016/17				
HSCB RRL			391,619	
B9R004	Various	SBRI	30,097	
External Funding				
B94545	Difficile S		11,000	11,000
B94545	Hosting Ulster University / NHSCT	University Ulster	4,650	4,650
MOIC005	Cardinal Topical Negative Pressure System	ISKUS LTD, Dublin / Cardinal	21,868	21,868
MOIC007 / B9R004	To give advice on the evaluation of the Palliative Care Clinical Care Project	MacMillan Cancer Support	6,814	6,814
Total Forecast Income as at 31st March 2017				223,271
Expenditure as at 31st March 2017				
MOIC001	GP practice based pharmacist input to medicines optimisation	Academic Health Science Network (AHSN), North Eastern AHSN, Wessex AHSN,	106,250	106,250
MOIC002	Stimulating Innovation Management of Polypharmacy and Adherence in The Elderly	Project being conducted by 10 EU partners	8,535	8,535
MOIC007	To give advice on the evaluation of the Palliative Care Clinical Care Project	MacMillan Cancer Support	6,432	6,432
	MOIC Costs			
	Staffing Costs		388,438	
	Non pay Costs		36,829	
Total Forecast Expenditure as at 31st March 2017				121,217
Surplus / Deficit			Surplus	102,054