

*APPLICATION FOR EXCELLENCE IN TEACHING AND/OR LEARNING SUPPORT BY A
TEAM AWARD 2018*



QUB TEACHING AWARDS

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Dr Maurice Hall and Dr Lezley-Anne Hanna, School of Pharmacy

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1. PREVIOUS TEACHING AWARDS (200 words maximum)

If any of the team members has ever previously won a Queen's Teaching Award, please note the year and category (eg Rising Star, Team etc) below. You should also provide a clear explanation of how the work outlined in this application differs from the work for which the team member(s) were previously recognised. No members of the team should have received a Queen's Teaching Award within the last 3 years.

- 2013 – Team Award (Maurice Hall – lead applicant; Lezley-Anne Hanna – team member)
- 2013 – Student nominated award (Lezley-Anne Hanna)
- 2016 – Student nominated award (Lezley-Anne Hanna)

The team award in 2013 was for work done in a Level 3 dispensing module where authenticity of the teaching approach was recognised. The student nominated awards were for exemplary feedback and inspiring and engaging learners (2013) and for developing a peer mentoring scheme (2016). This current application relates to the development and publication of a mobile app to support over-the-counter consultations i.e. the primary focus is how and why we developed the innovative digital technology.
(99 words)

2. CONTEXT FOR THE APPLICATION (500 words maximum)

Please provide a brief summary of your application and a context for your work. Examples of the information you should include are the subject you teach; the aims, objectives and rationale for the team's approach; the type of teaching activities you are involved in; the number of learners involved, ways in which the team has directly involved students.

Around 57 million annual GP appointments and 3.7 million visits to A&E departments are for self-treatable conditions which costs the NHS billions of pounds⁽¹⁾ and consequently healthcare professionals must encourage and enable people to self-treat minor ailments effectively. As the range of medicines for self-treatable conditions [over-the-counter (OTC) medicines] expands, pharmacists must demonstrate they are competent healthcare professionals who deliver high quality patient care. Unfortunately, secret filming by Which?² has cast doubt on the advice provided by pharmacists and their staff and research conducted on pharmacists revealed that evidence of effectiveness was a secondary consideration for OTC recommendations.⁽³⁻⁷⁾ As pharmacists and educators of future pharmacists, these concerns motivated us develop an app i.e. a digital tool that facilitated evidence-based decision-making in relation to OTC consultations.

A review of the literature showed that medical apps can have positive effects on patient outcomes, including reducing adverse events and length of stay in hospital.⁸ Apps are increasingly seen as valuable tools within healthcare education and practice to aid clinical decision-making and increase knowledge-base⁸, yet there appeared to be none relating to OTC consultations for those studying or working in community pharmacy practice. The use of apps as educational and clinical support tools is perhaps of greatest utility where the area of practice is dynamic and therefore subject to frequent change. This is certainly the case in the module that we coordinate; the Level 4 MPharm module "Responding to Symptoms", where over 100 students learn how to diagnose and manage over 70 common ailments in a simulated community pharmacy setting (with assessment taking the form of one-to-one role plays relating to a patient 'scenario', case studies and multiple choice questions). Product-based safety announcements and changes to clinical condition management are routine, with almost yearly deregulations from 'prescription-only' to 'OTC' medicine status. Hence, while textbooks are available and utilised, the information rapidly becomes outdated - sometimes even before publication. Moreover, resources prepared by reputable health organisations such as the National Institute for Health and Care

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Excellence (NICE) require interrogation and interpretation to put the information into a community pharmacy context, as they are often prepared for other healthcare professionals such as doctors and nurses. There is insufficient time to conduct literature searches or critical appraisal of such information in practice (or in our role-play scenarios in the module, which emulate real-life practice). Hence, our aim was to produce a contemporary and more importantly, updateable resource that would provide pharmacy students, pharmacists and healthcare workers with information they could trust and easily access at the point of care. It was anticipated that developing an app would enhance the student learning experience (given that many students use mobile apps for various reasons on a routine basis) and ultimately enable the public to receive best practice management strategies for self-treatable conditions, leading to increased satisfaction and positive healthcare outcomes with the potential to improve standardisation of care. Students were involved at various stages (outlined in the next section) and the app content adapted in light of their feedback.

(500 words)

3. DISCUSSION SECTION (1700 words maximum) (1690 words, including references)

Please provide clear discussion of how the team works collaboratively and how this collaborative working has been an advantage. How did the team develop?

We jointly coordinate and teach this subject area in the School of Pharmacy and provide expertise to regulatory and professional pharmacy organisations. Between us, we have over ten years' community pharmacy experience and over twenty years' teaching experience. Through conducting research in the area of OTC decision-making (from perspectives of members of the public, pharmacists, pre-registration trainees and their tutors, and undergraduate pharmacy students),³⁻⁷ Lezley-Anne knew what problems existed in practice and how to best address these via the app **content**. Maurice has a keen interest in digital literacies and has participated in various pilots across the University, including the selection of the latest virtual learning environment (VLE). He used his expertise in graphic design and technology for the app **design**. The key to success was to start with an area that we both had valuable insight into, and passion about, and then to identify and utilise each team member's skills to best effect. Both aspects (design and content) were crucial for the success of 'OTC Consult'.

We both had input into all aspects of the app; Lezley-Anne had overall responsibility for content whereas Maurice was responsible for design. Examples of design and content, including therapeutic areas and key headings for each condition, are provided in Figure 1. Design and development of the app required us to be trained in the use of the app content management system (this is outlined later in the context of a challenge). The work also involved peer review and pilot testing prior to release on Android and Apple platforms in 2017. Together we marketed the app and conducted an evaluation six months later. Our research expertise, gained from conducting doctoral and pedagogical work, was invaluable for literature searching and critically appraising gold standard resources, piloting the app, and designing the evaluation questionnaire.

(310 words, including figure legend)

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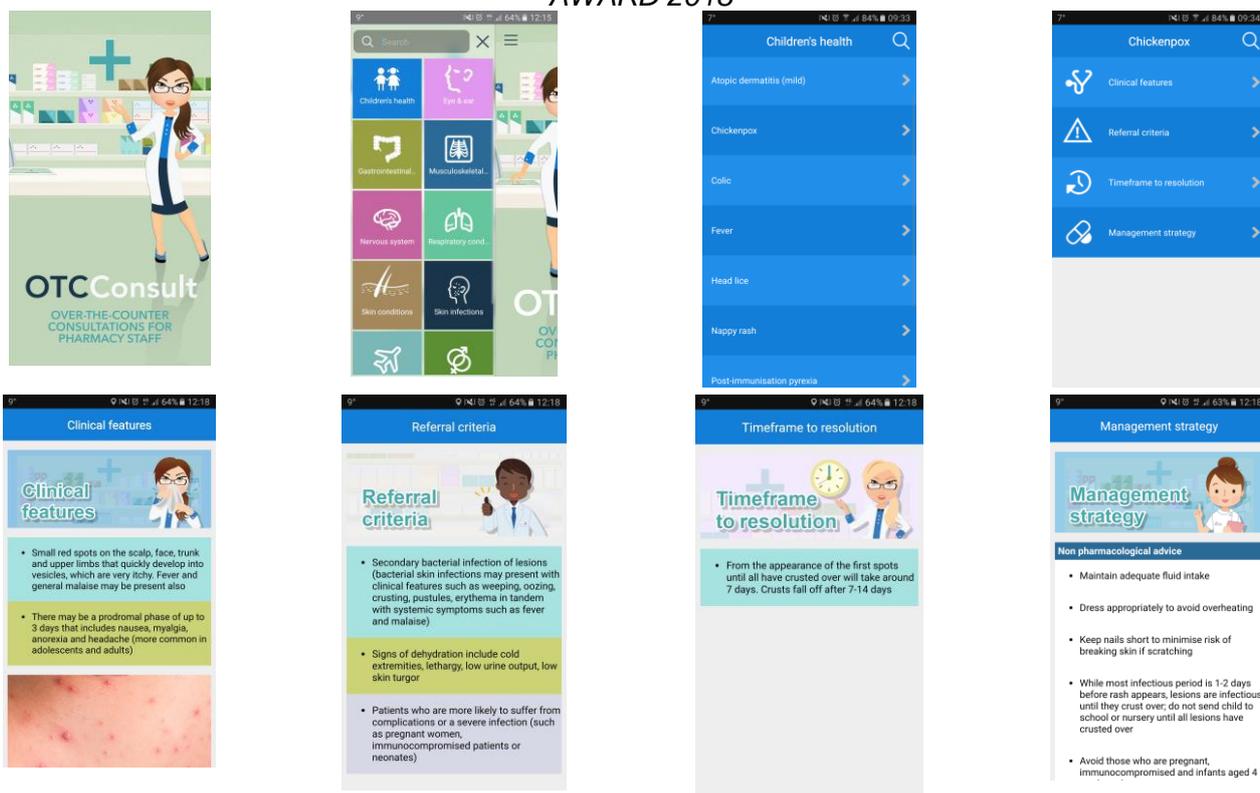


Figure 1: Example screenshots showing the design and content of the app

Please provide discussion on how the team's work addresses one or more of the following themes: Assessment and feedback; retention; employability; staff development; students as partners; developing digital literacies, technology and social media; learning support.

We have addressed various aforementioned themes as outlined below.

- **Digital literacies/technology:** we have *developed* innovative digital technology (an app; OTC Consult), rather than simply *adopting* technology in our own practice. This should be inspirational to other educators in QUB and beyond.
- **Learning support:** our app enables students to get quick and easy access to up-to-date, evidence-based, collated information to support them when learning about the subject material for the first time. Furthermore, in terms of **employability and support**, it aids those working in community pharmacy practice at the point of care and helps ensure that members of the public receive best practice management strategies for self-treatable conditions. It also has the potential to improve standardisation of care.
- **Students as partners:** as so many students regularly use apps, we considered this work to be an ideal and innovative way to enhance teaching. Students participated in the app pilot (use testing) - their feedback centred on including photographs to aid with visual diagnosis of certain conditions and therefore stock images were purchased and a gallery created. More information on recently deregulated prescription-only medicines was sought, so we prepared a separate section relating to these medicines. Conducting the evaluation (involving postgraduate and undergraduate pharmacy students, in addition to pharmacists), revealed that students wanted a self-assessment section within the app to aid with revision, diagnostic testing and preparation for professional examinations. We subsequently added a 'Test Yourself' section. Finally, following

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students' comments in the most recent module review, future plans include providing pertinent information on First Aid.

- **Staff development:** we have developed new skills and hope that our insight encourages others to consider undertaking similar work. We have been invited to meet with a consultant dermatologist (March 2018) to provide expertise on an app he plans to develop and have engaged with staff in the School of Pharmacy (including PhD students) about app development.

(310 words)

Outline the creative way (s) you have addressed a challenge, situation, problem.

We addressed various challenges throughout this project, including the fact that pharmacists and their staff are not readily using an evidence-based approach in practice for OTC recommendations. Additionally, there is an increased emphasis on using digital literacies in higher education teaching yet staff may not possess skills or confidence to develop digital material. This was one of the key challenges for us - we had never developed anything like this before but knew there was a need for an app in education and in practice.

Having secured funding from an external bursary in 2016, we worked with a digital media company to create and launch our app. Training on the app content management system (CMS) was provided by the graphic designer, who also prepared one condition as proof of concept. Our steep learning curve began when we were faced with developing the remainder of the app, including the name, graphics and HyperText Markup Language 5 (HTML5) files relating to 70 conditions and OTC medicines. We sought assistance from a colleague with programming experience and employed software to convert English into HTML. Preparing the content was laborious and therefore we asked a peer to objectively check and review content prior to publication. We sought advice from the University around intellectual property and copyright. The original name 'OTConsult' (i.e. using one 'C' for OTC and Consult) caused confusion around spelling so was changed to 'OTC Consult' to enable effective searching. We deemed it important to pilot the app to address issues prior to launch and, six months after publication, a multi-faceted evaluation was also conducted. For this evaluation, quantitative data was obtained through the CMS and feedback was also obtained via email, the star-rating and reviews posted on Google Play and Apple stores, and comments at conferences. Furthermore, following ethical approval, we invited one hundred people representing different groups within the pharmacy profession in Northern Ireland (pharmacy undergraduate and postgraduate students and community pharmacists) to complete an evaluation questionnaire. We adapted app content in light of the evaluation findings.

(337 words)

Please provide detailed discussion on the outcomes from the team's work and how it has enhanced learning.

The app has had a positive impact on OTC consultations, with reach beyond the University.

External examiners of undergraduate and postgraduate courses have been very positive about it as an educational tool and recommended it to their own students. The MPharm Pharmacy Practice examiner stated it was "a real example of innovation that should be highlighted to the accreditation panel."

Examples of undergraduate quotations showing how it enhanced their learning:

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“Makes it very easy to understand the material”

“Material is in more manageable chunks than the other resources”

“It’s clear and concise, yet offers all the necessary material”

“It’s a logical layout that makes sense when [you’re] considering a consultation with a patient”

“Fantastic content and easy to navigate”

“Extremely useful tool for RTS [Responding to Symptoms] classes. It’s handy, up-to-date...”

Since launch (February 2017), the analytics are:

- Downloads: 3753
- Number of sessions: 45,476 across 60 countries

It has a 5-star rating on Google Play and Apple stores. Examples of user reviews (posted on Google Play and Apple stores) are:

“A really useful app...easy to navigate and it’s great that it’s so up to date. Have already used it with our technicians in a training session...”

“...a super app which is very focussed on supporting pharmacists and the pharmacy team to provide evidence-based and complete patient care.”

The evaluation questionnaire revealed a mean score for ‘usefulness in practice’ of 4.1 (1 ‘not useful’ to 5 ‘very useful’).

Summary feedback (from students and pharmacists, largely obtained via the evaluation questionnaire and user reviews)

- Positive: quirky design (particularly avatars); easy to navigate; quick access to information; information is evidence-based, up-to-date, and relevant; good staff training tool (particularly the photo gallery).
- Negative: requires internet access, limited search capabilities; want more conditions and a section on self-assessment.

(293 words)

Please outline any future plans for development and/or dissemination of the team’s work.

Since the launch in 2017, we have disseminated the work in the following ways:

- It is published (and available free of charge to download) on Apple and Google Play stores
- Having initially given a launch presentation in the School of Pharmacy, we attended the University Digital Literacies conference (2017). These provided opportunities to discuss the app with peers
- We authored an article for Reflections and a paper has been accepted (Dec 2017) by the peer-reviewed ‘European Journal for Patient Centered Healthcare’
- We were invited exhibitors at an ‘Inspiring Change’ healthcare event (2017); subsequently the app was mentioned in the professional body (Pharmacy forum NI) annual report
- The app featured in a popular UK pharmacy publication

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- We recently (2018) won an external eHealth and Innovation in Pharmacy Practice award (which adds more credence to us being educational experts and provided serendipitous exposure)
- Lezley-Anne has disseminated it to the pharmacy team at the University of Leeds, in her capacity as external examiner
- We used social media (School of Pharmacy Facebook and Twitter) and launched our own 'OTC Consult' Twitter account

Future dissemination opportunities include being invited speakers at a pharmacy 'social media and digital technology' training event and a dental conference (March and April 2018, respectively).

Several modifications to the original app have been outlined above (after piloting and the 6-month evaluation). Future plans include providing First Aid guidance and investigating how to have better search functionality. We are applying for more external funding (April 2018) and will continue to include relevant stakeholders in discussions about future developments. As healthcare professionals and educators, we embrace continuing professional development and apply this principle to our app - we want it to evolve and improve.

(281 words)

References

1. Proprietary Association of Great Britain. 2017. Self-care attitudes and behaviours in the UK. <https://www.pagb.co.uk/latest-news/report-self-care-nation-self-care-attitudes-behaviours-uk/>
2. Chemist and Druggist. 2018. <https://www.chemistanddruggist.co.uk/news/3-10-pharmacies-not-giving-recommended-otc-advice-which-claims>
3. Hanna LA, Hughes CM. 'First, do no harm': factors that influence pharmacists making decisions about OTC medication. *Drug Saf.* 2010;33(3):245-55.
4. Hanna LA, Hughes CM. Pharmacists' attitudes towards an evidence-based approach for OTC medication. *Int J Clin Pharm.* 2012;34(1):63-71.
5. Hanna LA, Hughes CM. Public's views on making decisions about OTC medication and their attitudes towards evidence of effectiveness. *Pat Educ Counsel.* 2011;83(3):345-51.
6. McKee P, Hughes CM, Hanna LA. Views of pharmacy graduates and tutors on evidence-based practice in relation to OTC consultations. *J Eval Clin Pract.* 2015;21(6):1040-6.
7. Hanna LA, Hall M, Duffy D. Pharmacy students' use and views on OTC medicines. *Curr Pharm Teach Learn.* 2016;8(3):289-98.
8. Divall P, Camosso-Stefinovic J, Baker R. The use of personal digital assistants in clinical decision making by health care professionals: a systematic review. *Health Informatics J.* 2013;19(1):16-28.

(159 words)