

Virtual Patients for Educating Health Professionals and Patients

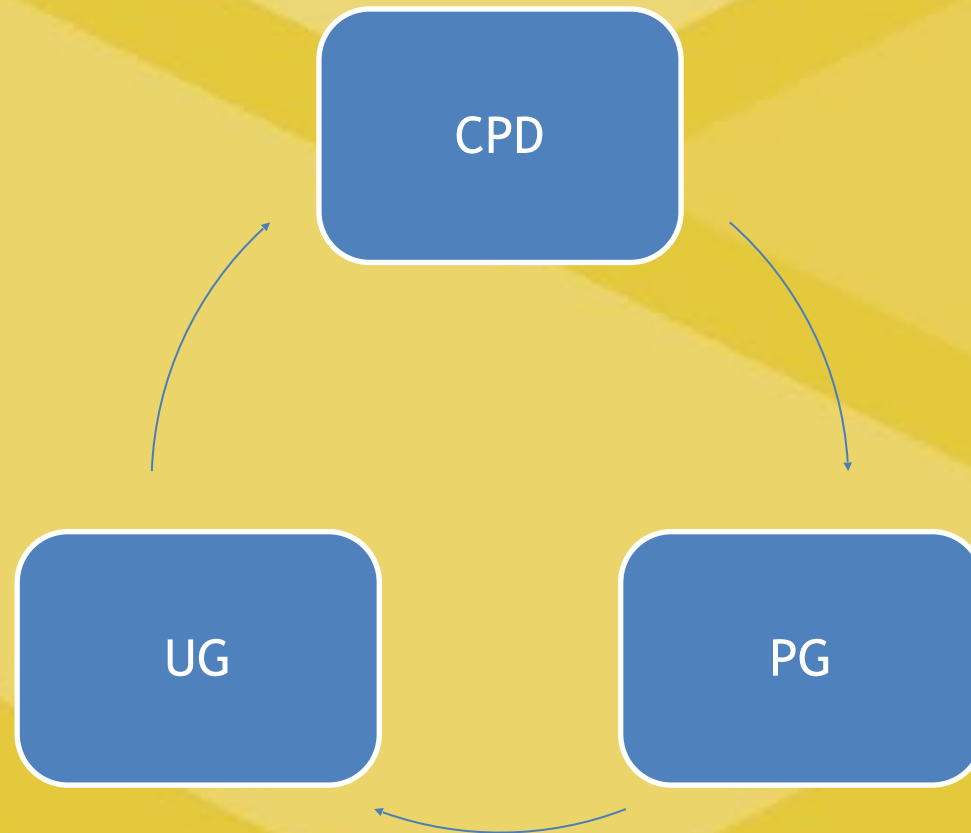
Professor Stephen Chapman
Head of Medicines Optimisation
Keele University

Where is Keele?

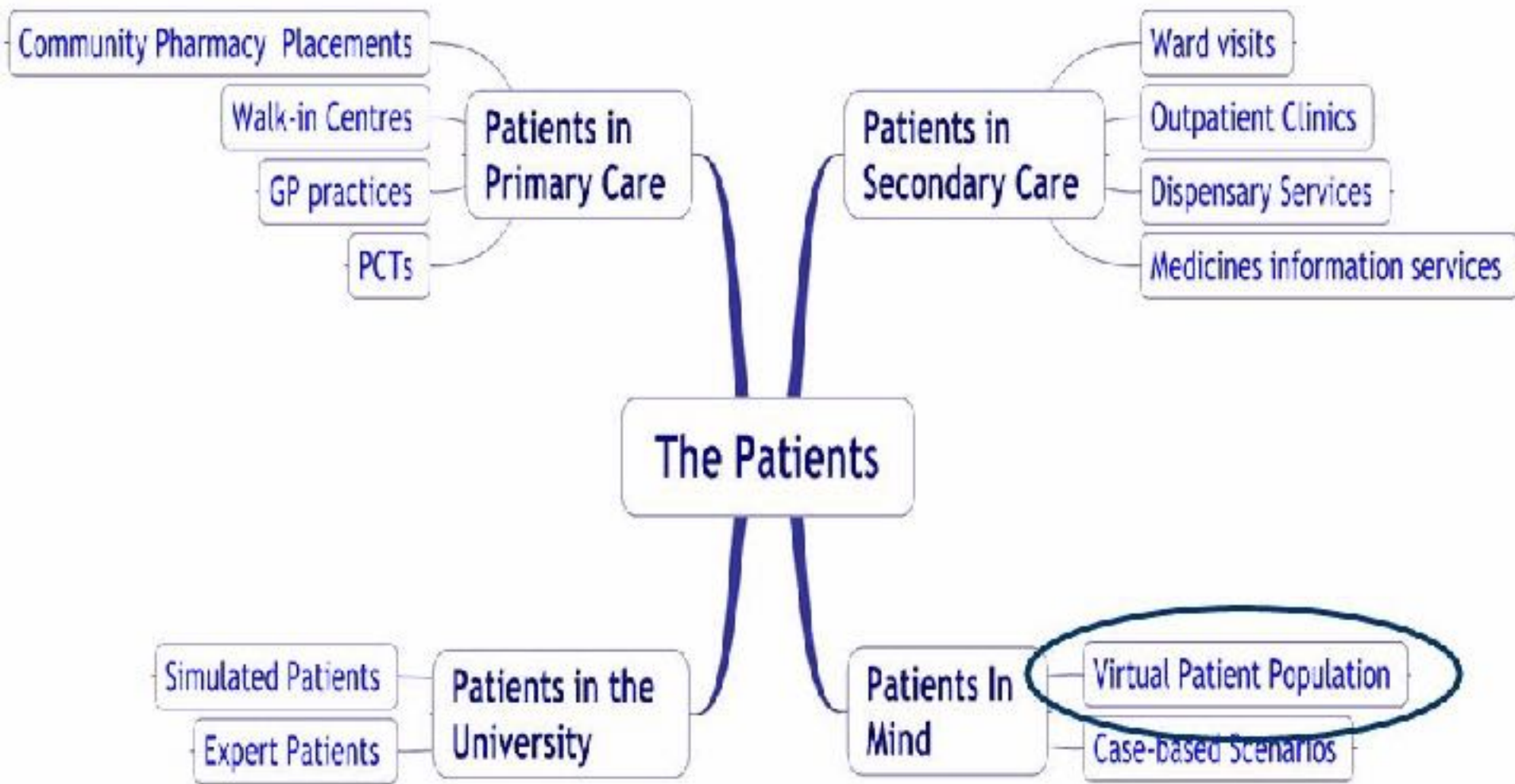
One hour from
Manchester and
Birmingham and 2
hours from central
London



Growing a (teaching/learning) culture within a healthcare profession



The Full Patient Experience



Why use technology in simulation?

Actual & Simulated patients give a 'complete' hands on experience

BUT.....

There are two big challenges

Standardisation

Access

Standardisation

Impossible for actor or patient to behave the same with a large number of students.

Technology doesn't get tired.

Standardisation leads to equity in assessment

Access

**You need to be sure to have
the right patients
with the right conditions
at the right time**

This can be a nightmare.

Technology helps timetabling

Why Avatars ?Why not mannekins?

- Allows learners to examine short and long term consequences of their decisions
 - on the patient
 - the healthcare team
- Concentrates on emotional intelligence and logic -not physical

Freetext

Virtual Patient Scenario

Start

You have 30 minutes to complete this scenario. Patient information can be found by clicking the Information tab. Click START to begin.

MCQ

Virtual Patient Scenario

Start

You have 30 minutes to complete this scenario. Patient information can be found by clicking the Information tab. Click START to begin.



Female, 18-25 yrs
Period Pain
Asthma
Busy Receptionist



Female, 65-80 yrs
Allergic Rhinitis
Chronic Pain
Caring Grandmother



Male, 45-60 yrs
Viral Gastroenteritis
COPD
Impatient GP



Male, 35-40 yrs
Junior Doctor
Hypertension
...



Female, 20-30 yrs
Nurse
Dentists' Assistant
...



Male, 45-55 yrs
GP Commissioner
Hyperlipidaemia
...



Female, 25-30 yrs
Unplanned pregnancy
Chronic Pain
...



Keele
University



Case feedback and discussion



Keele
University



Smiles =learning =success!



**Keele
University**

Proven effect on learning

Pharmacologist used KAVE for teaching 3D structure of kinases

Tested matched cohorts of students with and without KAVE

Those with KAVE experience scored 8% higher on both retention and understanding

Richardson A, Bracegirdle L, McLachlan S I.H, and Chapman S R Use of a Three-Dimensional Virtual Environment to Teach Drug-Receptor Interactions. American Journal of Pharmaceutical Education 2013.: Volume 77, Issue 1, Article 11.



Stoke-on-Trent
Clinical Commissioning Group

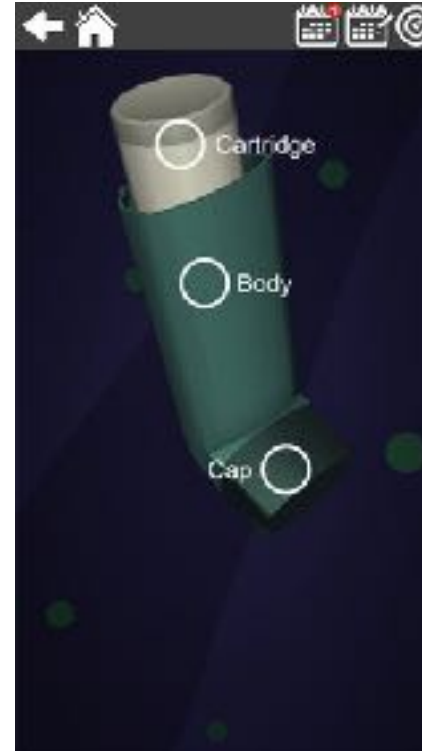
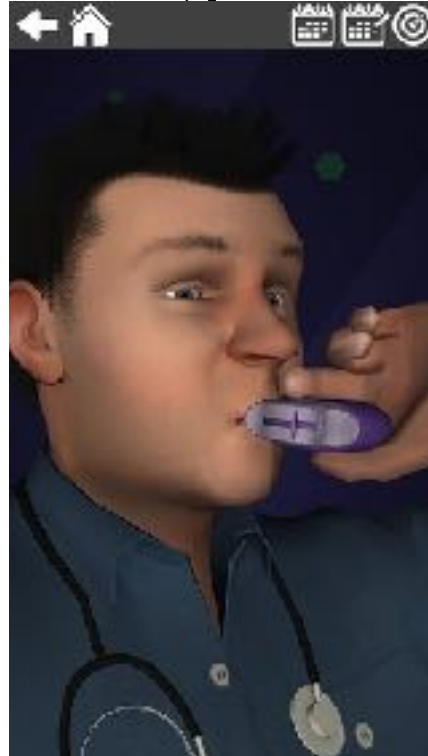
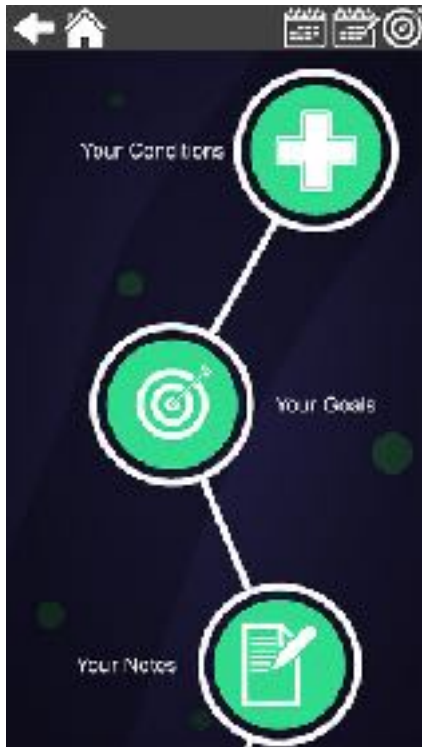
University Hospitals
of North Midlands
NHS Trust

Manage Your Health

A new App for managing
your
long term conditions



west midlands
ACADEMIC HEALTH SCIENCE PARTNER



Available now on



Search for 'Manage Your Health'

Evaluation in practice

- Three current evaluations
 - use by community pharmacists for pharmaceutical care plans in Scotland
 - use by pre-registration pharmacists in England for OSCEs
 - use by patients for information on asthma
- Forthcoming
 - avatars for training pharmacists in consultation skills for Atrial Fibrillation (UK, Germany and France)

Results from evaluation (1)

- NES Scotland
- 32 pre and post use semi structured interviews
- significant increase in ability to conduct pharmaceutical care plan
- significant increase in clinical knowledge
- found technology useful and easy to use

Results of evaluation (2)

- Cross-over design of VP vs paper based case studies for preparation of OSCEs
- Pre and post intervention “quizzes”
- 128 questionnaires
- 20 in depth interviews
- VP cohort engaged with exercise more often
- VP cohort answered more post intervention quiz questions correctly

Putting Learning into Practice

- *I think that they helped provide like a deeper learning and helped to implement the learning into like case study scenarios, so they actually stuck in my mind a lot more than if I was to just read about the topic.’ Respondent 52:
Hospital, Female*

- *‘These virtual patients are a 21st century learning tool and are as close as you can get to real life, to situations you will have to deal with every day when you qualify and are on your own...it gives you confidence because you’ve done it virtually and if you make a mistake in the simulation you haven’t killed anyone and you can try again...’* Participant 58:
VP group, Hospital, Male

Communication Skills

- *‘...it’s confidence more than anything, of being able to ask the right questions and unless you’ve got something that you can use and re-use, like the virtual patient, then I think you become a bit sort of unsure if you’re not doing it all the time and when you do come to do it, you can’t re-do it if it’s with a real patient; you can’t keep asking them the same questions over and over again! It’s definitely good to help you learn what questions to ask and what advice to give and how particular words and phrases may prevent a good rapport with a patient.’*
Respondent 50: Hospital, Female



Confidence for exam

- *‘I felt more confident answering the questions in the exam which we had done case studies on...like they helped me with reinforcing child doses and stuff and EHC, and a couple of questions came up on the exam so I found it really helped for those.’ Respondent 16: Community, Female*

Confidence for future practice

- *'I definitely feel more confident in general. It gives you that extra practice, especially for when I'll be starting out, with like the confidence and speak to doctors and what questions to ask and where to find information. Some of the resources I didn't know about so that's been really helpful and I won't feel as vulnerable starting work as a pharmacist, I feel like I'll have done something a bit extra to some other pre-regs and that has helped me feel more confident.'*
Respondent 64: Hospital, Female

Identifying Gaps in Knowledge

- *'...it was good because they were good topics which made you sit down and, obviously I couldn't answer the questions straight away, because I had to go and research and come back...I always find if you got and read something and someone tests you on it, it identifies if you've got anymore gaps in your knowledge and if you're answering questions because you've understood them or you've just memorised information...'* Respondent 17: Hospital, Female

Blended learning

- *‘ ...I think it’s good to learn in different ways because when things are presented to you, it means you can learn; I learn in different ways you know, I do find that reading is good for me but also interactive learning works as well, so having case studies to do as well will help individuals identify how they learn best.’*
Respondent 60: Community, Female

VP vs role play

- *...‘I think it’s really good and I think anyone would say yes, we need it, because it’s different, if you roleplay with someone or when somebody’s watching you talk to a patient you just feel like you’re being tested. But with the scenarios, the virtual scenarios, I think you’d be a bit more relaxed and sort of learn from it rather than feeling embarrassed and stupid because somebody is watching you. Obviously, you need that interaction with patients as well, but especially starting off, it’s good to learn what questions to ask and what points to consider and stuff...I’d love to have a bank of over the counter virtual things to go through because then it makes...it would stick in your head more as well.’*
Respondent 64: Community, Female

Understanding different work sectors (1)

- *‘...everybody has such different experiences and support...like speaking to some of my community friends, I definitely felt more prepared for the exam... my cross-over was only for a couple of weeks and I think there was maybe only one EHC in that time....so to see a real one and practice a virtual one was good, I got a balance of both...the thing is how often are you going to get a kid come into community pharmacy with measles so it’s good doing stuff that you don’t see every day....you need to know about it because if something like that walks in you need to know what you’re doing... so it’s really good to practice things you might not otherwise see.’ Respondent 58: Hospital, Male*



Understanding different work sectors (2)

- *'I'm working in a community setting so on a day-to-day basis we have a lot of patients coming in asking for advice, for just over the counter medicines...those who are working in a hospital setting, it's really good for them to have those over the counter queries and cases because they obviously don't have all that exposure in the hospitals...it will be really good for those who don't work in a hospital setting to have that kind of case study; maybe like renal function or liver function....it's like finding a balance between them.'* Respondent 96: Community, Female

Revision vs Exam (OSCE)(1)

- *‘As a practice I’d say that’s fine but I think the whole, one of the points of an OSCE is actually human interaction, being able to tell another person...although it is pretty horrible when there’s someone marking you...I don’t know if I’d want a computer station OSCE because I don’t think I would feel that was an OSCE if that makes sense? I would welcome it as a practice though, yes, something other than a role play with your tutor and gets you into the OSCE mode without getting too overly nervous...’ Respondent 136: Hospital, Male*

Accessibility

- *'...I think there is a general need for more information for pre-reg's in general, whether it's in hospital or community...most of the information that's presented to you, you either have to pay for it or do like a 30-day trial period in order to get hold of it. Whereas with cases like this, it's more accessible and it's easier to go through and the information that you are getting from it is quite good and it is a high enough level that it will really carry you through pre-reg.'*
Respondent 4: Community, Female



Revision vs Exam (OSCE)(2)

- *'...I think it would be good as part of an OSCE, like maybe a station in an OSCE because OSCEs, to me, just feel really fake and it's like when you know they're marking you...I'm not shy but it's just like a very cringe situation! I think to get a true sense of kind of where you're at and stuff, I think that an interactive version is just as good to see your consultation skills and stuff like that. I think it should be part of the OSCEs, not replace it, because I think obviously having the pressure of doing OSCEs is kind of good because that's what it's going to be like when you're with a patient, you're going to be a bit uncomfortable, but I definitely think having a virtual station included would be a good and could replace some of the written stations...'*

Respondent 75: Community, Female



Acknowledgements

- Luke Bracegirdle Digital Lead
- Jessica Thompson (pre-reg evaluation)
- Victoria Mason/ Hardeep Pangli (Scotland community pharmacist evaluation)
- Further details contact
- s.r.chapman@keele.ac.uk