

Simulation in Pharmacy Education

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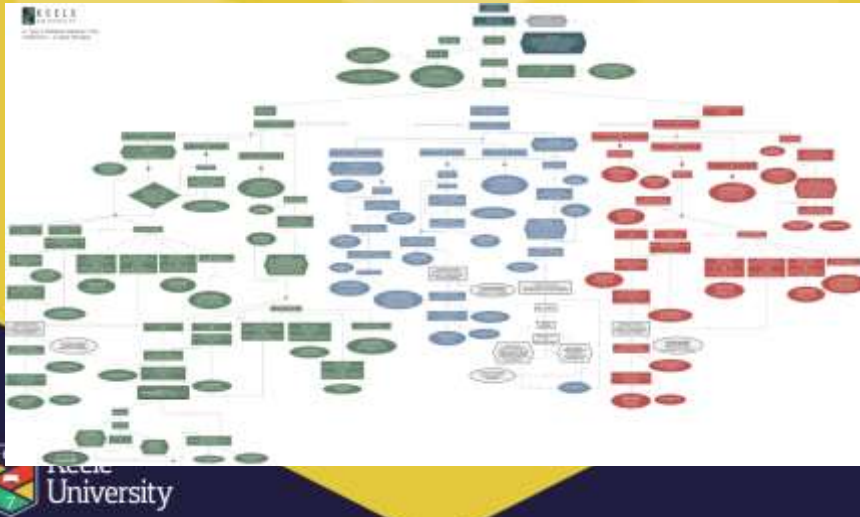
UK



Pharmacy education faces a challenge

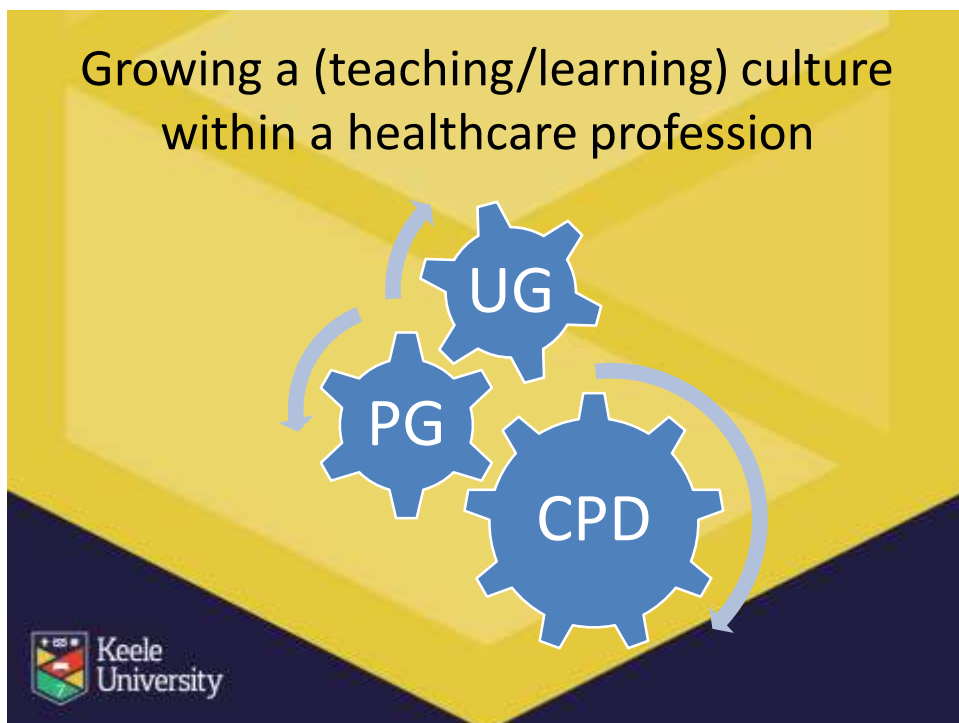
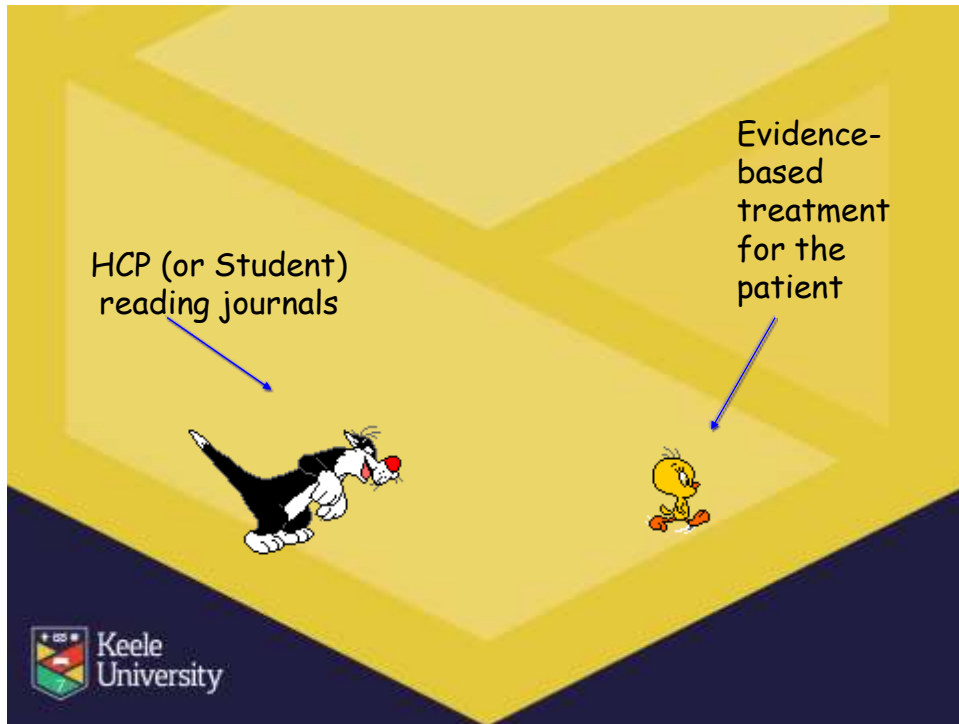


Clinical Decisions are Complex



More Reading?

- Potential journals 10,000
- Potential new articles per week 40,000
- Even if 97% are not relevant 1,200
- Time to read each article 15 minutes
- 10h a day, 6 days a week = 240 articles
- So at the end of the first week you are about 4 weeks behind in your reading
- At the end of the first month, you are 4 months behind in your reading
- And at the end of the first year you are almost 5 years behind in your reading



Primary Care in 2025

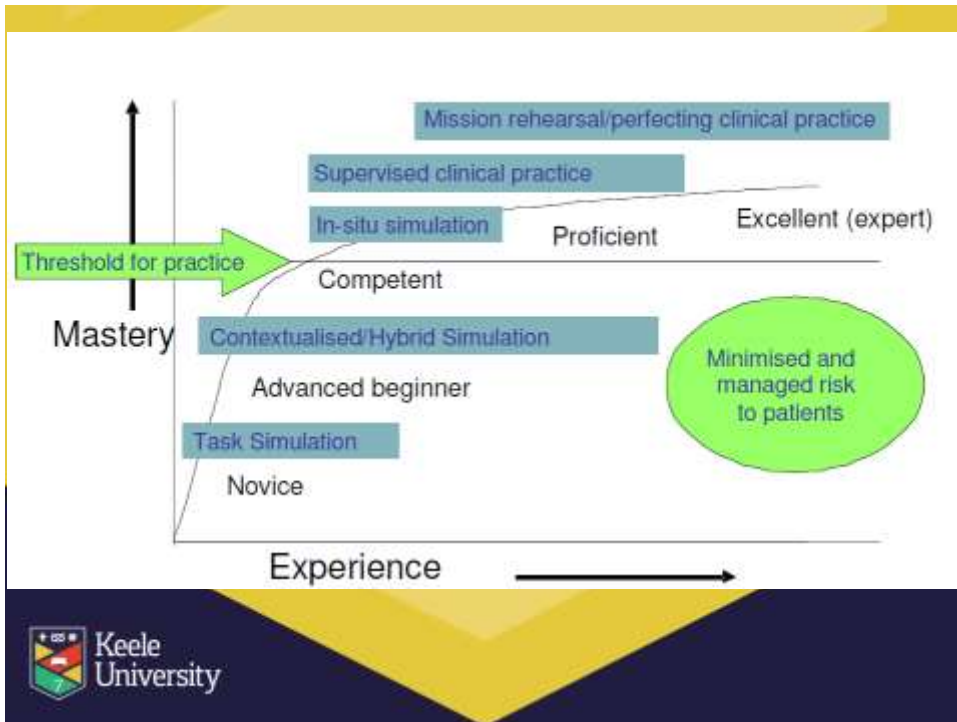
- Institute for Alternative Futures. Primary Care 2025: A Scenario Exploration. Alexandria, VA. January 2012. Available from <http://www.altfutures.org/pubs/pc2025/IAF-PrimaryCare2025Scenarios.pdf>.



Primary Care In 2025 ; A Vision

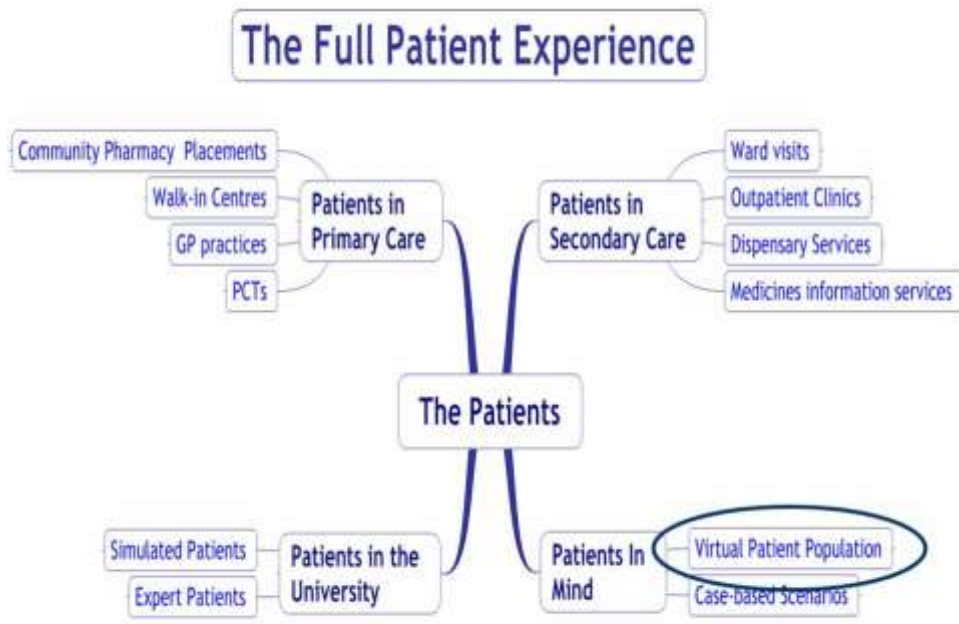
- **Integrated systems**—Accounting for 40% of primary care, integrated systems are responsible for all care for a global fee. These integrated systems include managed care organizations such as Kaiser Permanente, as well as a large number of accountable care organizations which were built around local hospitals, multispecialty clinics, and some insurance organizations. The integrated systems all have advanced EMR and analytics. ***Most provide their members with very effective personal health avatars (digital coaches), focus on prevention and can enhance the health of populations enrolled in the fully integrated systems.....***
- **■ Semi-integrated systems**—Another 30% of Americans receive their primary care through semi-integrated systems that receive fee-for-service payments plus incentives or bonuses for health improvements among their patients. They also receive monthly payments for each person in their panel for providing preventive services and being available for phone and email contact. Primary care providers in this group have well-developed EMRs. ***Many provide patients with their health avatar (or can integrate the patient-acquired avatar's information into their system)***. Most are certified as PCMH and have well developed primary care teams. Most community health centers are in this group.
- **■ Fee-for-service**—The remaining 30% of primary care occurs in fee-for-service models. For the affluent, “concierge” practices offer primary care to closed panels of patients who pay an additional fee for preferred access to providers via phone, e-mail, virtual reality, and in-person visits.
- ***Patients of most concierge practices can buy sophisticated health avatars linked to the practice.*** Some solo and small group physicians remain, particularly in rural areas and poor innercity neighborhoods.





Simulation expertise helps





10

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**





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
Inpatient GP

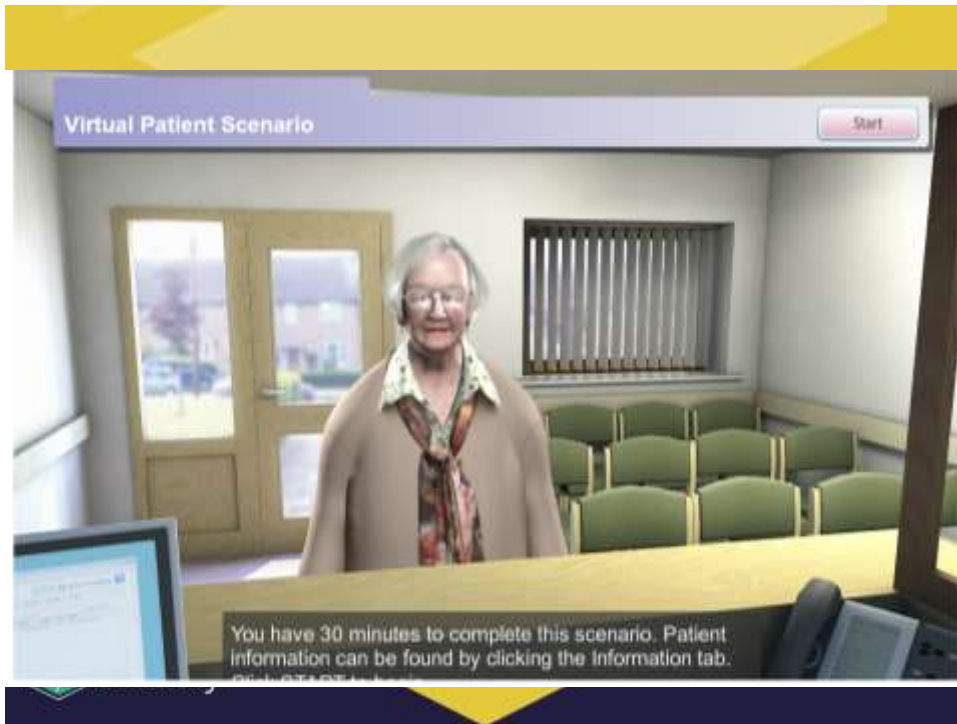
Male, 35-40 yrs
Junior Doctor
Hypertension
...

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

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

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





- Demo video of KAVE



Reference for Virtual Patients and KAVE

Bracegirdle, L. Chapman, S.R.

Programmable Patients: Simulation of
Consultation Skills in a Virtual Environment.

Bio-Algorithms and Med-Systems 2010, Vol. 6
(No. 11), pp.111-115



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.



IPE

Inter Professional Education

OR

Impossible Pedagogical Exercise?





Pharmacy ,medical and nursing students working on a synchronous case in the KAVE



Case feedback and discussion



IPE exercise; qualitative results

"...covered both the non verbal communication and the clinical side of things"

"...that when there is a clear mutual understanding of the roles and responsibilities of others it is really easy to work as an effective team"

Pharmacy Students

"Very engaging method of teaching. Good for active learners such as myself"

"learnt definition of roles in a clinical setting- using multi-professional tools. Testing knowledge and being able to discuss"

Nursing Students

"Picked up team working skills "

"Role clarification"

Medical Students



Smiles = learning = success!



Virtual Patient Weblinks

- **Keele KAVE Video**

http://www.keele.ac.uk/pharmacy/vp/kave/kave_video/

- **Virtual Patient Demonstration**

<http://www.keele.ac.uk/pharmacy/vp/vpdemo/>

- **BBC: Virtual Patients**

<http://news.bbc.co.uk/1/hi/england/7990149.stm>

- **BBC: KAVE** <http://www.bbc.co.uk/news/uk-england-stoke-staffordshire-14392477>



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Further Information

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