

Practice and Science

Professor Iqbal Ramzan

Dean of Pharmacy, The University of Sydney



Producing well rounded healthcare professionals by integrating science and practice

Australia



Pharmacy Curriculum

Balance of Science and Practice: At the cross roads again!



- Recognition by the public
- Historical curriculum context
- Current and future health practitioner needs and roles
- Education for current as well as future innovations
- Re-calibrating the curriculum to accommodate changing professional practices and societal health care needs



Community Standing of Pharmacists

- In public/consumer surveys Pharmacists are consistently ranked second only to nurses in trustworthiness and ethics and professionalism
- Why is this: approachability, free service, ready availability or genuine belief in being most knowledgeable about drugs?



 Global Conference on
Pharmacy &
Pharmaceutical Sciences
Education
Nanjing
China
7-8 November 2016



Megatrends in Pharmacy– How will they affect emerging therapies and services

- Automation (less hands-on dispensing)
- Greater role for technicians and wider scope of practice for Pharmacists
- More drugs will be complex biologic molecules with the need to understand their basic chemical properties and mechanism(s) of action and toxicity
- Which health practitioner is the most soundly trained in the basic biomedical sciences underpinning the discovery, delivery, pharmacokinetics, pharmacodynamics and pharmacogenomics of these new therapies?
- Pharmacists and Pharmacy students have the greatest understanding of the sciences that underpin current (and future) pharmacy practice

 Global Conference on
Pharmacy &
Pharmaceutical Sciences
Education
Nanjing
China
7-8 November 2016



Pharmacy Curriculum- Where have we come from?



- Apprenticeship scheme
- Three Year bachelor's degree (1960 onwards)
- Four Year bachelor's degree (from 1997)
- GEMs courses (M Pharm introduced in 2004; 3 plus 2 years)
- Pre-registration year including Intern Training Program, ITP
- All Pharm D? (not in Australia); five year integrated program?
- NRAS- to ensure patient safety and health workforce mobility



Pharmacy Degree Programs: Balance of science and practice



- Historically dominated by STEMM (science, technology, engineering, mathematics & medicine) subjects
- Then weighted in favour of biomedical/pharmaceutical sciences
- Followed by a radical shift to pharmacy practice/clinical pharmacy (especially in the US) at the expense of underpinning sciences
- Now a need to re-calibrate the balance but emphasis on relevance and emerging biomedical/pharmaceutical sciences (to mirror emerging drug complexity)



Science is Critical to Pharmacist Roles in New Emerging Therapies and Services



Some specific examples

- Generics
- Biologics/Bio-similars/Bio-betters
- Nano-medicine and Nano-toxicity
- Pharmacogenomics/Genotyping and Personalized Medicine
- Immunization/Vaccination
- Prescribing
- Medical Cannabis
- Naloxone administration



Future of Pharmacy Education



- Retain and strengthen underpinning sciences- but examine breath, depth and relevance to match evolving clinical contributions from Pharmacists
- Integrate foundation/advanced sciences and practice - not in silos
- Units of Study based on disease states and/or body systems
- Adopt spiral curricula; introduction of key concepts early and repeatedly with increasing complexity to reinforce previous learning



Conclusions: Future of Pharmacist Roles and Education



- Prepare for a different Pharmacy and Healthcare workforce
- Embrace technology-enhanced and pedagogically sound professional education underpinned by relevant sciences that evolve as professional roles evolve



 Global Conference on
Pharmacy &
Pharmaceutical Sciences
Education
Nanjing
China
7-8 November 2016

