



ASCEPT Standards for Basic and Clinical Pharmacology education in Medical Graduates

Introduction

The aim of these standards is to outline the essential basic and clinical pharmacology knowledge, skills and attitudes that all medical graduates require to be fit to prescribe safely and effectively by graduation. In medical training, there should be an attempt to move from 'teaching about drugs' to a more student-centered approach of 'learning about rational therapeutic intervention in individual patients'.

Knowledge

1. The actions, indications, contraindications/precautions and major adverse effects of medicines
2. The effective and safe use of medicines, that it is underpinned by understanding the actions, indications, contraindications/precautions and adverse effects, interactions, drug tolerance, drug resistance and genetic determinants of drug action
3. The clinical, basic, behavioural and social sciences on which medical practice is based and how and where pharmacology is integrated
4. The process of prescribing, dispensing and administering medications to patients, including safety checks
5. Awareness of the use of over-the-counter medicines and alternative therapies initiated by patients and non-health professionals and their effects on prescribed treatment

Skills

6. Establish an accurate drug history including prescription, non-prescription and complementary medicines, and information on adherence to therapy.
7. Apply pharmacokinetic and pharmacodynamic principles to therapeutics in individual patients
8. Calculate appropriate doses of medicines for individual patients
9. Compare and contrast therapeutic options for an individual patient including pharmacological and non pharmacological treatments
10. Provide patients (and/or carers) with appropriate information about their medicines
11. Monitor the effect of drug therapy through drug concentrations, pharmacodynamic responses and/or clinical outcomes
12. Write a safe and legal prescription
13. Critically appraise the prescribing of others
14. Detect and report adverse drug reactions

15. Critically evaluate treatment options
16. Apply knowledge of differences in the epidemiology of disease in differing populations and geographic locations that may manifest as different responses to medications to individualise prescribing
17. Estimate benefit and risk of medicines from the evidence, then compare with observed therapeutic and toxic effects
18. Access reliable, contemporary and independent information about medicines from local and on-line resources

Attitudes

19. Comply with legal requirements and ethical guidelines related to the use of medicines
20. Consider the potential benefits, harms and costs when making prescribing decisions
21. Be aware of the limitations of available therapies
22. Consider both immediate and long term therapeutic needs of patients when making prescribing decisions
23. Be aware that prescribing decisions relate not only to the commencement of treatment, but also changing or ceasing treatment
24. Consider the needs of individuals and of populations in the use of medicines
25. Be aware of the impact of social and cultural context on therapeutic decisions
26. Appreciate support available when prescribing problems exceeding one's own knowledge and skills are encountered
27. Work effectively with patients, families, and the community to provide the best treatment for patients
28. Be aware of medication costs to patients and government
29. Work effectively with other health professionals in order to provide the best treatment for patients
30. Appreciate the benefits of a multidisciplinary approach to medication safety - the types, causes and risks of medication errors and mechanisms to reduce them and where and when errors are most likely to occur
31. Make clinical decisions based on scientific methods and standards, rather than personal or religious beliefs or financial or other commercial interests

References

- Australian Medical Council, Assessment and Accreditation of Medical Schools: Standards and Procedures, 2009
- UK competencies (Likic R and Maxwell SR, Prevention of medication errors: teaching and training, BJCP 2009, 67(6):656-61)
- USA curriculum (Flockhart DA et al., Teaching rational prescribing: a new clinical pharmacology curriculum for medical schools, Naunyn-Schmiedeberg's Arch Pharmacol 2002, 366(1):33-43)
- Clinical Pharmacology in Research, Teaching and Health Care. Considerations by IUPHAR. Addendum II: Model core curriculum for clinical pharmacology, therapeutics and prescribing for medical students. Basic and Clinical Pharmacology and Toxicology 2010, 107: 531-559.

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