Clinical Pharmacology

	Domain: Applied Science for Medicine
1	• Develop, through study of pharmacological principles a framework of knowledge that forms the basis for the safe and effective use of medicines in clinical practice. • Define a receptor and describe the principles of affinity, efficacy and potency and the differences between competitive and non-competitive antagonism and inverse agonism. • Describe the role of receptors, enzymes, ion channels and transporters in drug action. • Describe the different signalling pathways for G-protein coupled receptors, tyrosine kinase inhibitors, ligand gated ion channels and nuclear receptors.
2	• Define volume of distribution, clearance and half-life. • Describe factors that affect absorption and describe the major pathways of drug elimination and how factors influence them, including enzyme induction and inhibition, lead to drug interactions. • Describe the Emax model of drug action. • Explain the difference between predictable and unpredictable adverse drug reactions, and how these may be minimised. • Describe the mechanisms of common examples of poisoning and approaches to treatment and prevention.
	Domain: Clinical and Communication Skills
3	• Demonstrate foundation skills for safe and effective prescribing. • Explain the information patients and medical practitioners need before prescribing a medicine. • Show how to access sources of information about medicines. • Show how to individualise dose requirements (including calculation of loading and maintenance doses) and how to monitor response to treatment. • Write a prescription correctly.
	Domain: Population Health
4	• Discuss the contribution of medicines, and their costs, to health care in New Zealand. • Describe the impact of adverse drug reactions and medication error.