

MRCPsych Theory Syllabus

**Summary of Areas of Core Medical Knowledge
Underpinning Specialist Training in Psychiatry**

MRCPsych Examinations Committee

Updated for use from January 2027

Message from Chief Examiner

Dear Candidate,

Exams are stressful and to ensure there are no surprises and candidates know what to expect in the exam, we have developed a syllabus that is explicit and detailed. We have formatted it in a way that makes it easily readable and helps to guide exam preparation.

All questions that appear in the exam are mapped to the syllabus.

The percentage of questions from each area of the syllabus is also clearly outlined.

We hope that the syllabus will not only guide your learning but also help you to figure out the areas that need more attention while preparing for the exams.

I wish you all the best.



Dr Vivek Agarwal
Chief Examiner, RCPsych

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Introduction

This version of the MRCPsych Theory Syllabus defines the core medical knowledge to be assessed in Paper A and Paper B from January 2027. Together, these examinations assess the knowledge required during core psychiatry training as defined in the Core Psychiatry Curriculum. The syllabus provides candidates, trainers, examiners and other stakeholders with a clear account of the breadth and depth of knowledge expected at this stage of psychiatric training.

This syllabus has been revised through an extensive review of the 2021 syllabus, involving expert panels and clinicians from across psychiatric specialties and subspecialties. Established knowledge, developments in clinical practice and research, and the requirements of contemporary psychiatry were considered through successive rounds of scrutiny and refinement, resulting in a structured framework with balanced and appropriate coverage across both Paper A and Paper B.

The professional judgement, subject expertise and sustained engagement of contributors across the panels and wider review process have helped to ensure that the syllabus is clinically grounded, educationally meaningful and sufficiently detailed to support the development of valid and representative examination content. The resulting document provides a shared reference point for candidates, educators, question writers and examination panels.

Candidates preparing for the MRCPsych theory examinations should use the syllabus as their primary guide to the knowledge assessed in Paper A and Paper B. Its branching structure shows how broad domains are organised into progressively more specific areas of learning, allowing candidates to plan their revision systematically, identify gaps in knowledge and monitor their coverage of the syllabus. Used alongside teaching, clinical experience, textbooks, current evidence and other authoritative learning resources, it provides a practical framework for organising revision by paper and domain, linking foundational science with clinical practice to support comprehensive examination preparation.

Syllabus Coverage

The Paper A and Paper B examinations follow similar structures.

Each examination consists of the following:

- A three hour exam
- 150 items (each item is worth 1 mark)
- 100 items are multiple choice questions (MCQ)
- 50 items are extended matching items (EMI)

Paper A will cover four domain areas.

The approximate percentage range of questions allocated to each Paper A domain is shown below:

Domain	Approximate Range
1. Psychology and Human Development	30-36%
2. Neuroscience	22-28%
3. Clinical Psychopharmacology	22-28%
4. Classification and Assessment in Psychiatry	14-20%

Paper B will cover nine domain areas.

The approximate percentage range of questions allocated to each Paper B domain is shown below:

Domain	Approximate Range
5. Organisation and Delivery of Psychiatric Services	4-8%
6. General Adult Psychiatry	18-22%
7. Old Age Psychiatry	8-12%
8. Psychotherapy	4-8%
9. Child and Adolescent Psychiatry	8-12%
10. Addictions Psychiatry	4-8%
11. Forensic Psychiatry	4-8%
12. Intellectual Disability	4-8%
13. Research Methods, Statistics, Critical Review and Evidence-Based Practice	30-36%

Paper A

Paper A in the MRCPsych assesses the scientific and theoretical basis of psychiatry.

1. Psychology and Human Development

Demonstrate understanding of the psychology of behaviour, mental process, human development, motivation linked to biological emotional needs and how they relate to psychiatric conditions. This will include theories of basic psychological processes, cognitive, emotional and social development, individual and cultural contexts, and psychological approaches to mental health and developmental difficulties.

1.1. Sensation and perception

- 1.1.1. Sensory threshold, detections, modalities, adaptation and coding
- 1.1.2. Active and passive perception
- 1.1.3. Auditory, the vestibular sense, the skin senses, pain, smell, taste and visual sensations (including colour, contrast and shape), interoception and proprioception
- 1.1.4. Visual pathway, dorsal and ventral systems, the binding problem, perceptual constancy, unconscious inference and illusions, the development of visual perception as an interaction between the intrinsic and extrinsic factors
- 1.1.5. Network models of perception, feature nets, features to geons to meaning, depth and motion, the role of redundancy of perception, figure ground differentiation, Gestalt theories
- 1.1.6. Information processing and attention, salience theory and the relevance of perceptual theory to hallucinations and other psychopathology

1.2. Awareness, sleep and consciousness

- 1.2.1. Neural correlates of consciousness, the global workspace hypothesis
- 1.2.2. Mind-body dichotomy, its fallacies and dual aspect monism
- 1.2.3. Sleep, sleep structure and dreaming, parasomnias, biorhythms, effects of sleep deprivation
- 1.2.4. Altered state of consciousness, spiritual, religious, drug induced, trance state, 'psychedelic' induced states and dissociative states
- 1.2.5. Consciousness, the cognitive unconscious, translating thoughts into words and critiques of the conscious unconscious divide
- 1.2.6. Mistaken introspections and identities, unconscious attributions
- 1.2.7. Brain damage and unconscious functioning, arousal, delirium

1.3. Learning and learning theories

- 1.3.1. Neural basis for learning, how different species learn
- 1.3.2. Psychology of punishment and reward, emotional regulation and learning including threat, soothing and drive
- 1.3.3. Classical conditioning and the relationship between the conditioned and unconditioned reflexes
- 1.3.4. Thorndike and the law of effect, Skinner and operant behaviour
- 1.3.5. Generalisation of learning and habituation, chaining, shaping, cueing and the impact of various reinforcement schedules
- 1.3.6. Observational learning theory including Piaget, Vygotsky and Bruner
- 1.3.7. Changing behaviours or acquiring knowledge
- 1.3.8. Relation of learning processes to development of clinical problems

1.4. Memory

- 1.4.1. Acquisition, storage, consolidation, retrieval, constructive and reconstructive

- 1.4.2. Neural basis for memory including models of long-term potentiation
- 1.4.3. Sensory memories, working memory model, Baddeley's phonological loop and visuo-spatial scratch pad model
- 1.4.4. Short-term memory, long-term memory, establishing long-term memories
- 1.4.5. Hierarchy of memory types, episodic and semantic memory, subtypes of episodic memory, explicit and implicit (emotional and procedural) memory
- 1.4.6. Gaps in memory, distortion, inference, forgetting and memory intrusions, false memory, flashbulb memory, accuracy of eyewitness testimony, trauma and memory
- 1.4.7. Memory disorders and their assessment, and the relevance of memory and cognitive function in psychiatric disorders and their assessment

1.5. Intelligence

- 1.5.1. Intelligence as a construct, factor analysis and the idea of general intelligence
- 1.5.2. Intelligence testing, the psychometric approach, measuring intelligence and assessment tools, reliability and validity, cultural context and limitations
- 1.5.3. A hierarchical model of intelligence, fluid intelligence (gf) and crystallised intelligence (gc)
- 1.5.4. Mental speed, working memory and attention, executive control, other influences on intellectual functioning
- 1.5.5. Practical intelligence, emotional intelligence, the theory of multiple intelligences
- 1.5.6. The cultural context of intelligence
- 1.5.7. Problems with 'nature vs. nurture', genetics, epigenetics and individual IQ, environment and individual IQ, heritability ratios, group differences in IQ

1.6. Thought and higher cortical functions

- 1.6.1. Concepts, prototypes and cores, heuristics and dual process theory

- 1.6.2. Executive functions, high level such as initiation, planning and multi-tasking versus low level inhibition, cognitive flexibility and working memory judgment (Miyake model), deductive and inductive reasoning
- 1.6.3. Reasoning, cognitive bias such as recency and confirmation bias, logical fallacies, cognitive consistency and dissonance
- 1.6.4. Factors affecting decision making, including groupthink, cultural factors, human factors
- 1.6.5. Problem solving, hierarchical organisation, automaticity, obstacles to problem solving and overcoming obstacles to solutions
- 1.6.6. Theories of creativity including associative theory, interactionist theory and play
- 1.7. Language and communication
 - 1.7.1. Sound units, morphemes and words, phrases and sentences
 - 1.7.2. Language in nonhumans, the social origins of language learning
 - 1.7.3. Language differences and development and impact on thought, experience and understanding
 - 1.7.4. Development of language in infancy, language deprivation, language without sound, children deprived of access to some of the meanings, children exposed to more than one language, the case of bilingualism, the sensitive period hypothesis
 - 1.7.5. How language connects to thought
 - 1.7.6. Communicative competence, verbal, paraverbal and non-verbal communication
- 1.8. Motivation
 - 1.8.1. Motivational states, extrinsic and intrinsic stimuli
 - 1.8.2. Physiological systems, link to dopaminergic reward systems, the hypothalamus, thermoregulation
 - 1.8.2.1. Satiety, hunger, eating, and obesity, physiological, cultural and cognitive aspects of hunger and eating

- 1.8.2.2. Emotional states and link to motivation
- 1.8.2.3. Threat and aggression, physiological aspects of threat and aggression

- 1.8.3. Cultural and cognitive aspect of threat and aggression, sexual behaviour, motivation, belonging and achievement
- 1.8.4. Maslow and the hierarchy of needs
- 1.8.5. Need for achievement (nAch)

1.9. Emotion

- 1.9.1. Facets of emotion, cognitive appraisal, differentiation and the status of primary emotions
- 1.9.2. Functions of emotion, social communication, survival and motivation
- 1.9.3. Critical appraisal of James-Lange and Cannon-Bard theories
- 1.9.4. Stress, physiological and psychological aspects of stress response, the role of adrenaline and the parasympathetic nervous system, rating scales and physiological measurements
- 1.9.5. Situational factors, life events, daily hassles and uplifts, conflict and trauma, vulnerability and invulnerability, type A or B responses
- 1.9.6. Emotion regulation, adaptive, harmful coping mechanisms, locus of control, learned helpfulness, learned resourcefulness, resilience and burn out

1.10. Social psychology

- 1.10.1. Social cognition
 - 1.10.1.1. Attitudes, components and measurement by Thurstone, Likert and semantic differential scales, attitude change, persuasive communication and attitude behaviour relationships
 - 1.10.1.2. Attribution, interpersonal issues, person perception, affiliation and friendship, attribution theory, 'naive psychology' and the primary (fundamental) attribution error and social behaviour in social interactions

- 1.10.1.3. 'Theory of mind' and its relation to autism spectrum conditions (ASC)
- 1.10.1.4. Psychology and psychopathology of the self, including self-psychology, self-concept, self-image, self-recognition, experiential self and personal identity
- 1.10.2. Social influence
 - 1.10.2.1. Leadership, power and obedience, types of social power, influence operating in small and large groups or crowds, influence of culture, religion and media including social media
 - 1.10.2.2. Conformity, obedience, compliance, polarisation, 'groupthink', deindividuation
 - 1.10.2.3. Communication in relationships
- 1.10.3. Group processes, intergroup behaviour, prejudice, stereotypes and intergroup hostility
 - 1.10.3.1. Theories of social identity and group formation, structure and membership, Bion and Foulkes
 - 1.10.3.2. Aggression, explanations according to social learning theory, operant conditioning, ethnology, frustration and arousal concepts, the influence of broadcast and other media including social media, family and social backgrounds of aggressive individuals
 - 1.10.3.3. Altruism, social exchange theory and helping relationships
 - 1.10.3.4. Interpersonal co-operation, attraction and love
- 1.10.4. Social science and socio-cultural psychiatry
 - 1.10.4.1. Descriptive terms, social class, socio-economic status and their relevance to psychiatric disorder and health care delivery
 - 1.10.4.2. Social roles of doctors, sick role and illness behaviour
 - 1.10.4.3. Family life in relation to major mental illness, knowledge and critical appraisal of theories including high expressed emotion
 - 1.10.4.4. Social and geopolitical factors in relation to in relation to specific mental health conditions, social structures, poverty and wealth distribution, climate change, environmental factors and global events

- 1.10.4.5. Life events and their subjective, contextual evaluation
 - 1.10.4.6. Sociology of residential institutions including psychiatric institutions and impact of institutionalisation
 - 1.10.4.7. Basic principles of criminology and penology
 - 1.10.4.8. Stigma and prejudice, racism including institutional racism, cultural bias, androcentrism, ethnocentrism and cultural relativism
 - 1.10.4.9. Ethnicity and mental health
 - 1.10.4.10. Cultural formulation, influence of identity, idioms of distress, explanatory models, help seeking behaviour
 - 1.10.4.11. Host and migrant interactions, acculturation, multicultural society, assimilation and 'melting pot', marginalisation and segregation
 - 1.10.4.12. Pathoplasticity and the influence of culture in shaping presentation of illness
 - 1.10.4.13. Ethics and philosophy in psychiatry, framework for assessing ethical issues including legal, moral and societal aspects, epistemology, principles of medical ethics, rights and values
- 1.11. Underlying concepts related to human development
- 1.11.1. Basic frameworks for conceptualising development, nature and nurture, stage theories, maturational tasks (Erikson) and possible definitions of maturity
 - 1.11.2. Examination of gene-environment interactions with specific reference to intelligence, relative influence of early versus later adversities, the relevance of developmental framework for understanding the impact of specific adversities such as trauma
 - 1.11.3. Methodology for studying development, cross sectional, cohort and individual studies, identification and evaluation of influences
 - 1.11.4. Genetic and epigenetic influences on development including gene environment interactions
 - 1.11.5. Neuroimaging and its role in understanding development and up to date findings in this field

1.12. Theories and concepts related to stages of human development

- 1.12.1. Psychoanalytic theories of development
- 1.12.2. Attachment theories and relevance to emotional development, affect regulation and human relationships in childhood and later on, conditions for secure attachment, types and clinical relevance of insecure and disorganised attachment, early separation and its consequences, consequences of failure to develop selective attachments, maternal 'bonding', parental sensitivity, impact of deprivation and neglect with reference to relevant literature
- 1.12.3. Adverse childhood experiences (ACE), bereavement, parental divorce on subsequent development and mental health of the child and adult
- 1.12.4. Family relationships and parenting practices, the influence of parental attitudes compared with parenting practices, systemic theory including supportive systems in development, and aspects of distorted family function, discord, overprotection, rejection, and enmeshment, different family structures and cultural influences on family and stages of family
- 1.12.5. Factors affecting parent-child relationships, origins, typologies and stability of temperament and the evolution of character and personality, childhood vulnerability and resilience with respect to mental health
- 1.12.6. Development of social competence and relationships with peers, acceptance, group formation, co-operation, friendships, isolation and rejection and the components of popularity
- 1.12.7. Moral development with critical reference to Kohlberg's stage theory and relationship to development of social perspective taking
- 1.12.8. Development of emotion literacy and emotional regulation in childhood and adolescence including development of fears in childhood and adolescence with reference to age and possible aetiological and maintenance mechanisms
- 1.12.9. Sexual development, including the development of sexual identity and preferences, psychological, physiological, cultural and cognitive aspects of sexuality and sexual orientation

- 1.12.10. Adolescence as a developmental phase with special reference to pubertal changes, task mastery, conflict with parents and authority, affective stability and 'turmoil', normal and abnormal adolescent development, hormonal change and impact on mental state
- 1.12.11. Adaptations in adult life, such as pairing, parenting, illness, bereavement and loss
- 1.12.12. Pregnancy and childbirth and their stresses both physiological and psychological and embryological development
- 1.12.13. Development of personal (ego) identity in adolescence and adult life, work, ethnic, gender and other identities, mid-life 'crises'
- 1.12.14. Normal ageing and its impact on physical, social, cognitive and emotional aspects of individual functioning, impact of menopause, social changes accompanying old age, importance of loss, personality changes with ageing, social and economic factors in old age, attitude, status of the elderly, retirement, income, accommodation and socio-cultural differences

2. Neuroscience

Demonstrate knowledge of the neuroscience that underpins the practice of clinical psychiatry. This will include (1) elementary knowledge of the normal structure and functioning of the nervous system as it relates to psychiatry, i.e., the generation of normal mental states and behaviours, and of the dysfunction that leads to mental disorder, (2) ability to relate the symptoms and signs of mental disorder, and the examination of the nervous system, to underlying neural structures and their activity, (3) Neuropsychology, neurodevelopment, neurodiverse conditions and neurodevelopmental disorders, acquired brain injury, and neurodegenerative conditions, cognitive and neuropsychological evaluation.

- 2.1. Concepts related to neuropsychology
- 2.2. Neuropsychological and cognitive assessments related to diagnosis and assessment of neurodevelopmental disorders and neurodiversity, acquired brain injury, dementias and neurodegeneration and other psychiatric conditions
- 2.3. Basic techniques in neuroscience
 - 2.3.1. Neurophysiology of neurological investigations
 - 2.3.1.1. Single unit recordings
 - 2.3.1.2. Electro-neurophysiology and electroencephalogram (EEG) or frequency bands, normal findings, evoked response techniques, applications to investigation of cerebral pathology, seizure disorders, sleep and psychiatric disorders and effects of drugs on the EEG
 - 2.3.1.3. Neuroimaging and its role in understanding brain function, including CT, structural MRI, DTI, FMRI, PET, MR spectroscopy
 - 2.3.1.4. Microdialysis
 - 2.3.1.5. Cerebro-spinal fluid (CSF) analysis or lumbar puncture in pathogenic states, in diagnosis of dementia, neuro-degenerative conditions, auto immune and infective encephalitis with neuropsychiatric symptoms and CSF correlates in common psychiatric conditions

2.3.2. Neurophysiology of physical interventions in clinical and research psychiatry

- 2.3.2.1. Perturbing brain function
- 2.3.2.2. Lesion studies
- 2.3.2.3. Electrical stimulation
- 2.3.2.4. Optogenetics
- 2.3.2.5. TMS
- 2.3.2.6. TDCS
- 2.3.2.7. Deep brain stimulation
- 2.3.2.8. Vagus nerve stimulation

2.3.3. Animal models of psychiatric disease

2.3.4. In vitro models including iPSCs and organoids

2.3.5. Data analysis and computational modelling

2.4. Cells

2.4.1. Cells found within the nervous system and their anatomical and functional localisation in layers in different parts of the cortex

2.4.2. Fundamental concepts in the physiology of neurones, synapses and receptors, including an understanding of resting potential, action potential, ion fluxes and channels, G-protein coupled receptors, allosteric modulation of receptors, long-term potentiation, synaptic plasticity and pruning

2.4.3. Modelling single neurons and their combination in circuits

2.4.4. Glia

2.5. Neurochemistry and neurophysiology

2.5.1. Basic neurochemical mechanisms with particular focus on central nervous system (CNS) function

- 2.5.1.1. Brain metabolism, oxygen utilisation, glucose metabolism, the tricarboxylic acid (TCA, citric acid, krebs) cycle, the GABA shunt and the role of co-factors in physiological functioning, such as acetyl co-enzyme A, folate
- 2.5.1.2. Synthesis and metabolism, relevant initiating compounds, enzymes and metabolites of the major neurotransmitters of relevance to psychiatric well-being and disorder, catechol or indole amine, acetylcholine, excitatory and inhibitory amino acids
- 2.5.2. Physiology of neurotransmission
 - 2.5.2.1. Chemical synapse
 - 2.5.2.2. Mechanisms of transmitter ('first messenger') storage, release ('exocytosis') and disposal, intrasynaptic breakdown, receptor interactions, reuptake and recycling
 - 2.5.2.3. Receptor subtypes, structure and function, metabotropic, G protein-coupling and its effects, ionotropic, surface, intracellular
 - 2.5.2.4. Intracellular effects of receptor activation, including 'second messengers'
 - 2.5.2.5. Neuromodulation and the role of neuropeptides
 - 2.5.2.6. Large molecule transportation system ('endocytosis')
- 2.5.3. Neurochemistry of opioids and common recreational drugs
- 2.6. Neuroanatomy
 - 2.6.1. Anatomy of the brain and the functions of the lobes and some of the major gyri including the prefrontal cortex, cingulate gyrus, limbic system and knowledge of cranial nerve and spinal cord structure
 - 2.6.2. Anatomy of the basal ganglia, caudate, putamen, globus pallidus, ventral striatum, substantia nigra and subthalamic nucleus

- 2.6.3. Internal anatomy of the temporal lobes, hippocampal formation and amygdala, neurogenesis and its possible role in mental health, temporal lobe epilepsy
- 2.6.4. Internal anatomy of the frontal lobes and cingulate gyrus
- 2.6.5. Major white matter pathways, corpus callosum, fornix and other pathways relevant to integrated behaviour
- 2.6.6. Ascending neurotransmitter systems including the nigrostriatal, mesolimbic and mesocortical dopamine pathways, the ascending noradrenergic pathway from the locus coeruleus, the basal forebrain cholinergic pathway, the brain stem cholinergic pathway, the corticofugal glutamate system and serotonin pathways

2.7. Neural circuits

- 2.7.1. Neural circuits and how these functions are disturbed in psychiatric disorders
 - 2.7.1.1. Appetite, hunger and thirst, disturbance in eating disorders and mood disorders, medication side-effects
 - 2.7.1.2. Sleep, arousal, effects of sleep deprivation, primary sleep disorders, role of sleep in other psychiatric disorders
 - 2.7.1.3. Sex, including effects of hormonal treatments, gender identity, disturbances related to psychiatric disorder and psychotropic-induced disturbance
 - 2.7.1.4. Violence and aggression
 - 2.7.1.5. Nociception and pain
 - 2.7.1.6. Motor system and movement disorders, including neurobiology of extra-pyramidal side-effects
 - 2.7.1.7. Learning, including computational models both in normal learning and in pathology, associative learning by Hebbian adaptation, unsupervised vs. supervised, reinforcement
 - 2.7.1.8. Habit formation, neurobiology of obsessions and compulsions
 - 2.7.1.9. Motivation, reward and pleasure, relevance to mood disorders and psychosis

- 2.7.1.10. Emotion and its regulation, relevance to mood disorders, psychosis and emotional instability, emotional instability apathy, anhedonia and fatigue
- 2.7.1.11. Perception
- 2.7.1.12. Attention, impairment in attention deficit hyperactivity disorder (ADHD)
- 2.7.1.13. Memory, including in dementia and Post Traumatic Stress Disorders (PTSD)
- 2.7.1.14. Fronto-executive functions including hypofrontality and impulsivity in different psychiatric conditions
- 2.7.1.15. Empathy, theory of mind, autism and dissocial behaviour
- 2.7.1.16. Language comprehension, expression and processing
- 2.7.2. Brain networks and dysconnectivity including default mode, task focus and salience networks
- 2.8. Modulators, hormones and inflammatory responses
 - 2.8.1. Hypothalamic-pituitary (neuroendocrine) axis
 - 2.8.2. Stress response and glucocorticoids
 - 2.8.3. Hormonal changes and neuroendocrine changes in psychiatric disorders
 - 2.8.4. Inflammation and immune responses
 - 2.8.5. Auto-immune contributions to psychiatric illness
 - 2.8.6. Obesity and metabolism, role in psychiatric disorders and effects of treatments
 - 2.8.7. Neuro-endocrine hypothalamic-pituitary-gonadal (HPG) reproductive axis
- 2.9. Genetics
 - 2.9.1. Basic genetic principles, methodologies for identifying genes, basic concepts, chromosomes, cell division, gene structure, transcription and translation, structure of the human genome, patterns of inheritance, traditional techniques, family, twin and adoption studies, distinction between direct

gene analysis and gene tracking, genetic markers, linkage studies, linkage disequilibrium and logarithm of the odds (LOD) scores, genome wide association studies, genetic variants, genetic influences on development including gene-environment interactions, the functions of microRNA and other mechanisms for RNA inhibition

- 2.9.2. Common genetic variation
- 2.9.3. Rare variation and structural variation, conditions associated with chromosome abnormalities, principal inherited conditions encountered in psychiatric practice and the genetic contribution to specific psychiatric disorders
- 2.9.4. Methods to identify genetic disorders and molecular phenotyping, techniques in molecular genetics, restriction enzymes, molecular cloning and gene probes, whole genome sequencing, gene expression, microarray and RNA sequencing, proteomics, metabolomics and molecular quantitative trait loci
- 2.9.5. Molecular and genetic heterogeneity, phenotype and genotype correspondence and endophenotypes and biotypes
- 2.9.6. Epigenetics, the types, causes and effects of epigenetic modification and the transmission of these changes through generations, epigenetic techniques, methylation, chromatin accessibility, histone modifications, transgenerational epigenetic inheritance and how drugs, psychotherapy and good and adverse experiences can modify epigenetics
- 2.9.7. Gene modification, gene editing and functional validation, clustered regularly interspaced short palindromic repeats (CRISPR) and massively parallel reporter assays (MPRA)
- 2.9.8. Genetic techniques for causal inference including mendelian randomisation
- 2.9.9. Clinical application of genetics in psychiatry, prenatal identification, genetic counselling, the organisation of clinical genetic services, DNA banks and polygenic risk scores

2.10. Neurodevelopment and neuroplasticity

- 2.10.1. Brain structure development and function throughout the lifespan from the foetal stages onwards

- 2.10.2. Neurodevelopmental models of psychiatric disorders
- 2.10.3. Neurobiology of attachment and the effect of trauma
- 2.10.4. Neuroplasticity
 - 2.10.4.1. Neurobiological effects of stress, pre-natal, peri-natal, post-natal, developmentally and in adults
 - 2.10.4.2. Neurobiological effects of learning
- 2.10.5. Intellectual and learning disability
- 2.10.6. Effects of injury at different ages on the brain and mental function, traumatic brain injury, inflammatory lesions, multiple sclerosis, and neoplastic lesions

2.11. Integrated neurobiology of syndromes and states

- 2.11.1. Autism
- 2.11.2. ADHD
- 2.11.3. Drug use, addiction, tolerance, withdrawal, relapse
- 2.11.4. Anxiety disorders
- 2.11.5. PTSD
- 2.11.6. Obsessive compulsive and related disorders
- 2.11.7. Major depressive disorders
- 2.11.8. Bipolar affective disorders
- 2.11.9. Psychosis
- 2.11.10. Neurocognitive deficits in psychotic disorders
- 2.11.11. Self-harm and suicidality
- 2.11.12. Medically unexplained symptoms, including 'functional neurological disorder' (FND), somatic symptom disorder (SSD) and bodily distress disorder (BDD)
- 2.11.13. Delirium
- 2.11.14. Sleep disorders

- 2.11.15. Intellectual and learning disability including specific genetic syndromes
- 2.11.16. Eating disorders
- 2.11.17. Epilepsy and seizures
- 2.11.18. Personality disorders
- 2.11.19. Comorbidity and multimorbidity
- 2.11.20. Menstrual related disorders

2.12. Neurobiology of specific treatment approaches

- 2.12.1. Emerging pharmacotherapies including ketamine, psychedelics and neuroplastogens
- 2.12.2. Pharmacogenetics
- 2.12.3. Electroconvulsive therapy
- 2.12.4. Psychological therapies
- 2.12.5. Brain and vagal stimulation
- 2.12.6. Autonomic nervous system (ANS) and peripheral nervous system (PNS) relevant to mental health

2.13. Neurodegeneration

- 2.13.1. Concepts in the pathophysiology of neurodegeneration, prodromal disease and mild cognitive impairment, preclinical stages, spectra, domains and dimensions of disease, reserve and resilience, environmental causes, comorbidity and dual pathology
- 2.13.2. Alzheimer's disease
- 2.13.3. Vascular dementia
- 2.13.4. Frontotemporal dementias, primary progressive aphasia and posterior cortical atrophy
- 2.13.5. Lewy body diseases including Parkinson's disease, multiple system atrophy (MSA) and associated syndromes
- 2.13.6. Prion diseases

- 2.13.7. HIV and related brain disease
- 2.13.8. Chronic traumatic encephalopathy
- 2.13.9. Metabolic conditions causing dementia syndromes, Wilson's disease
- 2.13.10. Fronto-striatal conditions such as motor neuron disease (MND) and amyotrophic lateral sclerosis (ALS)

3. Clinical Psychopharmacology

Demonstrate knowledge of basic pharmacological principles and how these specifically relate to psychotropic drugs. This will include pharmacokinetics, pharmacodynamics and developments in pharmacogenetics in relation to modifications of brain function, especially neurotransmission. Demonstrate understanding of therapeutics covering safe and effective use, including indications, doses, tolerability and safety, interactions and monitoring.

3.1. General Pharmacology

- 3.3.1. Classification, major classes and intra-class groups
- 3.3.2. Placebo effect in general and in research
- 3.3.3. Compliance, adherence, concordance, relevance and methods of maximisation including medicine optimisation
- 3.3.4. Assessment methods for efficacy and tolerability and monitoring including investigations such as laboratory testing and clinical rating scales
- 3.3.5. Basic principles of drug development and evaluation
 - 3.3.5.1. Phases I – II
 - 3.3.5.2. Phase III, randomised control trial (RCT) in psychiatry, importance of randomisation, endpoints (primary and secondary), superiority vs non-inferiority trials and accounting for missing data
- 3.3.6. Drug regulation, the purposes and processes of licensing, 'approved' versus 'offlabel' use, branded versus generic drugs
- 3.3.7. Principles of evidence-based prescribing, the 'risk-benefit' appraisal and personalisation

3.2. Pharmacokinetics

- 3.3.1. Factors affecting bioavailability
 - 3.3.1.1. General principles of absorption, interaction, distribution, metabolism and elimination

- 3.3.1.2. Effect of different modes of administration of drugs on kinetics
- 3.3.1.3. Protein binding of drugs and its consequences in health and disease
- 3.3.1.4. Half-life ($t_{1/2}$), T_{max} , C_{max} , volume of distribution (V_d), area under the curve (AUC), relevance to prescribing and clinical effects
- 3.3.1.5. Principle of kinetic modelling, linear versus zero-order kinetics, practical implications including accumulation and discontinuation of drugs
- 3.3.1.6. Drug metabolism, hepatic enzyme induction, the cytochrome P450 system, major isoforms, substrates, inducers and inhibitors
- 3.3.2. Kinetic changes across the life span in health and disease
- 3.3.3. Drug-drug interactions and medication through pharmacokinetics
- 3.3.4. Psychotropics
 - 3.3.4.1. Lipophilicity versus hydrophilicity
 - 3.3.4.2. Blood-brain barrier, structure and function
- 3.3.5. Principles of pharmacogenomics and pharmacogenetics
- 3.3.6. Principles of therapeutic drug monitoring, limitations with psychotropics including lithium and clozapine
- 3.3. Pharmacodynamics
 - 3.3.1. Targets of psychotropic agents including receptors, channels, transporters and enzymes
 - 3.3.1.1. Main receptor subtypes in relation to drug actions
 - 3.3.1.2. Outline knowledge of receptor structure, function and subclasses
 - 3.3.1.2.1. Metabotropic and G protein-coupled receptors
 - 3.3.1.2.2. Ionotropic

- 3.3.1.3. Receptor binding mechanisms, concept of affinity, including K_i and occupancy basic assessment using clinical, laboratory and imaging methods
- 3.3.1.4. Receptor binding profiles of psychotropic agents
- 3.3.1.5. Major pharmacological actions at receptor sites
 - 3.3.1.5.1. Concept of intrinsic activity
 - 3.3.1.5.2. Agonism, antagonism, partial agonism and inverse agonism
- 3.3.1.6. Intracellular effects of receptor activation signalling cascades, second messengers and gene networks
- 3.3.1.7. Pharmacodynamically mediated drug-drug interaction
- 3.3.1.8. Outline knowledge of specific transporter structure or function
 - 3.3.1.8.1. Neurotransmitter sodium symporters
 - 3.3.1.8.2. Antiporters
- 3.3.2. Putative mechanisms of action of major psychotropic and psychoactive classes, 'target' actions at molecular and systems levels
 - 3.3.2.1. Antipsychotics
 - 3.3.2.2. Antidepressants
 - 3.3.2.3. Drugs for mood disorder prophylaxis and for treatment of mania
 - 3.3.2.4. Drugs used in the treatment of anxiety disorder
 - 3.3.2.5. Agents used in the treatment of dementia and neurodegenerative conditions including anti-dementia medications and immune therapies
 - 3.3.2.6. Sleep enhancing medications including hypnotics, melatonin and related formulations and dual orexin receptor antagonists (DORA)
 - 3.3.2.7. Cognitive enhancers
 - 3.3.2.8. Opioids including substitution regimes

- 3.3.2.9. Psychostimulants
- 3.3.2.10. Cannabinoids
- 3.3.2.11. Psychedelics including psilocybin
- 3.3.2.12. Empathogens including 3,4- Methylenedioxymethamphetamine (MDMA)
- 3.3.2.13. Novel and new psychoactive substances
- 3.3.3. Major aetiological theories underpinned by pharmacological mechanisms
 - 3.3.3.1. Dopamine hypothesis
 - 3.3.3.2. Biogenic amine hypothesis
 - 3.3.3.3. Cholinergic hypothesis, cognition
 - 3.3.3.4. Cholinergic-adrenergic (balance) hypothesis (mood)
 - 3.3.3.5. Glutamatergic hypothesis
 - 3.3.3.6. Amyloid cascade hypothesis
- 3.3.4. Adverse effects of major psychotropic and psychoactive agents and their management
 - 3.3.4.1. General pharmacology, postural hypotension, sedation, sexual dysfunction, weight gain and metabolic dysfunction QTc prolongation
 - 3.3.4.2. Specific pharmacology, extrapyramidal symptomatology, neuroleptic malignant syndrome (NMS) and serotonin syndrome (SS)
 - 3.3.4.3. Idiosyncratic, toxic, allergic reactions, blood dyscrasias hepatotoxicity, allergic hepatitis skin reactions, Stevens-Johnson syndrome, toxic epidermal necrolysis myocarditis and cardiomyopathy
- 3.3.5. Teratogenicity, developmental abnormalities and complications associated with psychotropic drug use in pregnancy and breastfeeding
- 3.3.6. Other medications and their use in psychiatric practice

- 3.3.6.1. Muscarinic and antimuscarinics
- 3.3.6.2. Antiepileptics
- 3.3.6.3. Analgesics, opioid and non-opioid
- 3.3.6.4. Beta-blockers
- 3.3.6.5. Dopamine agonists
- 3.3.6.6. Adrenergic agonists

- 3.3.7. Putative neurochemical changes associated with physical treatments such as ECT, rTMS, vagal nerve stimulation
- 3.3.8. Commonly used herbal remedies of relevance to psychiatry

- 3.4. Therapeutics
 - 3.4.1. Medicine optimisation
 - 3.4.1.1. Establishing goals of treatment
 - 3.4.1.2. Rational prescribing
 - 3.4.1.2.1. Specific psychiatric diagnoses, disorders and severities of disorder
 - 3.4.1.2.2. Phases of illness, acute, subacute and maintenance
 - 3.4.1.2.3. General health status and co-prescribed medications
 - 3.4.1.2.4. Age
 - 3.4.1.3. Tailored prescribing and the individual risk-benefit appraisal
 - 3.4.2. Clinical prescribing
 - 3.4.2.1. Dose ranges, minimum effective doses and time scales for evaluating efficacy
 - 3.4.2.2. Strategies for managing poor response or non-response

- 3.4.2.3. Standardised definitions of 'treatment resistance' including for schizophrenia and major depression
- 3.4.2.4. Recommendations for switching within major classes and across compounds
- 3.4.3. Monitoring of efficacy and tolerability
- 3.4.4. Drug dependence, tolerance, discontinuation symptoms and withdrawal, putative mechanisms of actions and management
 - 3.4.4.1. With substances use and addiction
 - 3.4.4.2. With prescribed psychotropics
- 3.4.5. Prescribing in special circumstances
 - 3.4.5.1. Childhood and adolescence
 - 3.4.5.2. Older people
 - 3.4.5.3. In eating disorders
 - 3.4.5.4. In medical co-morbidities, hepatic failure, renal failure, cardiovascular disease
 - 3.4.5.5. During pregnancy, postpartum period, breast feeding
 - 3.4.5.6. During premenstrual dysphoric disorder and around menopause
- 3.4.6. Controlled substances in the United Kingdom (UK), drugs used in management of addictions and modes of action and safety, tolerability
- 3.4.7. Pharmacotherapy for management of psychiatric emergencies, minimising and mitigating medication side effects
 - 3.4.7.1. Management of psychiatric emergencies including use of drugs in rapid tranquilisation, as required use of drugs
 - 3.4.7.2. Drug management of psychiatric emergencies related to adverse effect of prescribing, NMS, SS, akathisia

- 3.4.8. Adverse event reporting
- 3.4.9. Social and legal implications in prescribing

4. Classification and Assessment in Psychiatry

Demonstrate knowledge of the assessment and classification of the major psychiatric disorders.

4.1. Descriptive psychopathology

- 4.1.1. Fundamental concepts
- 4.1.2. Consciousness and its disorders
- 4.1.3. Disorders of memory and cognition
- 4.1.4. Disorders of perception and reality distortion
- 4.1.5. Disorders of thinking
 - 4.1.5.1. Process
 - 4.1.5.2. Content
- 4.1.6. Disorders of self and body, including depersonalisation and derealisation
- 4.1.7. Disorders of language and speech
- 4.1.8. Disorders of affect and emotion
- 4.1.9. Disorders of movement, volition and execution

4.2. Classificatory systems

- 4.2.1. International Classification of Diseases (ICD) and Diagnostic and Statistical Manual of Mental Disorders (DSM) as related to psychiatric diagnostics
- 4.2.2. International Classification of Functioning, Disability and Health (ICF)
- 4.2.3. Special needs education

4.3. Clinical assessment

- 4.3.1. History taking
- 4.3.2. Examination of the mental state
- 4.3.3. Physical examination, including ability to identify and prioritise relevant clinical findings in routine psychiatric practice, including basic knowledge of primarily medical disorders which comprise prominent psychiatric symptomatology, endocrine disorders, neurological disorders
 - 4.3.3.1. Ordering and interpretation of routine laboratory investigations
 - 4.3.3.2. Research-based special investigations and findings, neuroendocrinology, imaging methods and correlates of psychopathology
- 4.3.4. Ability to assess biological, psychological and social factors in predisposition to and onset and maintenance of psychiatric disorders
- 4.3.5. Interpretation of psychopathology and other findings within specific frameworks
 - 4.3.5.1. Psychodynamic, such as defence mechanisms, including transference and countertransference
 - 4.3.5.2. Cognitive and behavioural
 - 4.3.5.3. Theories relevant to systemic therapy and other therapeutic frameworks
- 4.3.6. Rating scales in research and routine psychiatric practice
 - 4.3.6.1. Diagnostic scales linked to structured assessment
 - 4.3.6.2. Symptom-level scales for establishing 'caseness'
 - 4.3.6.3. Symptom-change scales for monitoring course
 - 4.3.6.4. Self- versus clinician-administered scales and semi-structured interviews
 - 4.3.6.5. Likert and visual analogue scales

- 4.3.7. Risk assessment and safety planning, understanding of the evidence base, principles including predictive values and principles of co-producing or mutually agreed safety plans

Paper B

Paper B in the MRCPsych assesses clinical topics, a basic degree of sub-specialities of psychiatry and the principles of research methods, statistics, epidemiology and evidence-based practice.

5. Organisation and Delivery of Psychiatric Services

Demonstrate knowledge of the core aspects of service delivery within the United Kingdom.

- 5.1. Nature and process of providing care in mental health services
 - 5.1.1. Application of multidisciplinary team approaches
 - 5.1.2. Psychiatrist's role in treatment and coordination of the various treatment processes involved
 - 5.1.3. Medical, psychological and social interventions and their relevance to the management of psychiatric disorders
- 5.2. Preventative strategies in psychiatric disorders and where these exist
- 5.3. Provision of specific treatments
 - 5.3.1. Indications, benefits, risks and outcomes of ECT
 - 5.3.2. Indications, benefits, risks and outcomes of DBS, rTMS and psychosurgery
 - 5.3.3. Practical aspects of ECT, DBS, rTMS and psychosurgery

- 5.4. Assessment of need for psychiatric services within a community and population health concepts
- 5.5. Essential components of a rehabilitation service, the specific patient needs and disabilities that can be assisted by psychiatric rehabilitation
- 5.6. Human rights and mental health
 - 5.6.1. General principles of capacity and consent to treatment
 - 5.6.2. Ethical issues including seclusion, confidentiality and the implications of 'duty to warn'
 - 5.6.3. Human rights legislation as it effects patients, psychiatric practice, restrictions on liberty and aspects of human rights legislation
- 5.7. Medicolegal issues in psychiatry including abuse of vulnerable adults, management of finance and property, driving with mental disorders and the assessment of capacity to make health, social care and civil decisions
- 5.8. Cultural competence and accessibility in psychiatric care, including the influence of cultural, spiritual, religious and migration status factors on help seeking, engagement, assessment and care pathways

6. General Adult Psychiatry

Demonstrate knowledge of the assessment and treatment of disorders presenting in adulthood, including a general knowledge of subspecialist areas.

6.1. Prevalence, incidence, aetiology, presentation, treatment and outcome of psychiatric disorder in adulthood

6.1.1. Schizophrenia and other primary psychotic disorders

- 6.1.1.1. Prevalence
- 6.1.1.2. Aetiology
- 6.1.1.3. Presentation
- 6.1.1.4. Treatment
- 6.1.1.5. Outcome

6.1.2. Mood Disorders

- 6.1.2.1. Prevalence
- 6.1.2.2. Aetiology
- 6.1.2.3. Presentation
- 6.1.2.4. Treatment
- 6.1.2.5. Outcome

6.1.3. Anxiety and fear related disorders

- 6.1.3.1. Prevalence
- 6.1.3.2. Aetiology
- 6.1.3.3. Presentation
- 6.1.3.4. Treatment
- 6.1.3.5. Outcome

6.1.4. Obsessive compulsive and related disorders

6.1.4.1. Prevalence

6.1.4.2. Aetiology

6.1.4.3. Presentation

6.1.4.4. Treatment

6.1.4.5. Outcome

6.1.5. Disorders specifically associated with stress

6.1.5.1. Prevalence

6.1.5.2. Aetiology

6.1.5.3. Presentation

6.1.5.4. Treatment

6.1.5.5. Outcome

6.1.6. Dissociative disorders

6.1.6.1. Prevalence

6.1.6.2. Aetiology

6.1.6.3. Presentation

6.1.6.4. Treatment

6.1.6.5. Outcome

6.1.7. Eating disorders

6.1.7.1. Prevalence

6.1.7.2. Aetiology

6.1.7.3. Presentation

6.1.7.4. Treatment

6.1.7.5. Outcome

6.1.8. Disorders of bodily distress and bodily experience

6.1.8.1. Prevalence

6.1.8.2. Aetiology

6.1.8.3. Presentation

6.1.8.4. Treatment

6.1.8.5. Outcome

6.1.9. Personality disorders

6.1.9.1. Prevalence

6.1.9.2. Aetiology

6.1.9.3. Presentation

6.1.9.4. Treatment

6.1.9.5. Outcome

6.1.10. Other psychiatric disorders

6.1.10.1. Prevalence

6.1.10.2. Aetiology

6.1.10.3. Presentation

6.1.10.4. Treatment

6.1.10.5. Outcome

6.2. Assessment and management of disorders related to pregnancy, childbirth and the reproductive menstrual cycle

- 6.2.1. Assessment of common psychiatric disorders which present in the perinatal period, understanding changes in prevalence and increased risk of new presentation or relapse of psychosis, depression, anxiety and OCD in the postnatal period
- 6.2.2. Ability to adapt risk assessment to consider the perinatal context, including risks of neglect and harm to baby as well as risks to self
- 6.2.3. Management of psychiatric emergencies in the perinatal period
- 6.2.4. Prescribing in pregnancy and breastfeeding, safety profile of common psychiatric medications in the perinatal period, alterations in pharmacokinetics and dynamics during the perinatal period
- 6.2.5. Assessment and management of the impact of perinatal mental illness on bonding and attachment
- 6.2.6. Assessment and management of psychiatric symptoms and patterns of presentation related to the menstrual cycle and menopause. Includes relevant investigations and pharmacological, psychological and social management strategies

6.3. Liaison psychiatry

- 6.3.1. Psychiatric assessment and management of patients with physical illness
- 6.3.2. Advice to specialist medical services
- 6.3.3. Psychiatric consequences and aspects of brain disease, damage, stroke and dysfunction
- 6.3.4. Medically unexplained symptoms
- 6.3.5. End of life care and bereavement support

6.4. Emergency psychiatry

- 6.4.1. Self-harm, suicide, crisis presentations, and the assessment and management of acute and chronic risk

- 6.4.2. Theory and practice of crisis intervention and home treatment
- 6.4.3. Differential diagnosis in acute psychiatric emergencies
- 6.4.4. Treatment methods in emergency situations including the use of appropriate legislation
- 6.5. Psychosexual health
 - 6.5.1. Non-organic sexual dysfunction, including lack or loss of sexual desire, lack of sexual enjoyment and failure of genital response
 - 6.5.2. Gender incongruence

7. Old Age Psychiatry

Demonstrate knowledge of the aspects of psychiatric disorders, their presentation and treatment in older people.

- 7.1. Demographic population changes in the UK and worldwide
- 7.2. Principles of service provision
 - 7.2.1. Multidisciplinary team working as it relates to an older population
 - 7.2.2. Relationships with and provision by social services and voluntary care sector
 - 7.2.3. Liaison with medical specialists
 - 7.2.4. Roles and responsibilities of carers
 - 7.2.5. Frailty and physical co-morbidity in older people
- 7.3. Specialist aspects of assessment of mental health in older people
- 7.4. Psychiatric aspects of physical disease
 - 7.4.1. Neurological disorders such as Parkinson's disease and Huntington's disease
 - 7.4.2. Cerebrovascular disease and sensory impairment
 - 7.4.3. Emotional reactions to illness and chronic ill-health
 - 7.4.4. Secondary and reversible causes of cognitive impairment
- 7.5. Prevalence, incidence, clinical features, differential diagnosis, aetiology, management and prognosis of the following disorders occurring in older people
 - 7.5.1. Alzheimer's disease
 - 7.5.1.1. Prevalence
 - 7.5.1.2. Aetiology
 - 7.5.1.3. Presentation

7.5.1.4. Treatment

7.5.1.5. Outcome

7.5.2. Vascular dementia

7.5.2.1. Prevalence

7.5.2.2. Aetiology

7.5.2.3. Presentation

7.5.2.4. Treatment

7.5.2.5. Outcome

7.5.3. Dementia with Lewy Bodies and Parkinsons disease dementia

7.5.3.1. Prevalence

7.5.3.2. Aetiology

7.5.3.3. Presentation

7.5.3.4. Treatment

7.5.3.5. Outcome

7.5.4. Frontotemporal dementia

7.5.4.1. Prevalence

7.5.4.2. Aetiology

7.5.4.3. Presentation

7.5.4.4. Treatment

7.5.4.5. Outcome

7.5.5. Mild neurocognitive disorders, amnesic disorder and delirium

7.5.5.1. Prevalence

- 7.5.5.2. Aetiology
- 7.5.5.3. Presentation
- 7.5.5.4. Treatment
- 7.5.5.5. Outcome

7.5.6. Late life psychosis

- 7.5.6.1. Prevalence
- 7.5.6.2. Aetiology
- 7.5.6.3. Presentation
- 7.5.6.4. Treatment
- 7.5.6.5. Outcome

7.5.7. Mood disorders

- 7.5.7.1. Prevalence
- 7.5.7.2. Aetiology
- 7.5.7.3. Presentation
- 7.5.7.4. Treatment
- 7.5.7.5. Outcome

7.5.8. Anxiety and fear related disorders

- 7.5.8.1. Prevalence
- 7.5.8.2. Aetiology
- 7.5.8.3. Presentation
- 7.5.8.4. Treatment
- 7.5.8.5. Outcome

7.5.9. Substance use disorders

7.5.9.1. Prevalence

7.5.9.2. Aetiology

7.5.9.3. Presentation

7.5.9.4. Treatment

7.5.9.5. Outcome

7.5.10. Other mental disorders

7.5.10.1. Prevalence

7.5.10.2. Aetiology

7.5.10.3. Presentation

7.5.10.4. Treatment

7.5.10.5. Outcome

7.6. Suicide and attempted suicide in older people

7.7. Personality dysfunction in older people

7.8. Psychotherapy with older people, adaptations, differences in therapy, transference and countertransference issues

7.9. Bereavement and adjustment disorders

7.10. Sleep disorders in older people

7.11. Psychosexual health in older people

8. Psychotherapy

Demonstrate knowledge and understanding of key concepts, principles and techniques, for a range of psychological therapies and therapeutic and relational approaches in psychiatry, as well as key developments in the field.

8.1. Psychodynamic psychotherapy

- 8.1.1. Psychoanalytic theory, psychodynamic theory and contemporary practice
- 8.1.2. Impact of childhood, lifetime and intergenerational experiences of nurture, adversity, trauma and socio-cultural influences on shaping personality, attachment style, mental health and resilience
- 8.1.3. Development of collaborative therapeutic alliance, therapeutic relationship, therapeutic frame, containment, object relations, defences, transference-countertransference, supportive and exploratory techniques, interpretation, mourning and ending processes, working through and processes of psychic change and their application within psychotherapy and psychiatric practice
- 8.1.4. Role of exploratory psychodynamic approaches within a stepped care approach to psychological therapies, including for recovery from complex trauma
- 8.1.5. Principles of and indications for brief and long-term psychodynamic therapy or more intensive psychoanalytic approaches
- 8.1.6. Principles of adapted and integrative short and long-term therapeutic approaches, including dynamic interpersonal therapy (DIT), psychodynamic interpersonal therapy (PIT), mentalisation based therapy (MBT), transference focused therapy (TFP), cognitive analytic therapy (CAT), therapeutic communities (TCs), neuropsychanalysis
- 8.1.7. Application of neuroscience including affective neuroscience, predictive processes and active inference to psychotherapeutic practice

8.2. Cognitive behavioural therapies (CBT)

8.2.1. Core CBT techniques

8.2.1.1. Collaborative working

8.2.1.2. Socratic dialogue

8.2.1.3. Psychoeducation, homework, agenda and goal setting

8.2.1.4. Measures of change

8.2.1.5. Shared formulation

8.2.1.5.1. Development of schema

8.2.1.5.2. Working assumptions or rules

8.2.1.6. Five factor model including situation, thoughts, behaviour, emotions and physical symptoms

8.2.2. CBT treatment models for different conditions

8.2.2.1. CBT for depression, including withdrawal and avoidance, behavioural activation, negative thoughts and techniques supporting change

8.2.2.2. CBT for anxiety, including anxiety as a response to threat, role of avoidance and safety behaviours in maintaining anxiety and treatment techniques, including psychoeducation, cognitive techniques, graded exposure, exposure and response prevention (ERP), behavioural experiments and acceptance

8.2.3. Third wave developments, including mindfulness, compassion focused therapy (CFT), acceptance and commitment therapy (ACT)

8.2.4. Trauma focused work, including eye movement desensitisation and reprocessing (EMDR) for PTSD, models for complex PTSD, staged approaches addressing stabilisation, trauma processing and recovery

8.2.5. Principles of dialectical behaviour therapy (DBT)

8.3. Family and systemic therapy

- 8.3.1. General systems theory and models of family therapy including dynamic, structural, strategic, psychoeducation and behavioural
- 8.3.2. Core techniques, including communication training, reframing, genograms, role-playing, behavioural interventions and psychoeducation
- 8.3.3. Attachment perspectives on family therapy
 - 8.3.3.1. Multi-systemic family therapy
 - 8.3.3.2. Family work for psychosis

8.4. Service delivery and evaluation in psychotherapy

- 8.4.1. Specific and non-specific effects in psychotherapy and psychotherapeutic psychiatry
- 8.4.2. Sequencing, frequency and duration of interventions
- 8.4.3. Outcome research, types and time course of outcome studies
- 8.4.4. Use of guidelines and research evidence
- 8.4.5. Patient involvement
- 8.4.6. Approaches to increasing patient access and choice

8.5. Group therapies

- 8.5.1. Small and large group dynamics, matrix, basic assumption and working groups, therapeutic factors, mirroring, resonance, scapegoating, anti-group
- 8.5.2. Role of groups in different treatment approaches
 - 8.5.2.1. Supportive and peer support
 - 8.5.2.2. Skills based
 - 8.5.2.3. Exploratory and psychodynamic

- 8.5.3. Principles of therapeutic communities and enabling environments
- 8.5.4. The unconscious in work dynamics within teams and organisationally, organisational defences, approaches to containment of anxiety in organisations, impact on patients and staff of structural factors, including service organisation, uses of language and organisational resilience
- 8.5.5. Application of therapeutic principles to service design and development
- 8.6. Other therapeutic and skills-based approaches
 - 8.6.1. Narrative and dialogical approaches, including narrative therapy, open dialogue, psychoeducation, solution focused therapy, transference focused psychotherapy (TFP), structured clinical management (SCM), general psychiatric management (GPM), arts therapies, interpersonal therapy (IPT), sensorimotor therapy, ecotherapy and psychedelic assisted psychotherapy
 - 8.6.2. Online, digital and technology-enabled therapies and the impact of technology and remote working on therapeutic alliance
- 8.7. Psychotherapeutic psychiatry
 - 8.7.1. Psychiatric presentations in different inpatient and community settings, across the life course, related to social and cultural difference, and the role of cognitive, behavioural, systemic, contextual, psychodynamic and relational factors
 - 8.7.2. Therapeutic relationships, building a clinical relationship, continuity of care, transitions and endings
 - 8.7.3. Theories of personality development, change and levels of personality organisation, in relation to diagnosis, service delivery including psychotherapeutic approaches in the treatment of personality disorder
 - 8.7.4. Relationships between psychological processes and mental health symptoms, including processes of loss and mourning, adaptation and resilience

- 8.7.5. Psychological distress on bodily health including in eating disorders, bodily distress and medically unexplained symptoms
- 8.7.6. Psychological approaches to self-harm, suicidal ideation, suicide and violence, the impact of these events upon staff and family members and suitable approaches for support and reflective practice
- 8.7.7. Key psychological factors, including relational factors in building a biopsychosocial formulation as an intervention and basis for management planning and for engaging with uncertainty and complexity
- 8.7.8. Principles and applications of relational prescribing, working with polypharmacy and treatment resistance, the pharmacotherapeutic alliance, psychological and relational factors affecting whether and how to prescribe and deprescribe
- 8.7.9. Approaches to clinician self-care and development, reflective practice, Balint groups, consultation with teams, working with teams and organisations
- 8.7.10. Public health implications of psychotherapeutic practice
- 8.7.11. Impact of issues of power, socio-cultural factors, diversity, ethical and legal considerations

9. Child and Adolescent Psychiatry

Demonstrate knowledge of the assessment and treatment of children and adolescents, as well as disorders that are usually first diagnosed in infancy, childhood or adolescence and developmental disorders.

9.1. Effects of parental mental disorder on children

- 9.1.1. Effect of parental mental disorder at different child developmental stages
- 9.1.2. Household dysfunction and impact on child development and functioning
- 9.1.3. Cultural variations in aetiology and management

9.2. Short and long-term effects of ACE on development and functioning, including parental loss, child abuse, chronic or life-threatening illness

9.3. Principles of service provision

- 9.3.1. Multidisciplinary team working as it relates to children and young people
- 9.3.2. Relationships with and provision by social services and voluntary care sector
- 9.3.3. Liaison with medical specialists

9.4. Child protection

- 9.4.1. Needs of developing children and how these evolve over time
- 9.4.2. Types of child abuse
- 9.4.3. Psychiatrist's role in safeguarding children

9.5. Physical health and psychiatric disorder

- 9.5.1. Psychiatric presentation of physical illness
- 9.5.2. Interaction between psychiatric disorder and physical illness

- 9.6. Aetiological influences in child and adolescent psychiatry, including individual, familial, social, environmental and their interactions
- 9.7. Prevalence and incidence, aetiology, presentation, treatments and outcome of disorders occurring in childhood and adolescence including how disorders relate to behaviours including self-harm, school avoidance and contexts
 - 9.7.1. Neurodevelopmental disorders
 - 9.7.1.1. Prevalence
 - 9.7.1.2. Aetiology
 - 9.7.1.3. Presentation
 - 9.7.1.4. Treatment
 - 9.7.1.5. Outcome
 - 9.7.2. Tic disorders
 - 9.7.2.1. Prevalence
 - 9.7.2.2. Aetiology
 - 9.7.2.3. Presentation
 - 9.7.2.4. Treatment
 - 9.7.2.5. Outcome
 - 9.7.3. Psychotic disorders
 - 9.7.3.1. Prevalence
 - 9.7.3.2. Aetiology
 - 9.7.3.3. Presentation
 - 9.7.3.4. Treatment
 - 9.7.3.5. Outcome

9.7.4. Mood disorders

9.7.4.1. Prevalence

9.7.4.2. Aetiology

9.7.4.3. Presentation

9.7.4.4. Treatment

9.7.4.5. Outcome

9.7.5. Anxiety and fear related disorders

9.7.5.1. Prevalence

9.7.5.2. Aetiology

9.7.5.3. Presentation

9.7.5.4. Treatment

9.7.5.5. Outcome

9.7.6. Obsessive compulsive and related disorders

9.7.6.1. Prevalence

9.7.6.2. Aetiology

9.7.6.3. Presentation

9.7.6.4. Treatment

9.7.6.5. Outcome

9.7.7. Attachment disorders

9.7.7.1. Prevalence

9.7.7.2. Aetiology

9.7.7.3. Presentation

9.7.7.4. Treatment

9.7.7.5. Outcome

9.7.8. Eating disorders

9.7.8.1. Prevalence

9.7.8.2. Aetiology

9.7.8.3. Presentation

9.7.8.4. Treatment

9.7.8.5. Outcome

9.7.9. Substance use disorders

9.7.9.1. Prevalence

9.7.9.2. Aetiology

9.7.9.3. Presentation

9.7.9.4. Treatment

9.7.9.5. Outcome

9.7.10. Conduct disorders

9.7.10.1. Prevalence

9.7.10.2. Aetiology

9.7.10.3. Presentation

9.7.10.4. Treatment

9.7.10.5. Outcome

9.7.11. Other childhood mental disorders

9.7.11.1. Prevalence

9.7.11.2. Aetiology

- 9.7.11.3. Presentation
- 9.7.11.4. Treatment
- 9.7.11.5. Outcome
- 9.8. Continuities and transitions of child mental health conditions into adult life
- 9.9. Indications and contra-indications for different treatment options
 - 9.9.1. Indications and contra-indications for in-patient care
 - 9.9.2. Self-harm, suicide, crisis presentations, and the assessment and management of acute and chronic risk

10. Addictions Psychiatry

Demonstrate knowledge of substance use disorders and addictive behaviours.

- 10.1. Basic pharmacology, neurobiology, classification and epidemiology of alcohol, cannabinoids, opioids, sedatives, stimulants, caffeine, hallucinogens, nicotine, volatile inhalants, empathogens, dissociative drugs, prescribed and over-the-counter medicines, image- and performance-enhancing drugs, and novel psychoactive substances
- 10.2. Biopsychosocial and trauma-informed explanations for initiation, continuation, dependence, recovery and relapse in alcohol and drug use
- 10.3. Recognition, assessment and management of harmful and dependent alcohol use, including withdrawal, detoxification, relapse prevention, and management of physical health complications
- 10.4. Recognition, assessment and management of drug use disorders, including patterns of use, intoxication, dependence, and withdrawal
- 10.5. Interaction between alcohol and drug use and psychiatric illness, including dual diagnosis and multimorbidity
- 10.6. Prescribing in addictions psychiatry, including legal restrictions on controlled medicines, medication-assisted treatment, overdose prevention, and monitoring
- 10.7. Recovery-oriented interventions, including motivational interviewing, relapse prevention, harm reduction, carer involvement, and peer support, across a wide range of environments including community, residential and inpatient settings
- 10.8. Culturally appropriate, trauma-informed and non-stigmatising strategies for prevention, early intervention, harm reduction and health promotion
- 10.9. Assessment and management of non-substance addictive behaviours and related syndromes, including gambling and gaming disorders

11. Forensic Psychiatry

Demonstrate knowledge and understanding of forensic psychiatry.

11.1. Relationship between crime and mental disorder

- 11.1.1. Crimes and offences committed by mentally disordered offenders and their psychiatric relevance, particularly homicide, infanticide, assault, criminal damage, sexual offences, arson, stalking and other crimes of violence
- 11.1.2. Relationships between specific disorders and offending behaviour
 - 11.1.2.1. Neurodevelopmental disorders
 - 11.1.2.2. Schizophrenia and other primary psychotic disorders
 - 11.1.2.3. Mood disorders
 - 11.1.2.4. Substance use disorders
 - 11.1.2.5. Personality disorders
 - 11.1.2.6. Epilepsy
 - 11.1.2.7. Paraphilic disorders
- 11.1.3. Mental disorders, diversity and individual differences in offending
 - 11.1.3.1. Age
 - 11.1.3.2. Sex and gender
 - 11.1.3.3. Communication disabilities
 - 11.1.3.4. Physical disabilities
 - 11.1.3.5. Neurodevelopmental disorders
- 11.1.4. Effect of victimisation and vulnerability, including anxiety states, post-traumatic stress disorder, suggestibility, anger and aggressive behaviour

11.1.5. Equality legislation and reasonable adjustments

11.2. Psychiatry and the criminal justice system

11.1.1. Psychiatrist's role in the assessment of mentally disordered offenders, during arrest, prior to conviction, prior to sentencing and post sentencing

11.1.2. Psychiatrist's role in assessing criminal responsibility and fitness to plead

11.1.3. Medicolegal defences including diminished responsibility, insanity and automatism

11.1.4. Options for diversion from custody at different stages of proceedings

11.1.5. Principles in providing evidence to the court both in written reports and oral evidence

11.3. Practicing psychiatry in a secure setting

11.1.1. Principles and therapeutic application of environmental, structural, procedural and relational security

11.1.2. Essential components of a forensic service, the specific patient needs and disabilities that can be assisted by such a service provision

11.1.3. Prevalence of psychiatric disorder in prison populations, suicide in prisoners and psychiatric treatment in prison settings

11.1.4. Risk assessment and management in forensic psychiatric, and the use of validated and recognised risk assessment tools including HCR-20, PCL-R

11.1.5. Managing mentally disordered offenders discharged into the community

12. Intellectual Disability

Demonstrate knowledge and understanding of intellectual disability.

12.1. Service Provision

- 12.1.1. Normalisation, related social theories and their influence on service development
- 12.1.2. Transition from institutional to an individualised, needs-led approach

12.2. Epidemiology

- 12.1.1. Prevalence and incidence of intellectual disability in the general population
- 12.1.2. Prevalence and incidence of superadded behavioural, psychiatric and other impairments
- 12.1.3. Factors which may account for observed high rates of psychiatric or behavioural disorders

12.3. Aetiology

- 12.1.1. Biological causes, including genetic and environmental factors
- 12.1.2. Clinical characteristics of the more common genetic disorders causing intellectual disability
- 12.1.3. Influence of psychosocial factors on intellectual and emotional development, including concept of secondary handicap

12.4. Clinical

- 12.1.1. Assessment and communication with people with intellectual disabilities
- 12.1.2. Presentation and diagnosis of psychiatric illness and behavioural disorder in people with intellectual disability, including the concept of diagnostic overshadowing
- 12.1.3. Psychological aspects

- 12.1.3.1. Psychological methods of assessment
- 12.1.3.2. Psychological theories as to the cause of problem behaviours
- 12.1.3.3. Behavioural modification techniques

- 12.1.4. Psychiatric treatments
 - 12.1.4.1. Pharmacological treatments
 - 12.1.4.2. Psychological therapies
 - 12.1.4.3. Other interventions

- 12.1.5. Application of a multidisciplinary team approach to the management of mental health problems in people with intellectual disability
- 12.1.6. Specific syndromes, genetic disorders and their association with psychiatric or behavioural disorders and behavioural phenotypes
- 12.1.7. Impact of intellectual disability on the family and the psychological consequences of having a child with an intellectual disability

13. Research Methods, Statistics, Critical Review and Evidence-Based Practice

Demonstrate knowledge of the principles of research methods, statistics, epidemiology and evidence-based practice.

13.1. Introductory concepts

- 13.1.1. Critically appraise different studies and know key issues and biases for different studies
- 13.1.2. Different sources and hierarchy of evidence
- 13.1.3. Difference between various electronic databases
- 13.1.4. Cataloguing of research for efficient retrieval
- 13.1.5. Formulating clinical questions using the patient exposure or intervention, comparison, outcome, time (PECO(t)) formula
- 13.1.6. Approaches for arguing a cause-and-effect relationship
- 13.1.7. Strategies for enabling the patient to make an informed decision

13.2. Epidemiological study

13.2.1. Basic epidemiology

- 13.2.1.1. Sources of bias and strategies to overcome them
- 13.2.1.2. Confounding and strategies to reduce risk of confounding
- 13.2.1.3. Interpreting basic epidemiology
 - 13.2.1.3.1. Mortality statistics
 - 13.2.1.3.2. Crude death rate
 - 13.2.1.3.3. Death rate
 - 13.2.1.3.4. Mortality rate
 - 13.2.1.3.5. Age adjusted death rate
 - 13.2.1.3.6. Standardised mortality ratio

13.2.2. Descriptive Epidemiology

13.2.2.1. Case reports

13.2.2.2. Case series

13.2.2.3. Cross sectional studies including survey

13.2.2.3.1. Incidence

13.2.2.3.2. Prevalence

13.2.2.3.3. Critically appraise cross-sectional studies including survey

13.2.2.4. Ecological and correlational studies

13.2.2.5. Critically appraise ecological and correlational studies

13.2.3. Analytical Epidemiology

13.2.3.1. Case control study

13.2.3.1.1. Sampling techniques methodology

13.2.3.1.2. Limitations and strengths

13.2.3.1.3. Biases

13.2.3.1.4. Confounding

13.2.3.1.5. Calculation of odds ratio

13.2.3.1.6. Nested case control study

13.2.3.1.7. Critically appraise case-control study

13.2.3.2. Cohort study

13.2.3.2.1. Types of cohort study

13.2.3.2.2. Sampling techniques methodology

13.2.3.2.3. Limitations and strengths

13.2.3.2.4. Biases

13.2.3.2.5. Calculation of relative risk

13.2.3.2.6. Critically appraise cohort study

13.2.3.3. Self-controlled case series (SCCS) study

13.2.3.3.1. Methodology of SCCS

13.2.3.3.2. Analysis of SCCS

13.2.3.3.3. Strengths of SCCS

13.2.3.3.4. Critically appraise SCCS

13.2.4. Causation in epidemiological studies

13.2.4.1. Bradford Hill criteria

13.2.4.2. Koch's postulates

13.2.4.3. Rothman's causal pies model

13.2.4.4. Susser's framework for causal inference

13.2.4.5. Other causation theories in epidemiological studies

13.3. Experimental studies

13.3.1. Controlled and uncontrolled trials

13.3.1.1. RCT study

13.3.1.2. Sampling techniques methodology

13.3.1.3. Limitations and strengths

13.3.1.4. Randomisation techniques such as simple, block, stratified, minimisation, cluster, adoptive

13.3.1.5. Blinding

13.3.1.6. Handling missing data

13.3.1.6.1. Last observation carried forward

13.3.1.6.2. Sensitivity analysis

13.3.1.6.3. Multiple imputation

- 13.3.1.6.4. Best case analysis
- 13.3.1.6.5. Worst case analysis
- 13.3.1.6.6. Other techniques

- 13.3.1.7. Calculation of absolute benefit increase
- 13.3.1.8. Relative risk
- 13.3.1.9. Number needed to treat and number needed to harm
- 13.3.1.10. Relative benefit increase
- 13.3.1.11. Absolute risk reduction
- 13.3.1.12. Relative risk reduction
- 13.3.1.13. Critically appraise controlled and uncontrolled trials

- 13.3.2. n of 1 trial
- 13.3.3. Critically appraise n of 1 trial
- 13.3.4. Pragmatic trial
- 13.3.5. Critically appraise pragmatic trial
- 13.3.6. Other experimental studies
 - 13.3.6.1. Single-subject trials
 - 13.3.6.2. Pilot trials
 - 13.3.6.3. Adaptive trials
 - 13.3.6.4. Factorial trials
 - 13.3.6.5. Cluster randomised trials
 - 13.3.6.6. Crossover trials
 - 13.3.6.7. Critically appraise experimental studies

- 13.3.7. Internal and external validity of trials

13.3.8. Clinical trials and their stages

13.4. Systematic review

- 13.4.1. Difference between primary, secondary and meta-analysis
- 13.4.2. Extraction of studies from electronic databases
- 13.4.3. Heterogeneity, publication bias, funnel plot, quality assessment, meta-analysis, pooled odds ratio and sensitivity analysis
- 13.4.4. Role and limitations of meta-analysis to improve power and robustness of research
- 13.4.5. Difference between fixed and random effect models
- 13.4.6. Network meta-analysis
- 13.4.7. Critically appraise systematic review and meta-analysis

13.5. Diagnostic studies

- 13.5.1. Prevalence
- 13.5.2. Sensitivity
- 13.5.3. Specificity
- 13.5.4. Predictive values
- 13.5.5. Likelihood ratios and nomograms
- 13.5.6. Pre-test odds, post-test odds and probabilities
- 13.5.7. Receiver operating characteristic curve (ROC) and AUC
- 13.5.8. Validity
 - 13.5.8.1. Logical
 - 13.5.8.1.1. Face
 - 13.5.8.1.2. Content

13.5.8.2. Construct

13.5.8.2.1. Convergent

13.5.8.2.2. Divergent

13.5.8.3. Criterion

13.5.8.3.1. Concurrent

13.5.8.3.2. Predictive

13.5.9. Reliability

13.5.9.1. Test-retest

13.5.9.2. Inter-rater

13.5.9.3. Parallel form

13.5.9.4. Split half

13.5.10. Critically appraise diagnostic studies

13.6. Economic analysis

13.6.1. Cost minimisation analysis

13.6.2. Cost benefit analysis

13.6.3. Cost effectiveness analysis

13.6.4. Cost utility analysis

13.6.5. Cost consequence analysis

13.6.6. Incremental cost effectiveness ratio

13.6.7. Economic concepts

13.6.7.1. Indirect cost

13.6.7.2. Intangible cost

- 13.6.7.3. Opportunity cost
- 13.6.7.4. Discounting
- 13.6.7.5. Time trade-off
- 13.6.7.6. Standard gamble
- 13.6.7.7. Other concepts, including direct costs and discounting calculations

13.6.8. Critically appraise various types of economic evaluation studies

13.6.9. 'Sensitivity analysis' in the context of an economic evaluation

13.7. Qualitative research

- 13.7.1. Qualitative research methodologies including grounded theory, phenomenological, ethnographic and other methodologies
- 13.7.2. Sampling techniques, including convenience sampling, purposive sampling, quota sampling, snowball sampling, chain referral sampling, theoretical sampling, data saturation and other techniques
- 13.7.3. Data collection techniques, including semi structured interviews, in depth interviews, focus group, observation, diary methods, ethnographic interviews, role play and simulation, case study, voice recordings and other techniques
- 13.7.4. Data interpretation and analysis
 - 13.7.4.1. Thematic analysis
 - 13.7.4.2. Constant comparison
 - 13.7.4.3. Reserve engineered hypothesis
 - 13.7.4.4. Discourse analysis
 - 13.7.4.5. Triangulation
 - 13.7.4.6. Minimisation
 - 13.7.4.7. Reflexivity

- 13.7.4.8. Bracketing
- 13.7.4.9. Member checking
- 13.7.4.10. Content analysis

13.7.5. Conversion of qualitative data to quantitative data

- 13.7.5.1. Thurston scale
- 13.7.5.2. Likert scale
- 13.7.5.3. Visual analogue scale
- 13.7.5.4. Gutman scale

13.7.6. Mixed methods

13.7.7. Critically appraise various qualitative studies

13.8. Descriptive stats

- 13.8.1. Difference between sample and population
- 13.8.2. Type of data including binary, nominal, ordinal, interval and ratio
- 13.8.3. Difference between ratio odds rates
- 13.8.4. Measures of central tendency including mean, median and mode
- 13.8.5. Measures of dispersion and their calculations, including variance, standard deviation, standard error, range and outliers
- 13.8.6. Variance, standard deviation, standard error of the mean and median interquartile range and their calculations
- 13.8.7. Interpret and explain confidence interval for mean and proportions
- 13.8.8. Advantage of confidence intervals over p-values
- 13.8.9. Determining and displaying data distribution
 - 13.8.9.1. Normal distribution, skewness, kurtosis

- 13.8.9.2. Displaying graphical data including pie chart, bar chart, histogram, scatter plot, box or whisker plot
- 13.8.9.3. Tabular data, including 2x2 table, frequency table, frequency distribution
- 13.8.9.4. Different approach to determine the distribution of data

13.9. Differential and analytic statistics

- 13.9.1. Hypothesis testing including null and alternative
 - 13.9.1.1. Frequentist hypothesis testing
 - 13.9.1.2. Bayesian hypothesis testing
 - 13.9.1.3. Difference between Frequentist and Bayesian hypothesis testing
- 13.9.2. Establishing alpha level and p-values
- 13.9.3. Differences between parametric and non-parametric tests and examples
- 13.9.4. Tests of statistical significance, including parametric, non-parametric and binary tests, such as t-tests, ANOVA, ANCOVA, MANOVA, Wilcoxon signed rank test, Wilcoxon matched pairs signed test, Mann Whitney U test, Friedman test, Kruksal-Wallis ANOVA, Kolmogorov-Smirnov (K-S) test, post hoc significance tests, Fisher's exact test, chi-squared test, McNemar's test, Yates correction, one tailed test, two tailed test, tests for normality
- 13.9.5. Type I error, type II error, power calculation
- 13.9.6. Survival analysis
 - 13.9.6.1. Cox proportional hazards regression
 - 13.9.6.2. Log rank test
 - 13.9.6.3. Kaplan-Meier regression
 - 13.9.6.4. Interpret survival curves
 - 13.9.6.5. Median survival

13.9.7. Multiple testing and multiplicity

13.9.7.1. Family wise error

13.9.7.2. False discovery rate

13.10. Correlation and regression

13.10.1. Linear correlation

13.10.2. Pearson's correlation coefficient

13.10.3. Spearman's rank correlation coefficient

13.10.4. Kendall's correlation coefficient

13.10.5. Phi correlation coefficient

13.10.6. Point-biserial correlation

13.10.7. Phi coefficient

13.10.8. Partial correlation

13.10.9. Canonical correlation

13.10.10. Linear regression

13.10.11. Logistic regression

13.10.12. Multiple regression

13.10.13. Multilevel regression

13.10.14. Polynomial regression

13.10.15. Multivariate multiple regression

13.10.16. Non-linear regression

13.10.17. Quantile regression

13.10.18. Poisson regression

13.11. Clinical governance

13.11.1. Audit

13.11.1.1. Different steps of audit cycle

13.11.1.2. Difference between audit and research

13.11.2. Quality improvement

13.11.2.1. Plan-Do-Study-Act (PDSA) cycle

13.11.2.2. Difference between quality improvement and research

13.11.3. Service evaluation

13.11.4. Implications of clinical governance

13.12. Guidelines and reporting

13.12.1. Guidelines

13.12.1.1. Consolidated standards of reporting trials (CONSORT)

13.12.1.2. Quality of reporting of meta-analyses (QUORUM)

13.12.1.3. Standard for the reporting of diagnostic accuracy studies (STARD)

13.12.1.4. Preferred reporting items for systematic review and meta-analysis (PRISMA)

13.12.1.5. Standards for reporting qualitative research (SRQR)

13.12.2. Process for developing national guidelines, such as National Institute for Health and Care Excellence (NICE) and Scottish Intercollegiate Guidelines Network (SIGN) guidelines

13.12.3. Advantages and limitations of guidelines and protocols

13.13. Network analysis

- 13.13.1. Nodes (vertices)
- 13.13.2. Edges (links)
- 13.13.3. Network graph
- 13.13.4. Degree (connectivity)
- 13.13.5. Centrality measures
- 13.13.6. Clusters and communities
- 13.13.7. Paths
- 13.13.8. Network density
- 13.13.9. Network diameter
- 13.13.10. Network motifs
- 13.13.11. Network types
- 13.13.12. Subgraphs
- 13.13.13. Assortativity
- 13.13.14. Network visualisation
- 13.13.15. Connectivity and resilience

13.14. Research ethics

- 13.14.1. Good research practice
- 13.14.2. Research governance framework
- 13.14.3. Ethics approval for studies
- 13.14.4. Declarations of interest and funding
- 13.14.5. Research fraud

13.15. Artificial intelligence in research