

Diagnostic informatics

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**Systematic reviews of critical values in
key laboratory analytes 14 June 2019**

Delivering safe and effective test result communication, management and follow-up

- National Health & Medical Research Council partnership grant (APP1111925)
- Partners:
 - NSW Health Pathology (formerly South Eastern Area Laboratory Services (SEALS))
 - Australian Commission on Safety and Quality in Health Care
- Stakeholders
 - Royal College of Pathologists of Australasia (Pathology Information, Terminology and Units Standardisation)
 - Health Consumers NSW
 - Australian Association of Clinical Biochemists
 - Centre for Health Systems & Safety Research, Australian Institute of Health Innovation, Macquarie University



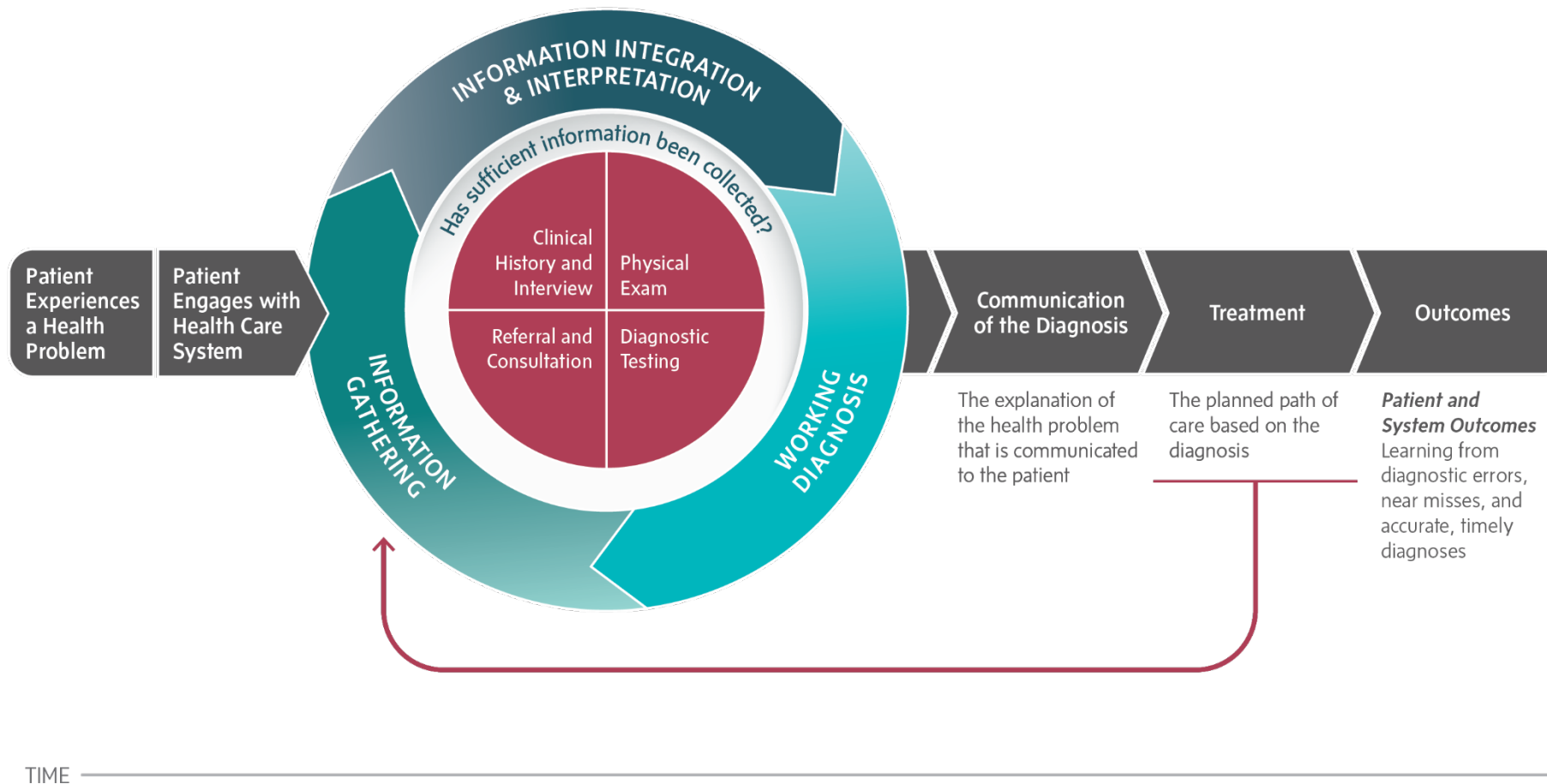
AUSTRALIAN COMMISSION
ON SAFETY AND QUALITY IN HEALTH CARE



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The diagnostic process



(Committee on Diagnostic Error in Health Care, Institute of Medicine, 2015)

Digital health

- The collection, storage, retrieval, transmission and utilisation of data, information and knowledge to support health care
- More than just the study of computers within medicine



Key patient safety concerns



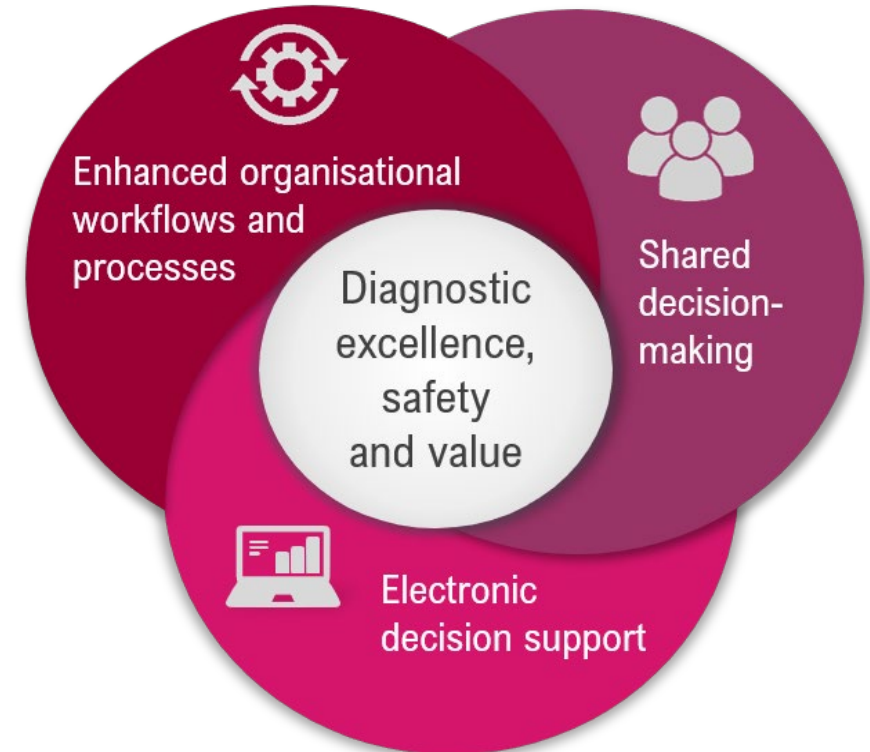
2019 Top 10 Patient Safety Concerns

1. Diagnostic Stewardship and Test Result Management Using EHRs
2. Antimicrobial Stewardship in Physician Practices and Aging Services
3. Burnout and Its Impact on Patient Safety
4. Patient Safety Concerns Involving Mobile Health
5. Reducing Discomfort with Behavioral Health
6. Detecting Changes in a Patient's Condition
7. Developing and Maintaining Skills
8. Early Recognition of Sepsis across the Continuum
9. Infections from Peripherally Inserted IV Lines
10. Standardizing Safety Efforts across Large Health Systems

Diagnostic informatics



- Dx testing, (laboratory medicine, anatomic pathology and medical imaging), generates information that is crucial to the prevention, diagnosis, prognosis and treatment of disease.
- Dx informatics is the role that that information technology plays in generating, gathering, integrating, interpreting and communicating clinical test data and information.
- This involves the:
 - selection of the appropriate test/referral to address a clinical question;
 - quality and efficiency of the analytical process;
 - interpretation, communication and follow-up of test results (including engagement with patients);
 - impact on enhancing the value of care and patient outcomes



Evidence-based medicine

- Conscientious, explicit and current use of best evidence
- Decision making based on science and research evidence
- Not opinion, past practice and precedent



What is a systematic review?



“...a review of the evidence on a clearly formulated question that uses systematic and explicit methods to identify, select and critically appraise relevant primary research, and to extract and analyse data from the data that are included in the review.”

(Cochrane Reviewers' Handbook 2004)

EBM's technological underpinnings*

- IT allows the rapid accumulation of evidence in summarised forms
- IT has made evidence accessible as never before
- IT has provided the infrastructural foundations for EBM



**Tudor Hart, The political economy of health care. A clinical perspective 2006*

Milestones

Deliverable I – Search strategy and PROSPERO registration (Week 4)

Deliverable II – Endnote library with final papers and PRISMA flowchart (Week 10)

Deliverable III – Report containing referenced background, results table and quality assessment of the evidence. (Week 16)



How to avoid going down in flames*

- Learn to walk before you run
- Foster team involvement
- Don't try and find the needle in the haystack
- Keep your head above water
- Don't reinvent the wheel



A beginner's guide to undertaking systematic reviews

Bambra C. *J Epidemiol Community Health* 2011; 65:14-19



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Thank you

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