

The OpenClinical platform for sharing best clinical practice: validation in mental health

Countless medical organisations around the world publish clinical practice guidelines (CPGs) covering much of modern medicine, including major collections from NICE in the UK and AHRQ in the USA. CPGs typically set out best practice as texts, pathway diagrams, checklists etc, based on authoritative reviews. Unfortunately, busy doctors and other healthcare professionals rarely have time to read and absorb lengthy CPGs. Despite the enormous investment, CPGs frequently do not achieve their potential benefits.

Published trials of PROforma applications

Clinical tasks	Trials and evaluations
Routine prescribing by GPs	Walton et al <i>British Medical Journal</i> 1996
Mammographic screening	Taylor et al <i>Medical Image Analysis</i> 1999
Genetic risk assessment	Emery et al <i>British Medical Journal</i> 1999, 2000
Genotyping and prescribing antiretrovirals	Tural et al, <i>AIDS</i> 2002
Chemotherapy prescribing for ALL	Bury et al, <i>B Journal of Haematology</i> 2005
Early referrals of suspected cancer	Bury et al PhD thesis (2006)
Cancer risk assessment, investigation	Patkar et al, <i>British Journal of Cancer</i> 2006
Hospitalisation decisions: asthma	Best Practice Advocacy Centre, NZ 2009
Genetic risk assessment, treatment planning	Glasspool et al, <i>J Cancer Education</i> 2010
Multidisciplinary decision making	Patkar et al, <i>BMJ Open</i> 2011
Investigation, diagnosis of thyroid nodules	Peleg et al, <i>Endocrine Practice</i> 2015
Diagnosis and treatment of stroke	Ranta et al, <i>Neurology</i> 2015
Shared decision-making in chemotherapy	Miles et al, <i>BMJ Open</i> 2017
Diagnosis of hyponatremia	Gonzales et al <i>Int J Med Informatics</i> 2017
Detection and Diagnosis of ophthalmic disease	G Chandrasekaran PhD Thesis (2017)
Kidney donor workup and eligibility	Knight et al <i>Transplantation</i> , (2018)

OpenClinical has developed a solution based on PROforma, an AI language for formalising clinical guidelines (JAMIA, 2003). This makes it possible to create and share executable cognitive models which can be used for actively managing care across clinical pathways and treatment plans in diverse clinical settings and specialties. Many PROforma applications have been successfully trialled (see table). These demonstrate a wide range of services to support best practice, from alerts and reminders to decision making and workflow management. They can also capture patient data to support analytics, machine learning and research.

NewMind feasibility study:

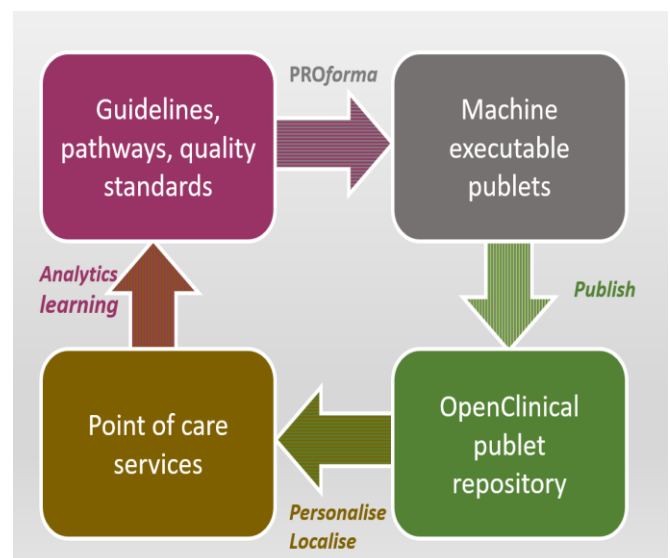
Phase 1 (completed)

- Establish service-user requirements
- Build prototypes for distributed services (patient view and professional view)

Phase 2

- Populate knowledge base to clinical strength (NICE)
- Develop role-based user interfaces (e.g. diary, speech, smartphone,)
- Pilot trial in controlled setting
- Technical demonstration of analytics and machine learning

OpenClinical development lifecycle



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