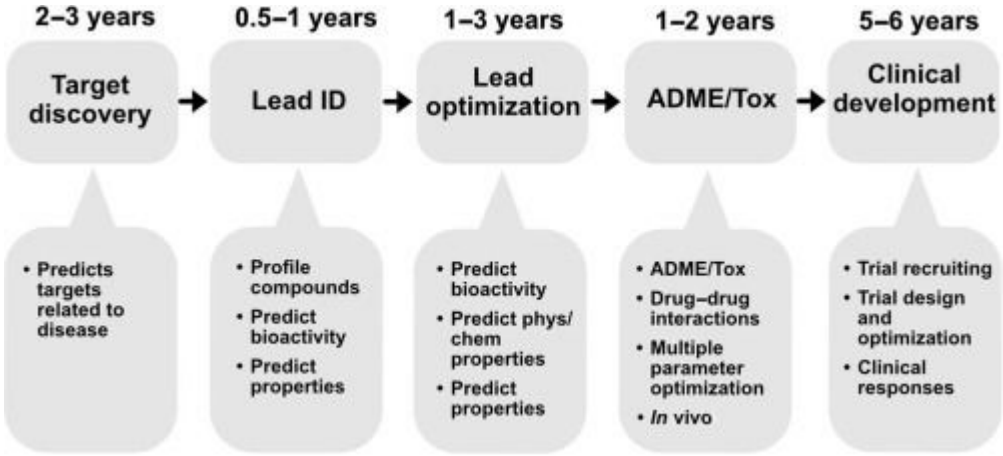
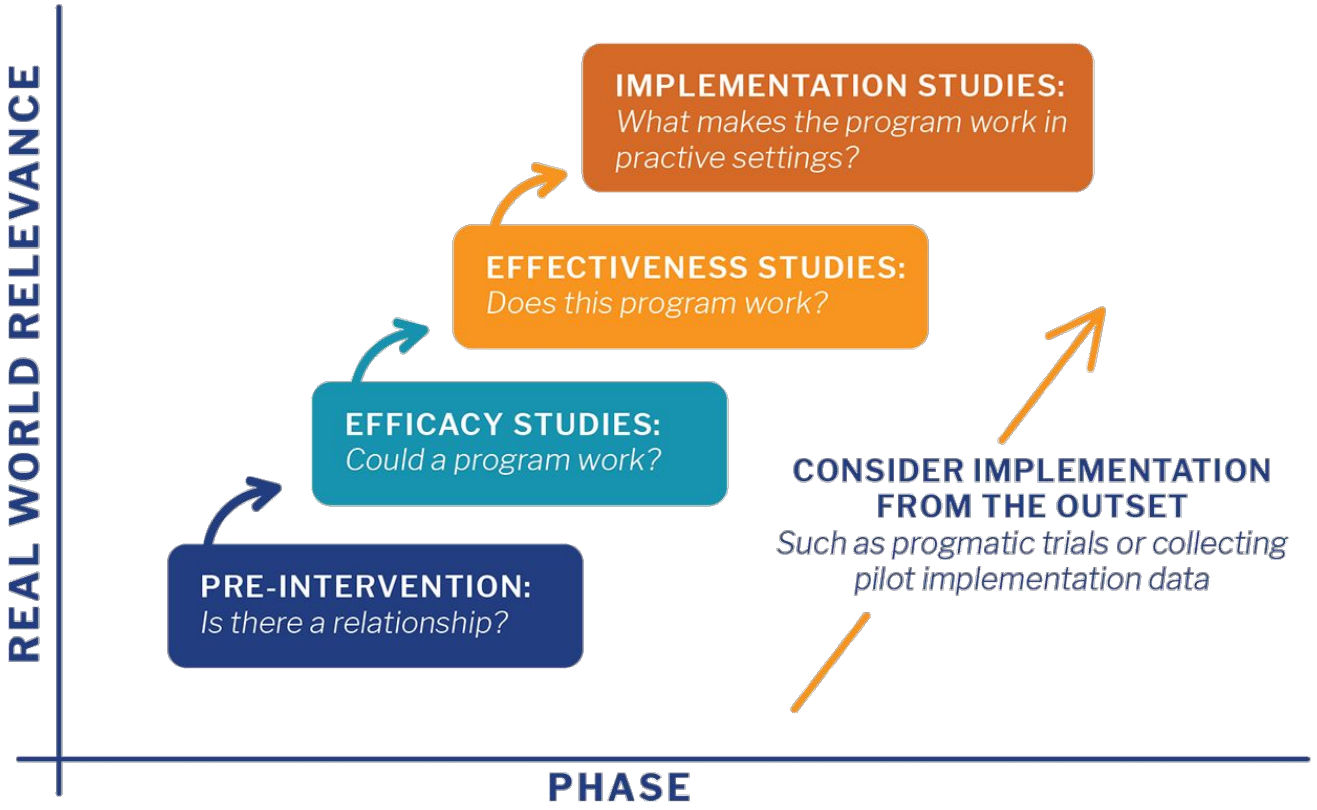
Proposal Class: Knowledge Translation

Transfer of research into practice is hard

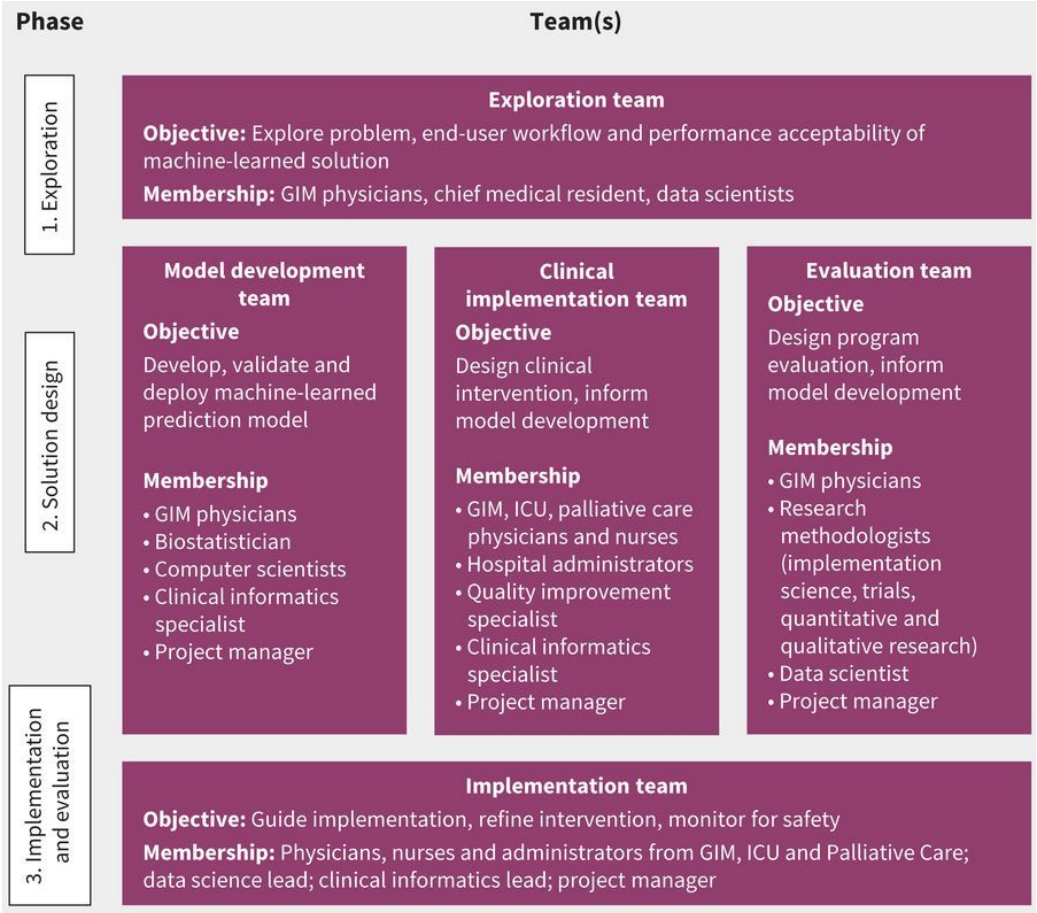
- 1922 Fleming discovers Penicillin (was he first?)
- 1938 Florey & Chain extract Penicillin
- 1940-1945 Animal and Human Trials
- 1945 onwards: Widespread use



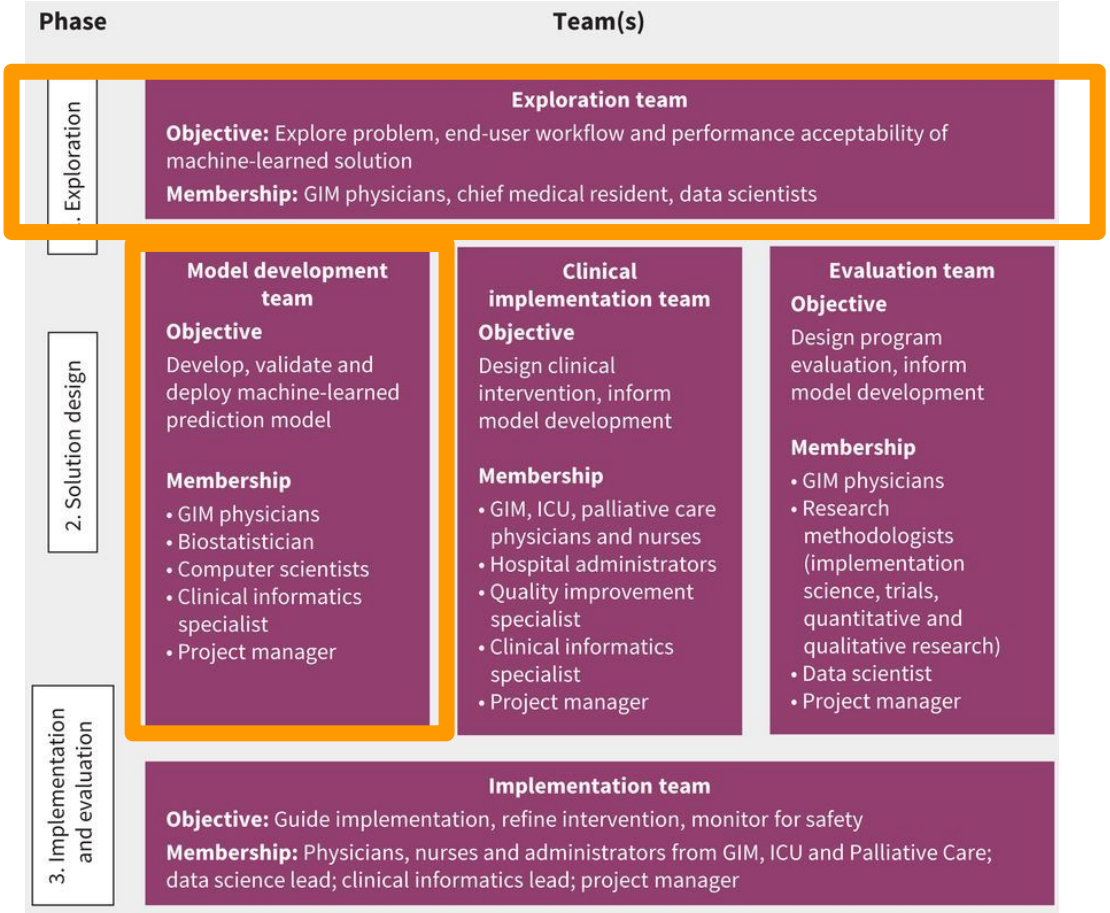
Many steps to implementation



Many disciplines/teams involved



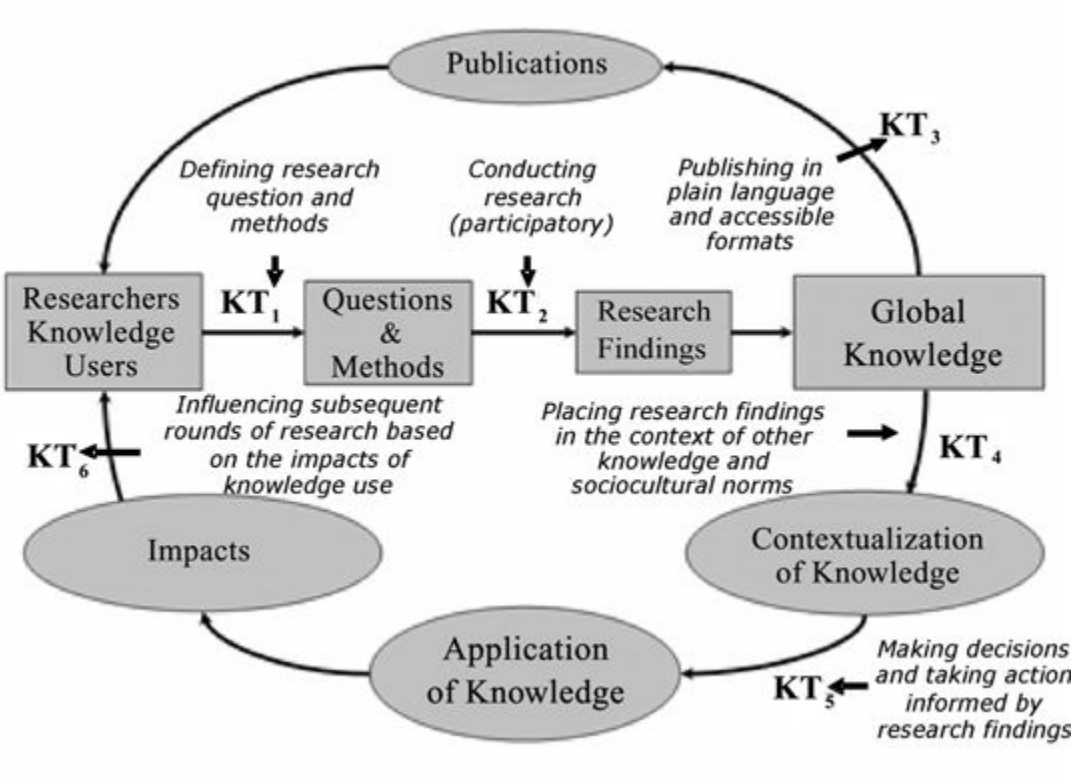
Many disciplines/teams involved



Every step requires knowledge translation

Knowledge translation = closing of the gap between what we know and what we do.

- Information is explicit/factual
- Knowledge is integration of information into a specific context



Key steps in writing your KT plan

Develops a robust and impactful plan to effectively mobilise knowledge gained from the proposed research across a range of sectors/settings

- Builds (reciprocally) on initial question:

- **What problem** are you trying to address?
- **Which practice** will this impact?
- **Who** will you be trying to get to use this knowledge?
  - Academia/Research
  - Healthcare Professionals
  - Government
  - Health Administration
  - Community/Patients
  - Industry
- **How** will you communicate your findings to them?

Barriers to KT

1. Environment
    a. Centralised power
    b. Political instability/turnover
    c. Culture not used to evidence-based decisions
    d. Money
2. People (adopters)
    a. Past experiences
    b. Motivation to change (status quo benefits those in power)
    c. Lack of communication/mistrust
    d. Lack of skills to access/understand research
3. Barriers to evidence
    a. Lack of timely or relevant research
    b. Politicisation of research
    c. Poor quality research
    d. Inaccessibility of evidence

Specific barriers to ML in Healthcare

- Health **data** is a mess
- Health-related **IT** is a mess
- Healthcare is complicated - integration into existing **workflows**
- ML in healthcare requires genuine multi- and interdisciplinarity
- Healthcare provider acceptance:
  - Clear clinical value that improves patient outcomes
  - User-friendly/clinician-centric interfaces
  - Transparency/explainability
  - Independent validation and limitations clearly defined
  - Still allows contextualisation & clinical judgement
- Patient/public acceptance:
  - Overcoming past failures
  - General support but not universal nor unconditional (less trust from previously/currently mistreated groups)
  - “Uniqueness neglect” - treating the average person when the average person doesn’t necessarily exist
  - Lack of transparency on policy and regulation
- Governance:
  - Legally complex (medical device laws, anti-discrimination, medical liability, data protection, intellectual property, consumer protection laws all apply - contradictory)
  - Deployment, monitoring, standards, regulation all in flux and contradictory