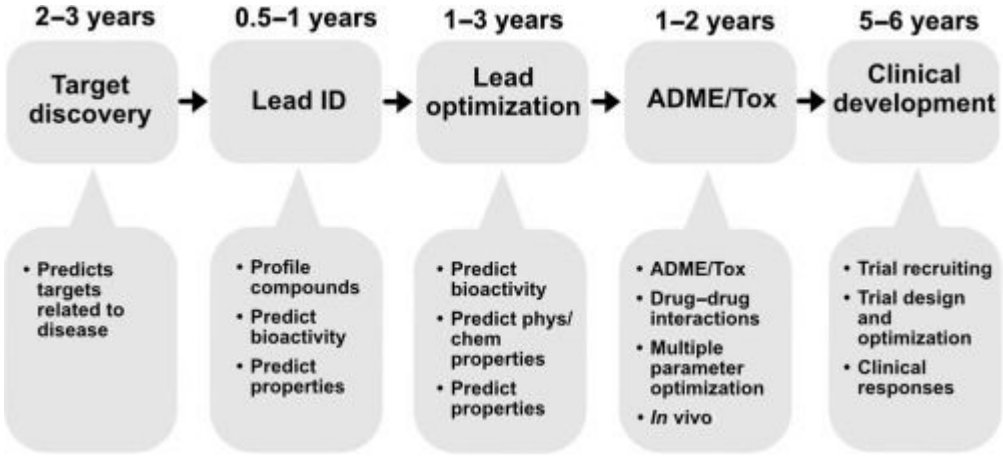
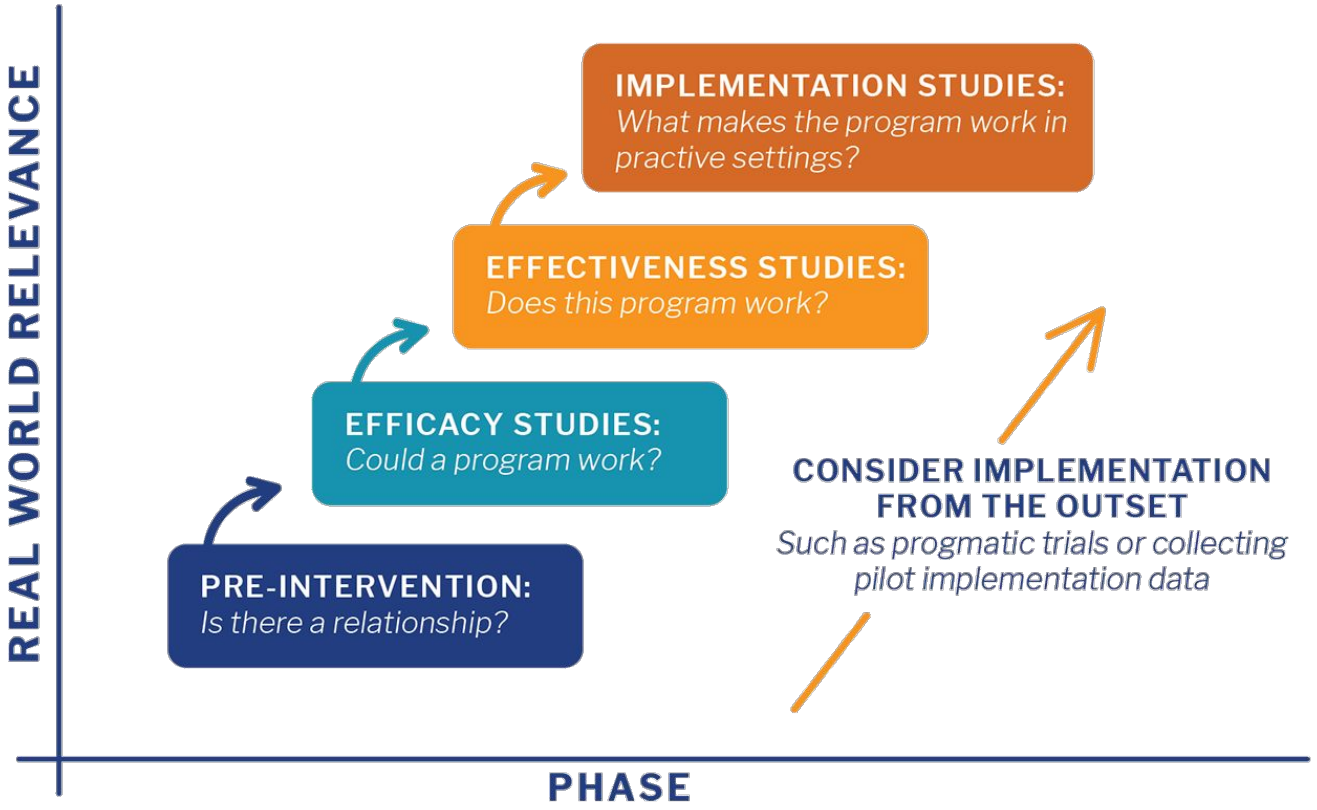
# Proposal Class: Knowledge Translation

# Transfer of research into practice is hard

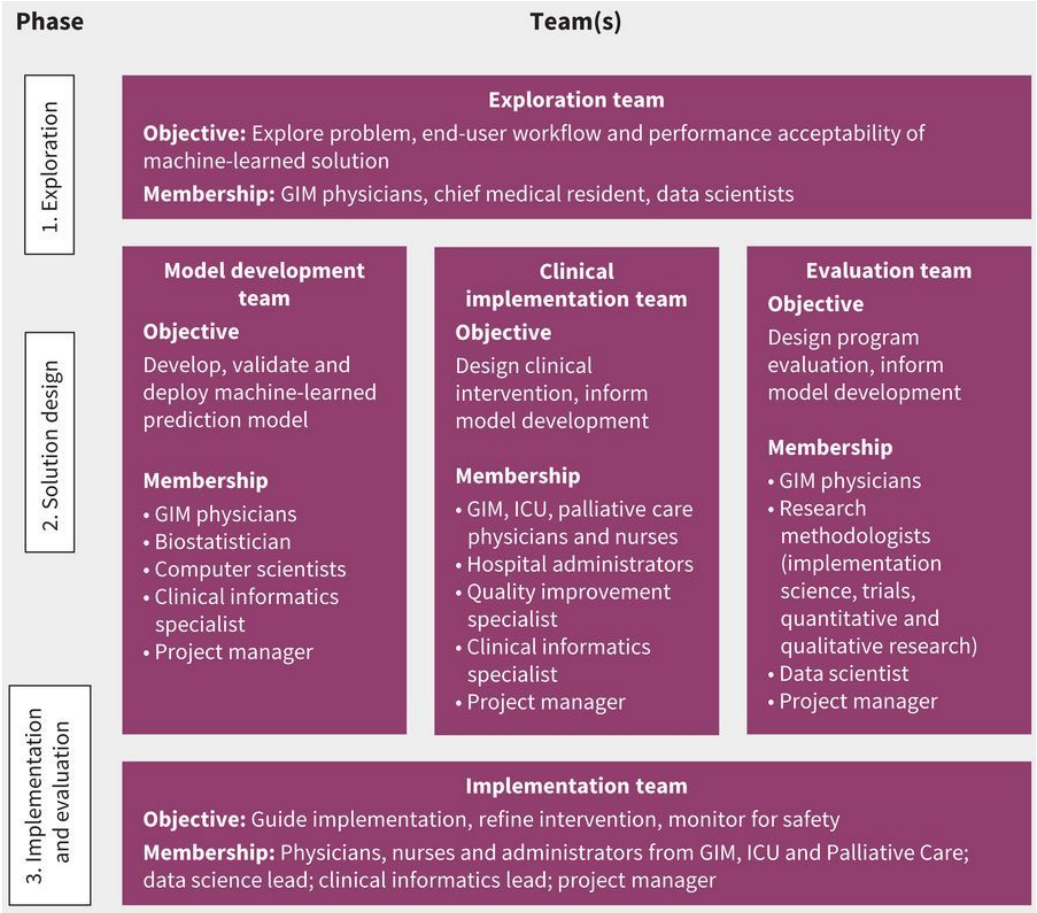
- 1922 Fleming discovers Penicillin (was he first?)
- 1938 Florey & Chain extract Penicillin
- 1940-1945 Animal and Human Trials
- 1945 onwards: Widespread use



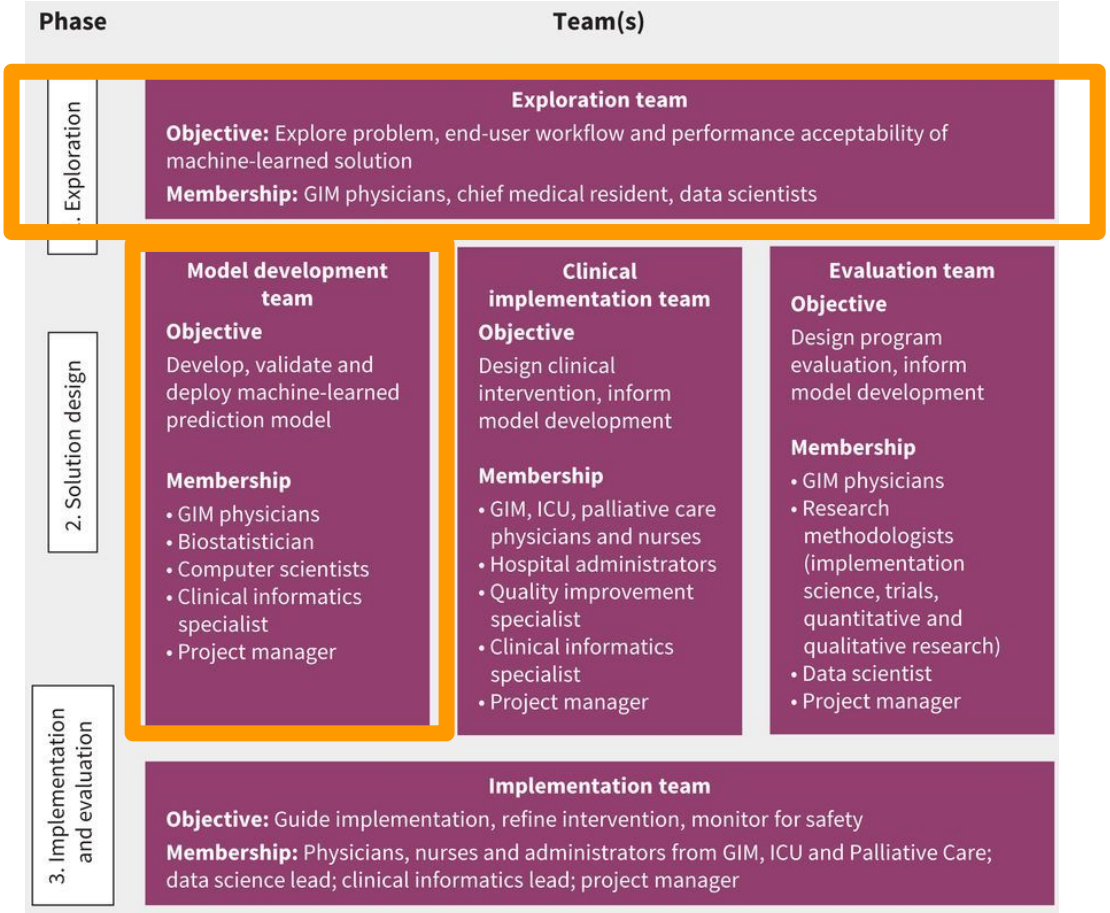
# Many steps to implementation



# Many disciplines/teams involved



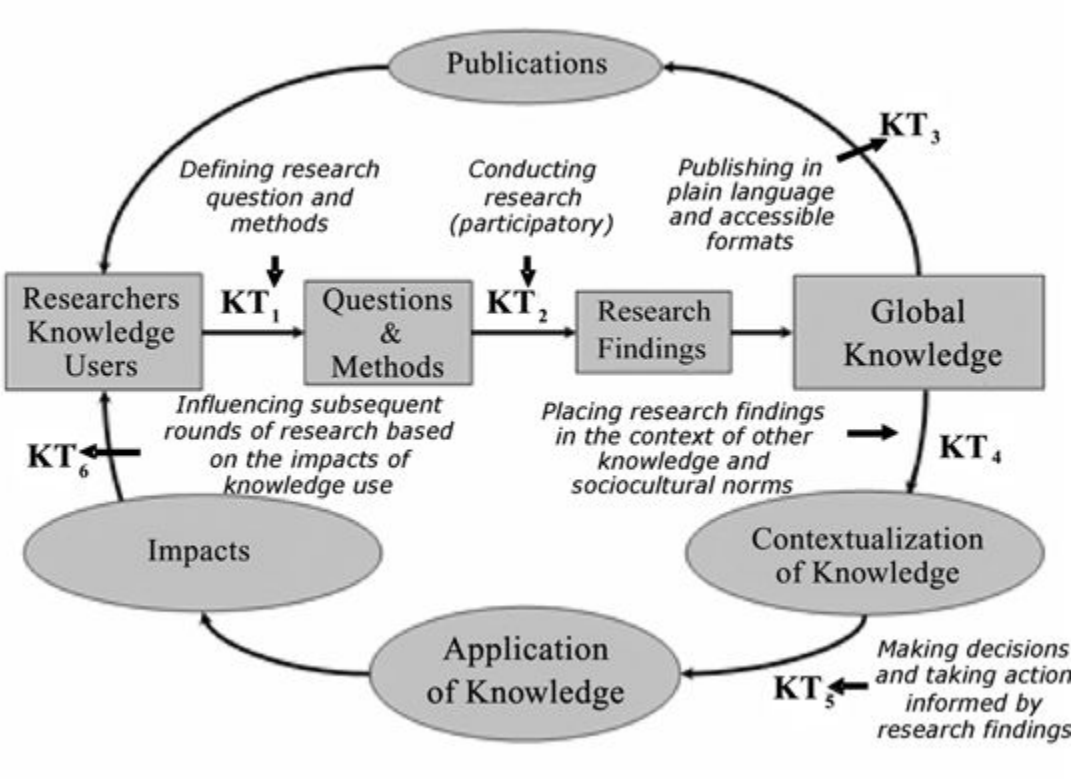
# Many disciplines/teams involved



# 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