Real-time clinical decision support

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Stream 4

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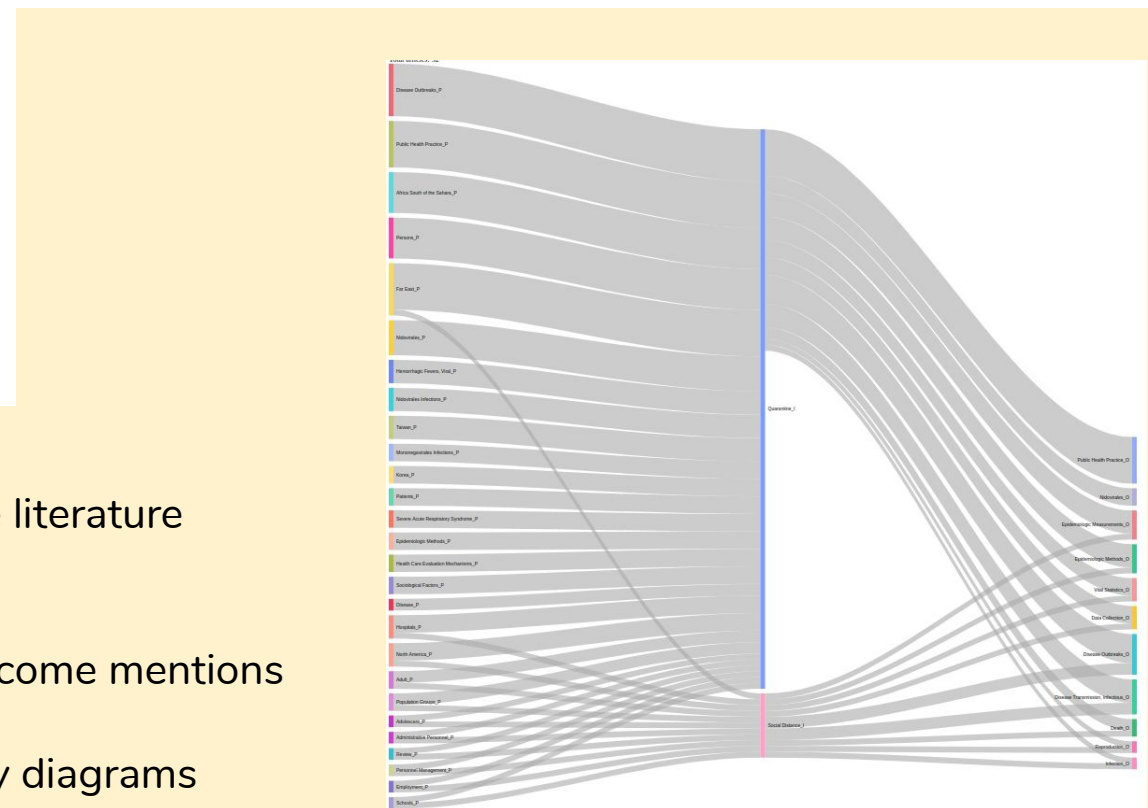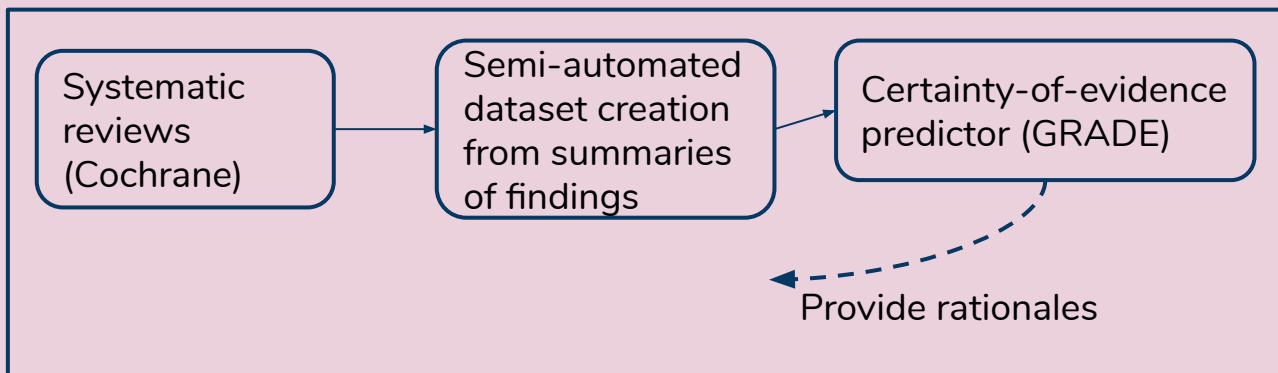
Real-time clinical decision support

The project concerns extracting clinical guidelines from medical literature and estimating the quality of available evidence.

Milestone #	Milestone Description	Current status
1	Automated quality assessment of medical evidence: data acquisition (Cochrane systematic reviews) and dataset construction	Request issued, awaiting response.
2	Automated quality assessment of medical evidence: method development and evaluation	10% completed (survey of the field). On hold due to milestones #1 and #3.
3	Development of COVID Scientific Evidence Explorer (COVID-SEE)	Currently working on it. 60% completed.

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Real-time clinical decision support

A method for automated quality assessment of medical evidence
- Finding relevant medical evidence entails critical appraisal
- Currently impossible to automatically grade medical evidence for a clinical question (existing methods only rate individual articles)
- Review of the literature and tools ([slides](#), [doc](#))

Systematic reviews (Cochrane) → Semi-automated dataset creation from summaries of findings → Certainty-of-evidence predictor (GRADE)

Provide rationales

COVID Scientific Evidence Explorer (COVID-SEE)
- Web application for a Kaggle challenge: Search, explore, visualise literature (CORD dataset)
- Relational view:
  - Apply a neural model to extract Population/Intervention/Outcome mentions
  - Identify MeSH concepts within those mentions
  - Display co-occurrence of concepts in abstracts using Sankey diagrams
  - Support querying with MeSH concepts and PIO constraints

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