Using data to identify allied health complexity in general medicine
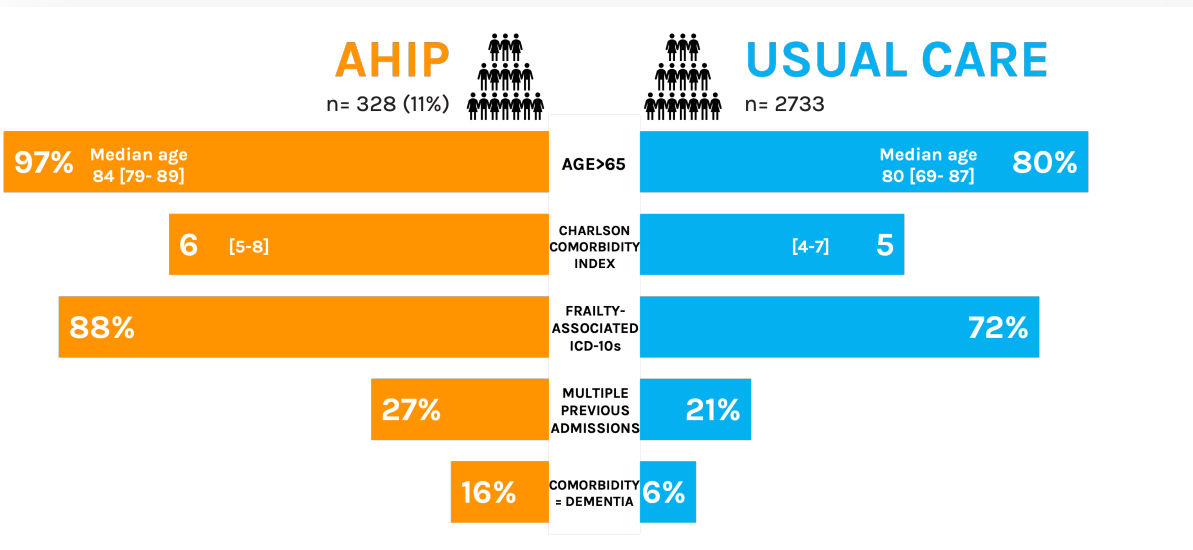
Identifying complexity in general medicine – a survey and cohort study

Background: Patients who are **"complex"** have poorer outcomes in inpatient care. At our hospital patients identified as complex for allied health are referred to the Allied Health Interdisciplinary Practitioner (AHIP) service, a complex care pathway in **general medicine**, but we have **no consistent way to identify this cohort**.

Aim: Characterise patients deemed complex for allied health by examining their **characteristics and outcomes**, and developing a list of **words clinicians associate with complexity** in the progress notes for future **digital identification**.

Cohort results: Key demographic and clinical characteristics of complex AHIP cohort compared with usual allied health care (p<0.01)

Survey results: Words likely to suggest allied health complexity to participants

AHIP n= 328 (11%)   **USUAL CARE** n= 2733

97% Median age 84 [79-89]	AGE>65	Median age 80 [69-87] 80%
6 [5-8]	CHARLSON COMORBIDITY INDEX	[4-7] 5
88%	FRAILTY-ASSOCIATED ICD-10s	72%
27%	MULTIPLE PREVIOUS ADMISSIONS	21%
16%	COMORBIDITY = DEMENTIA	6%

"carer stress"
"complex"
"social admission"
"frail"
"failed discharge"
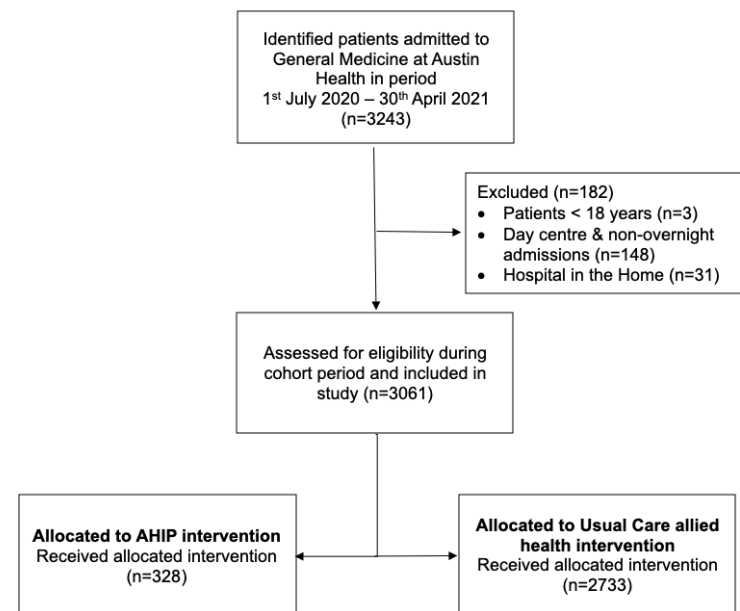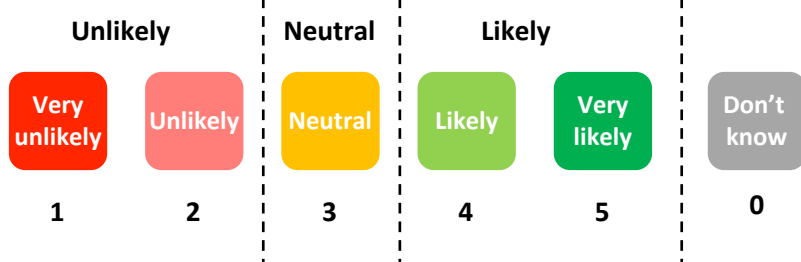*- Survey Respondents (n=80)*

Methods

Cross-sectional survey   +   Retrospective observational cohort study

Clinicians: please rate the likelihood that the following words suggest the patient has complex allied health needs:

Unlikely		Neutral	Likely		
Very unlikely	Unlikely	Neutral	Likely	Very likely	Don't know
1	2	3	4	5	0

Identified patients admitted to General Medicine at Austin Health in period 1st July 2020 – 30th April 2021 (n=3243)

Excluded (n=182)
- Patients < 18 years (n=3)
- Day centre & non-overnight admissions (n=148)
- Hospital in the Home (n=31)

Assessed for eligibility during cohort period and included in study (n=3061)

Allocated to AHIP intervention
Received allocated intervention (n=328)

Allocated to Usual Care allied health intervention
Received allocated intervention (n=2733)

Conclusion: Frailty, **age**, **multimorbidity** and **high hospital utilisation** were associated with **complexity**. Digital identification of patients may be possible using patient data and natural language processing of "complexity" words.

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