Can we future-proof AOD?

Gabby Cohen

Southcity Clinic – Alfred Health

Specialist Pharmacotherapy Services (SPS)

About Southcity Clinic

About our clients

Research/future of AOD

So what?

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ScienceDirect

Current Opinion in Behavioral Sciences

ELSEVIER

Is biological aging accelerated in drug addiction?

Keren Bachi[1], Salvador Sierra[2], Nora D Volkow[3], Rita Z Goldstein[1] and Nelly Alia-Klein[1]

Drug-addiction may trigger early onset of age-related disease, due to drug-induced multi-system toxicity and perilous lifestyle, which remains mostly undetected and untreated. We present the literature on pathophysiological processes that may hasten aging and its relevance to addiction, including: oxidative stress and cellular aging, inflammation in periphery and brain, decline in brain volume and function, and early onset of cardiac, cerebrovascular, kidney, and liver disease. Timely detection of accelerated aging in addiction is crucial for the prevention of premature morbidity and mortality.

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accelerated aging in drug addiction (see Figure 1 and Table 1).

Why study aging in addiction?

Drug-addiction involves premature mortality and early onset of age-related disease. For example, due to arterial, cardiac and cerebrovascular toxicity, cocaine is involved in 40.3% of emergency admissions related to illicit drug use with the highest rates occurring in men aged 35–44 [5]. Similarly the median life of smokers is reduced by at least 10 years not just from cancer, which is a hallmark disorder of aging [6], but also from damage to vascular and

SPS treatment type

1997 heroin glut

Community prescriber model (vs large public clinics)

Step up/step down

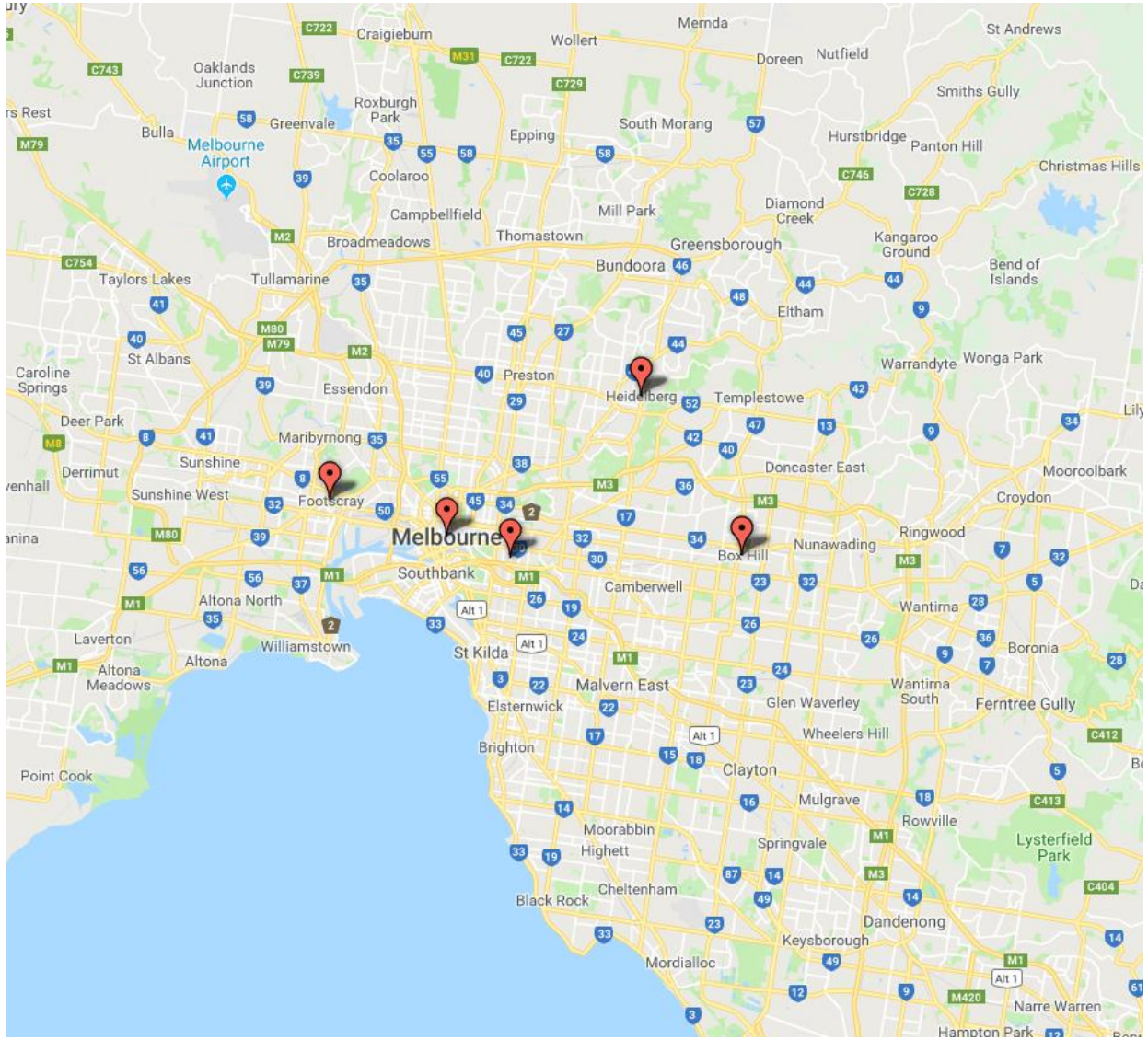
"…assist (GPs) in the management of patients with complex issues such as:

- *unstable psychiatric conditions*
- *high-risk substance abuse*
- *challenging behaviours*
- *chronic pain conditions with opioid abuse*
- *serious medical conditions"*

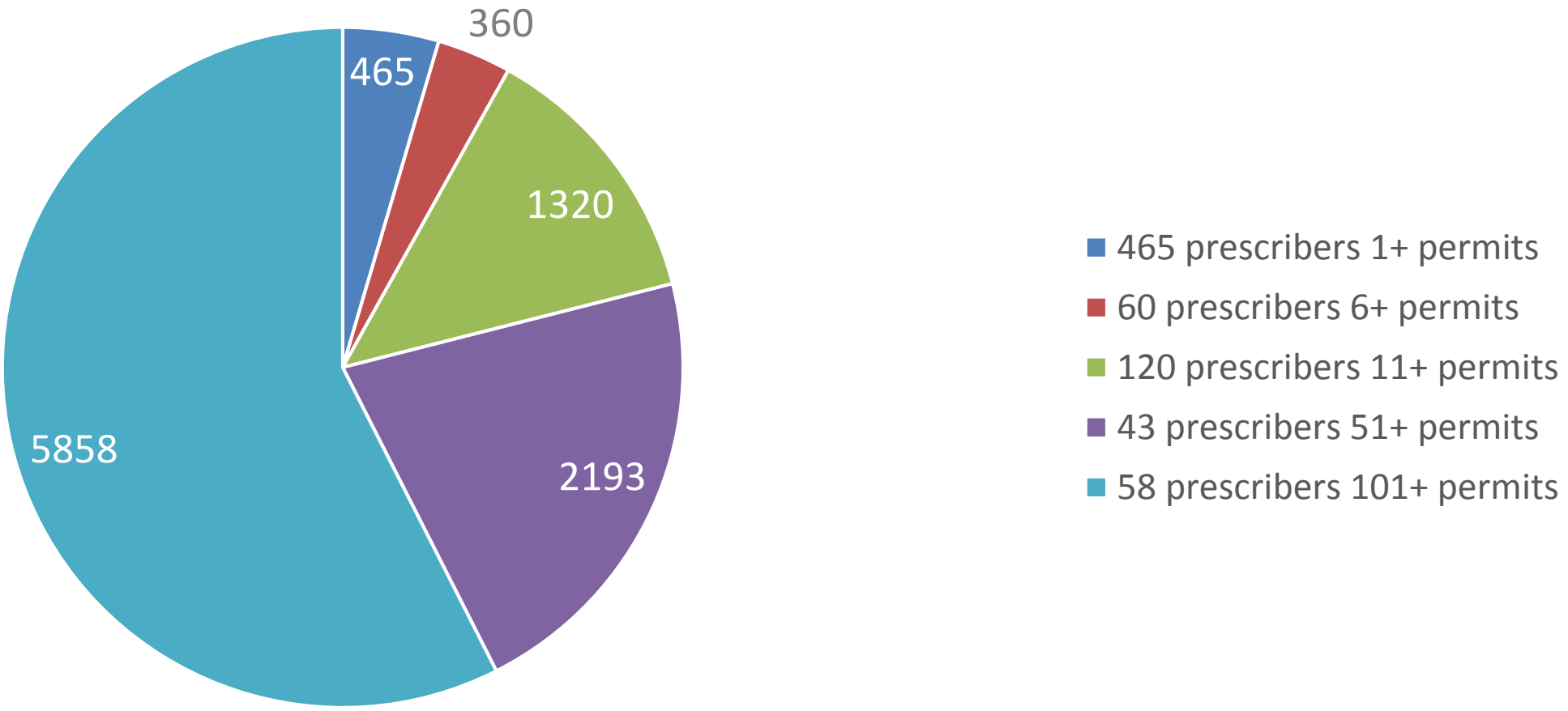
Five specialist services

- Southcity Clinic (Alfred Health)
- Eastern Health (Box Hill)
- Eastern Health (Turning Point)
- Austin Health (Heidelberg)
- Western Health (Footscray)

Distinct models evolved over time



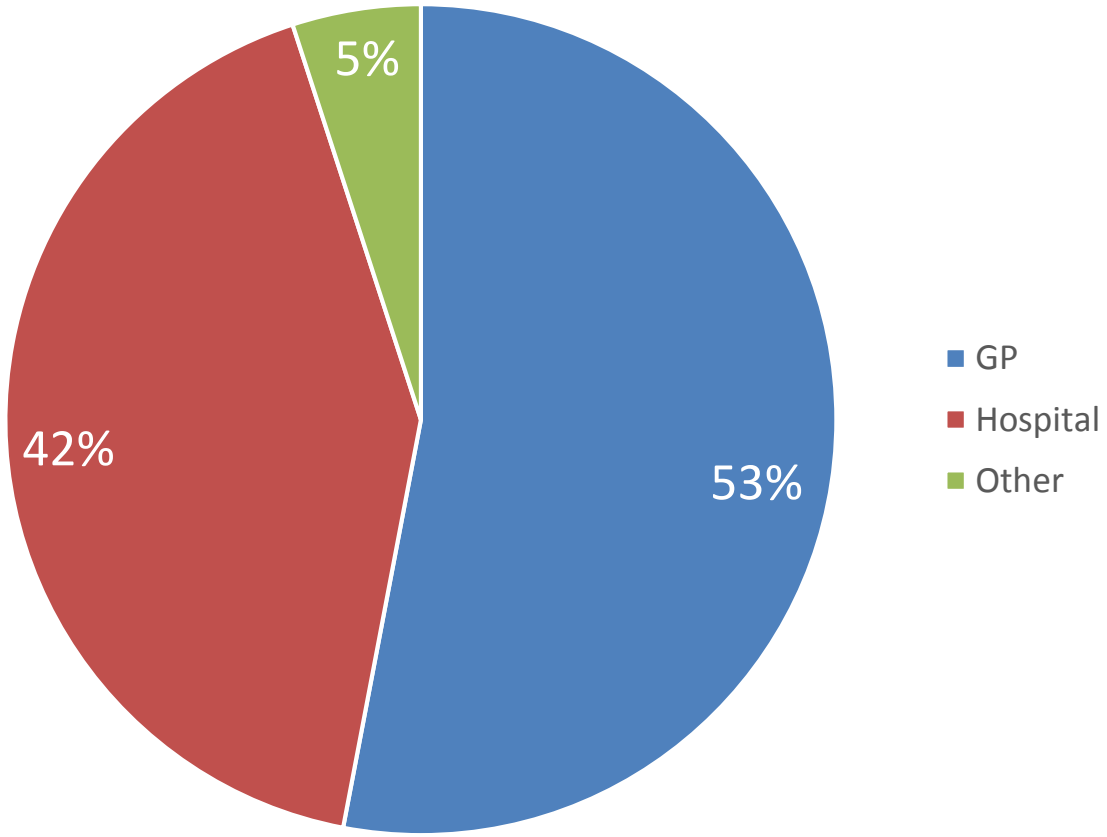
Community prescribers 2017 (vic.)



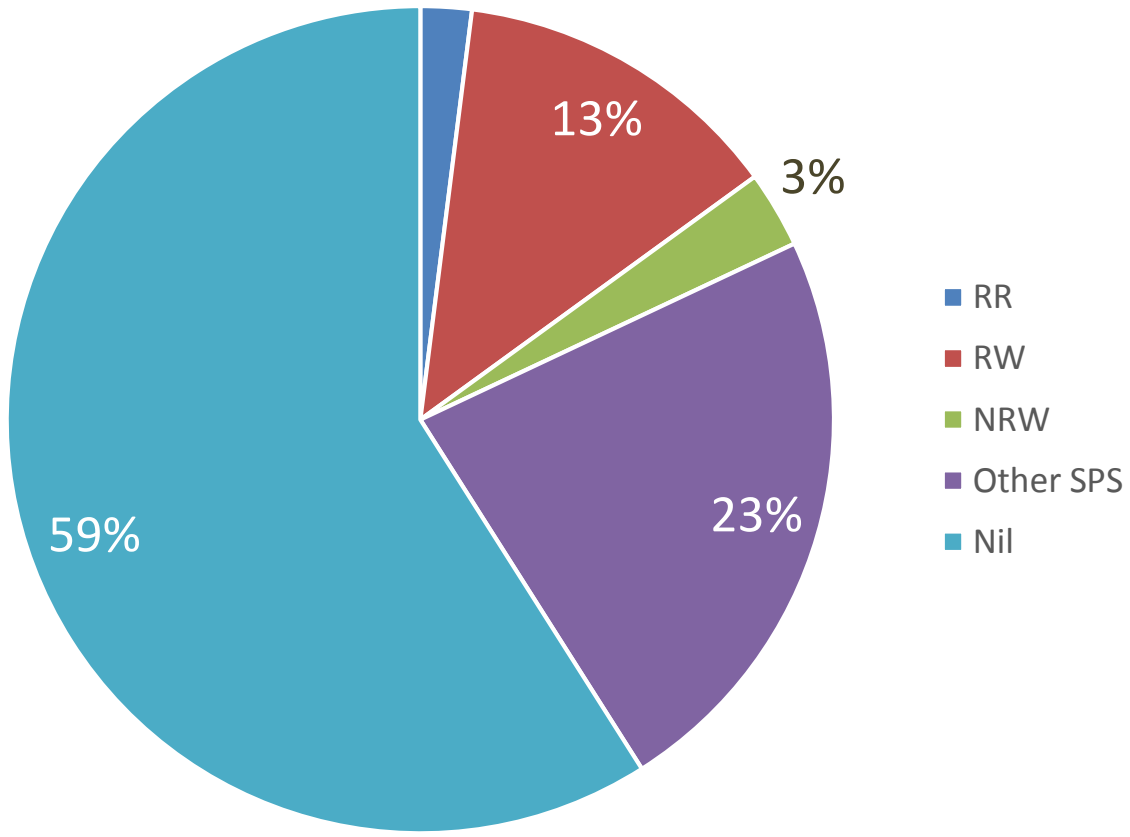
AIHW (2018). *National opioid pharmacotherapy statistics (NOPSAD) 2017*

Southcity clients 2019

Referral source %



Treatment history %

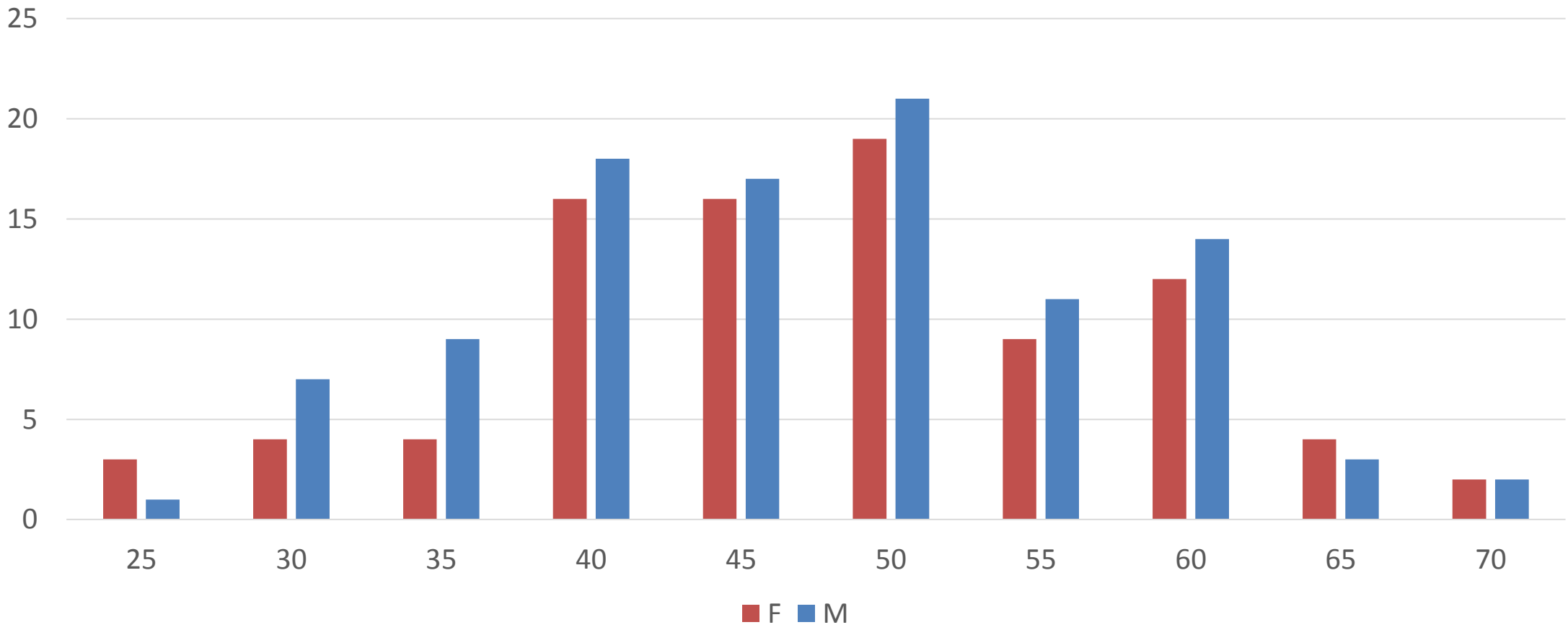


‘Complex clients’

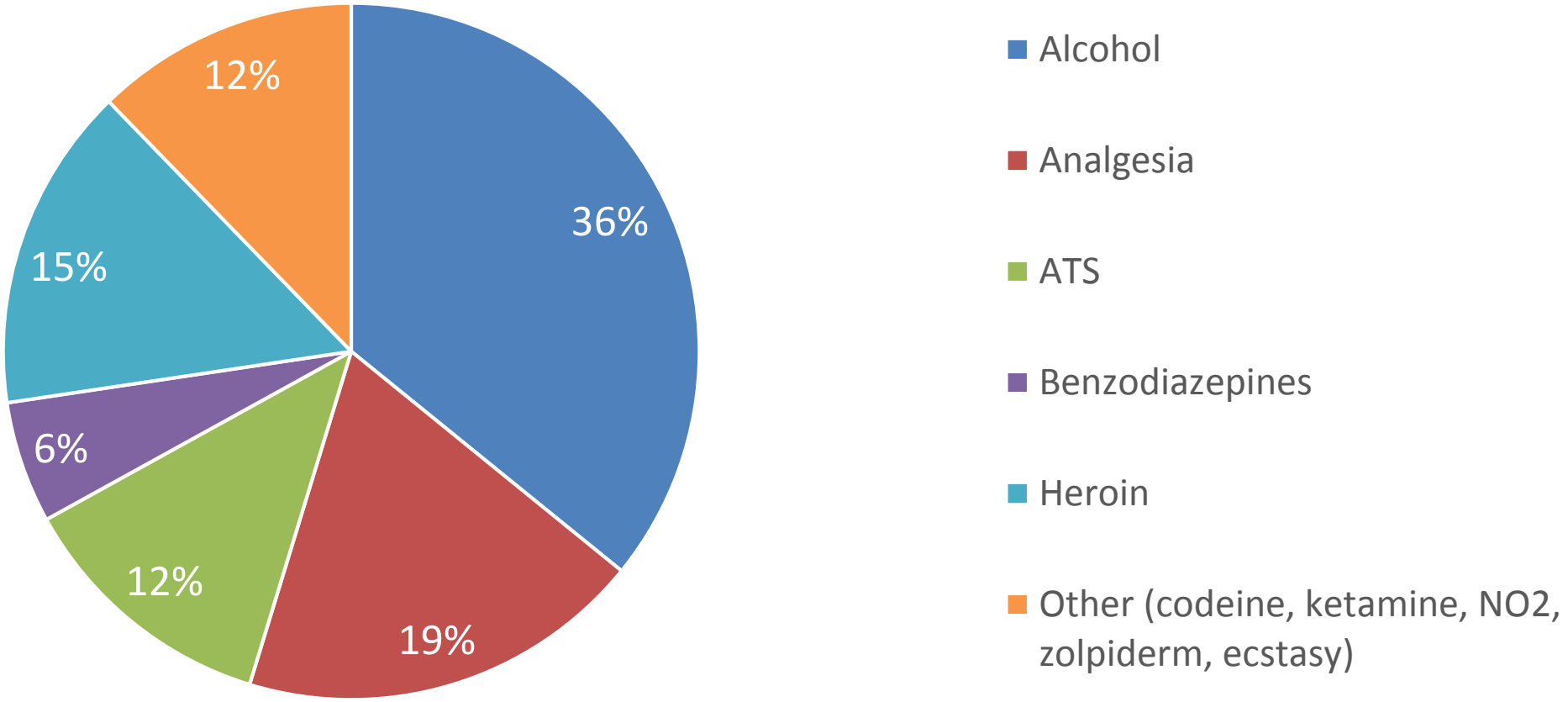
1997 complexity vs 2019 complexity

- *Challenging behaviours*
- *Long term use & functional decline*
- *End of life dependence*
- *Chronic conditions (pain/disease)*
- *High dose opioids*

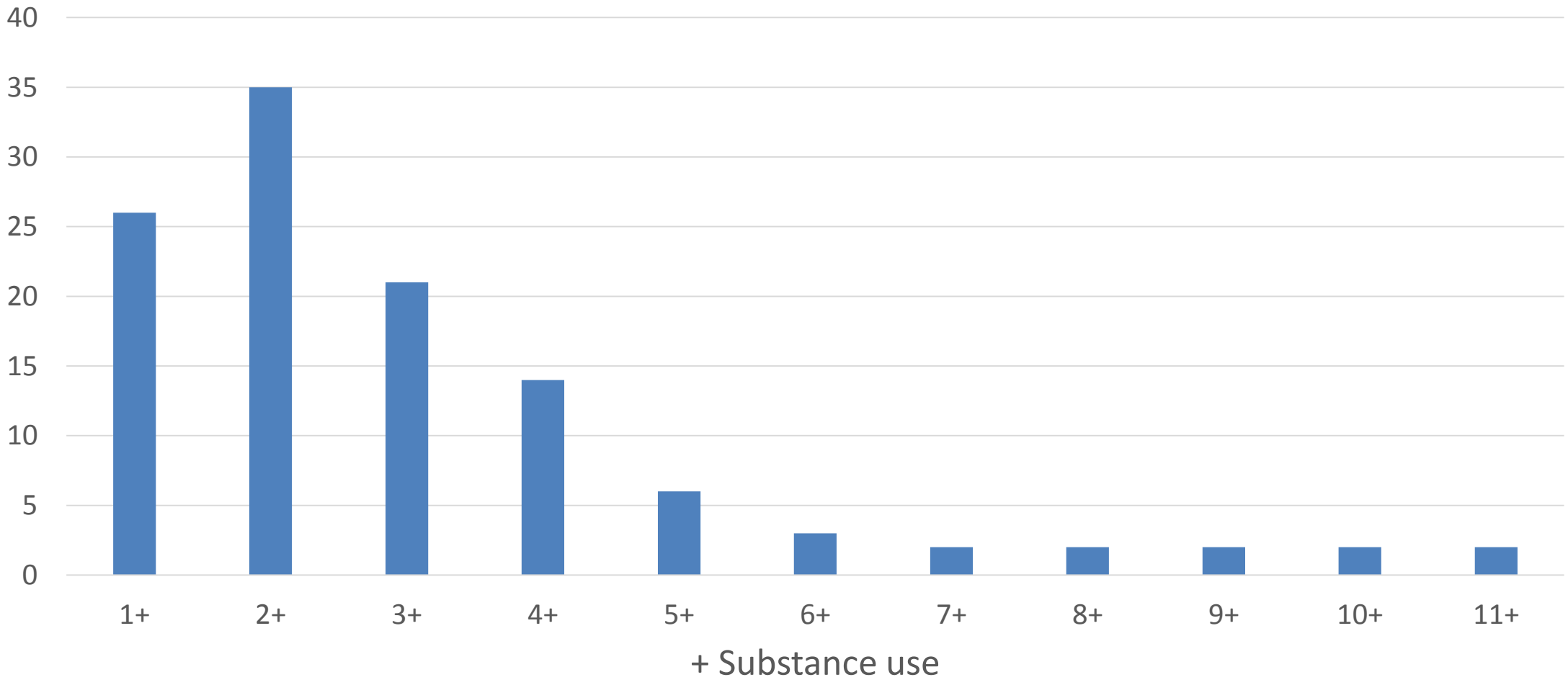
Age x gender

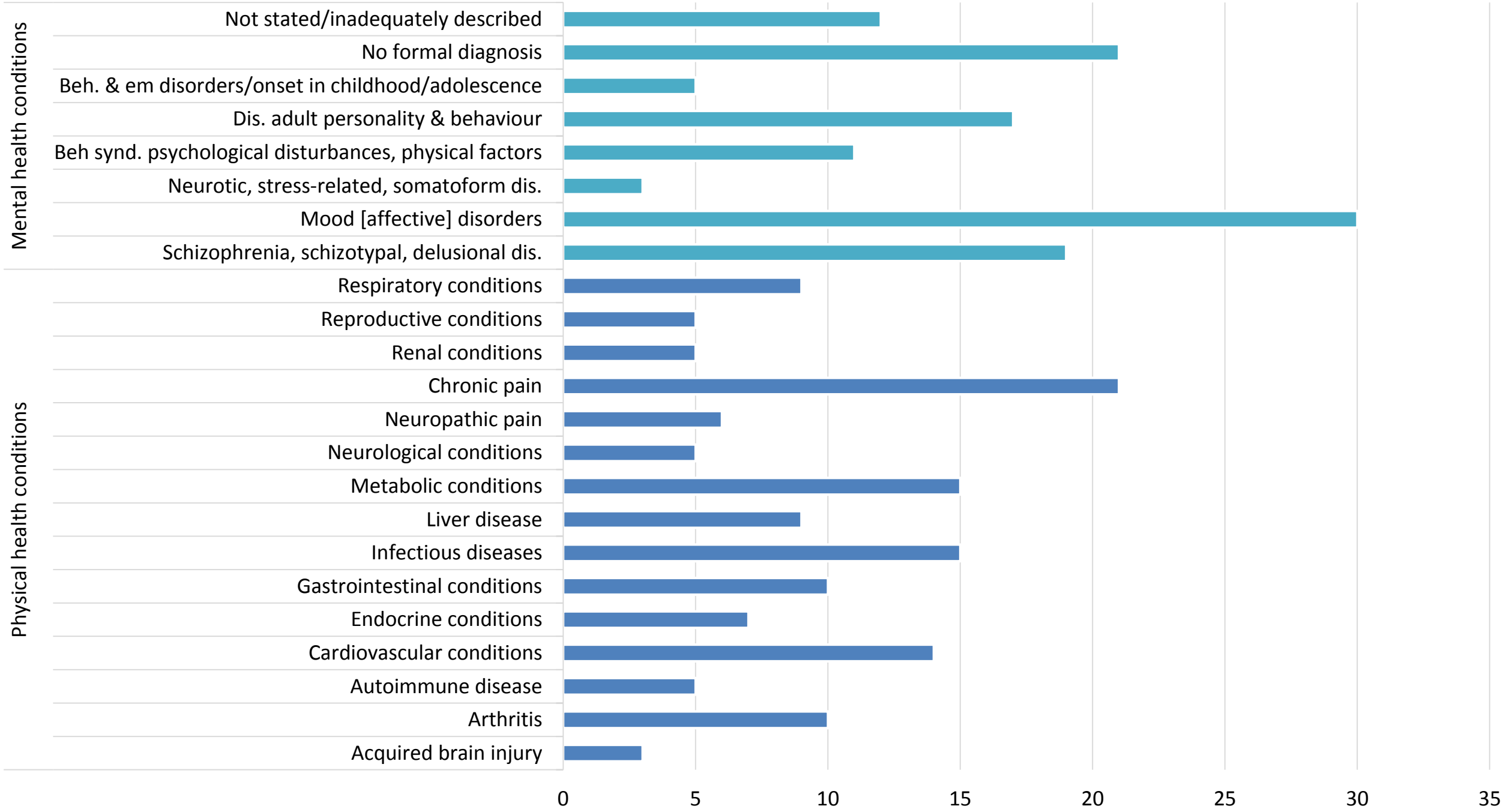


Primary drug



Multi-morbidity is the norm

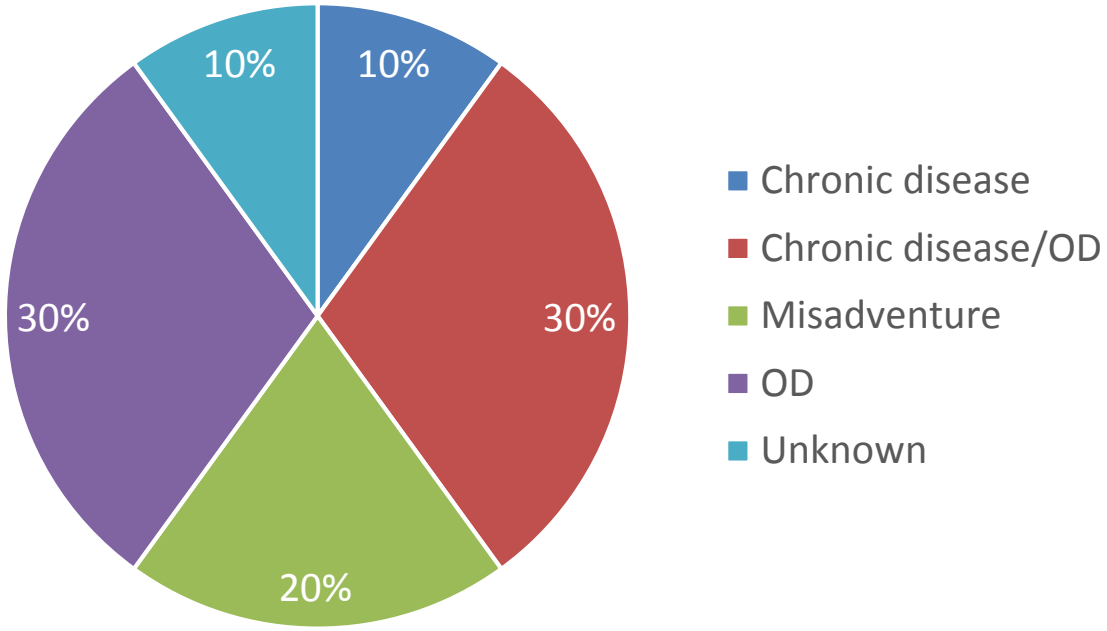



Mental health conditions
Physical health conditions
Not stated/inadequately described
No formal diagnosis
Beh. & em disorders/onset in childhood/adolescence
Dis. adult personality & behaviour
Beh synd. psychological disturbances, physical factors
Neurotic, stress-related, somatoform dis.
Mood [affective] disorders
Schizophrenia, schizotypal, delusional dis.
Respiratory conditions
Reproductive conditions
Renal conditions
Chronic pain
Neuropathic pain
Neurological conditions
Metabolic conditions
Liver disease
Infectious diseases
Gastrointestinal conditions
Endocrine conditions
Cardiovascular conditions
Autoimmune disease
Arthritis
Acquired brain injury
0
5
10
15
20
25
30
35

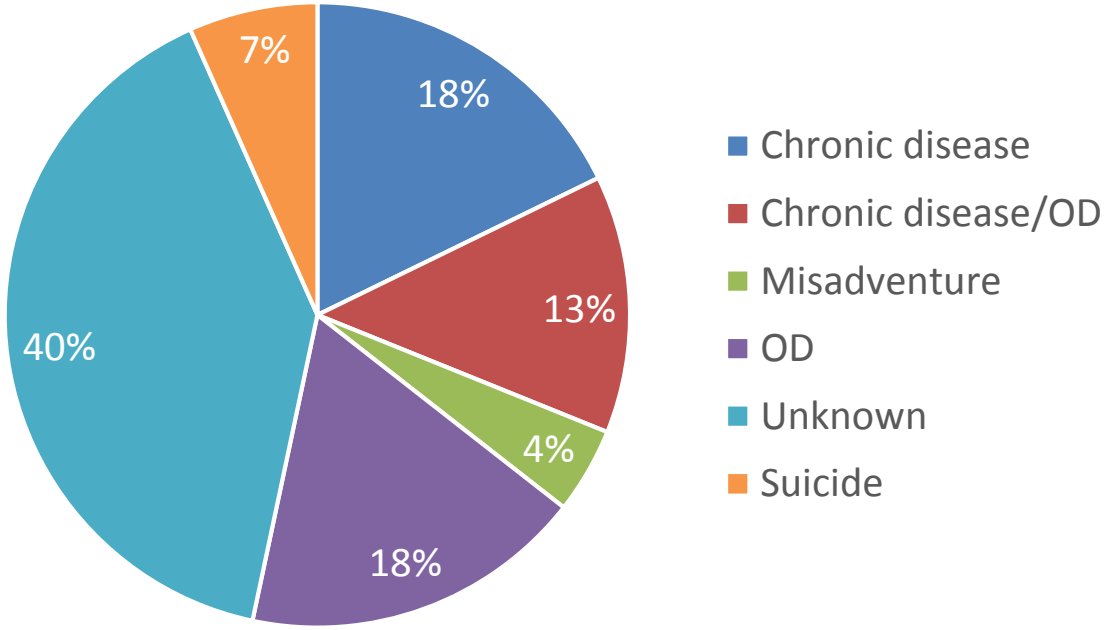
Complexity = risk

- Developmental trauma/challenging behaviours
- Ambivalent
- Long-term use → functional decline
- Multi-morbidity
- High risk &/or opportunistic use (long term ORT ++)
- Low social & occupational functioning
- Low self-efficacy

2014 deaths



Total deaths



Research & the future of AOD

Ageing & treatment demand

Ageing population, ageing clients

→ ‘old’ at 50 *(Draper, 2012)*

Current clients & changing needs

New clients: baby boomers etc. *isolation, grief, loss of identity & S8s*

‘Maintainers, survivors & reactors’ *(Rao, 2017)*

Ageing & health issues

- 40 years successful harm reduction
- High quality longitudinal studies
- ++ retention in treatment
- Reduced risks of premature death
- Prolonged exposure to pathogens & neurotoxins
- Poor health literacy, poor uptake of prevention & screening
- Substance use focused care *(Bachi et al. 2017)*

Ageing & long term use

- Impacts on cardiovascular, hepatic, respiratory, endocrine, psychiatric, cognitive & immune systems
- Acceleration/exacerbation of age related conditions (‘old’ at 50)
- Poor treatment compliance, worse outcomes
- Premature age-related (non-drug) deaths

(Hser et al. 2004; Beynon et al. 2010; Bachi et al. 2017; Lintzeris et al. 2016)

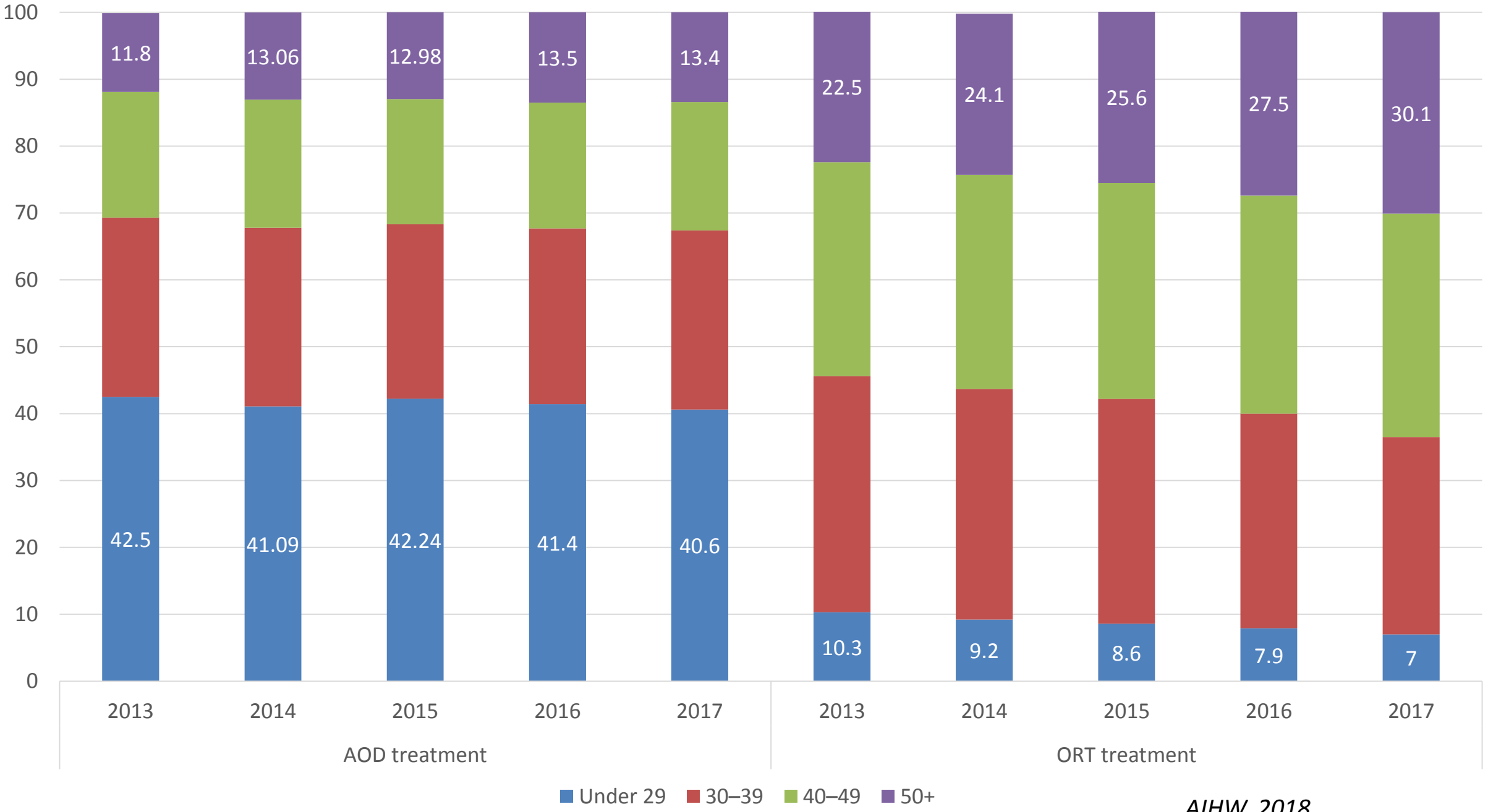
Ageing & risks

- Increased access to prescription medications
- Drug/drug interactions (prescribed & illicit)
- Lower threshold for complications (declining renal & liver function)

→Higher blood concentrations over long periods of time

→Increased OD risks (prescribed & illicit drugs)

(*Crome et al. 2009; Darke et al. 2006; Han. 2018; Lintzeris et al. 2016)*


100
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11.8
13.06
12.98
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22.5
24.1
25.6
27.5
30.1
42.5
41.09
42.24
41.4
40.6
10.3
9.2
8.6
7.9
7
2013
2014
2015
2016
2017
2013
2014
2015
2016
2017
AOD treatment
ORT treatment
Under 29
30–39
40–49
50+

AIHW, 2018

Natural disease deaths in young users

Drug toxicity (43.2%)

Natural disease (22.3%)

Suicide (18.2%)

Other accident (14.9%)

Homicide (1.5%)

- Average age at death 37 yrs.
- Cardiovascular pathology, stroke & aneurysm, independent of route of administration

ADDICTION
SSA SOCIETY FOR THE STUDY OF ADDICTION
RESEARCH REPORT
doi:10.1111/add.13897

Rates, characteristics and circumstances of methamphetamine-related death in Australia: a national 7-year study

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ABSTRACT

Aims To (1) assess trends in the number and mortality rates of methamphetamine-related death in Australia, 2009–15; (2) assess the characteristics and the cause, manner and circumstances of death; and (3) assess the blood methamphetamine concentrations and the presence of other drugs in methamphetamine-related death. **Design** Analysis of cases of methamphetamine-related death retrieved from the National Coronial Information System (NCIS). **Setting** Australia. **Cases** All cases in which methamphetamine was coded in the NCIS database as a mechanism contributing to death (n = 1649). **Measurements** Information was collected on cause and manner of death, demographics, location, circumstances of death and toxicology. **Findings** The mean age of cases was 36.9 years, and 78.4% were male. The crude mortality rate was 1.03 per 100 000. The rate increased significantly over time ($P < 0.001$), and at 2015 the mortality rate was 1.8 [confidence interval (CI) = 1.2–2.4] times that of 2009. Deaths were due to accidental drug toxicity (43.2%), natural disease (22.3%), suicide (18.2%), other accident (14.9%) and homicide (1.5%). In 40.8% of cases, death occurred outside the major capital cities. The median blood methamphetamine concentration was 0.17 mg/l, and cases in which only methamphetamine was detected had higher concentrations than other cases (0.30 versus 0.15 mg/l, $P < 0.001$). The median blood methamphetamine concentration varied within a narrow range (0.15–0.20 mg/l) across manner of death. In the majority (82.8%) of cases, substances other than methamphetamine were detected, most frequently opioids (43.1%) and hypnosedatives (38.0%). **Conclusions** Methamphetamine death rates doubled in Australia from 2009 to 2015. While toxicity was the most frequent cause, natural disease, suicide and accident comprised more than half of deaths.

Keywords Circumstances, disease, epidemiology, methamphetamine, mortality, toxicity.

(Darke et al, 2017)

Natural disease deaths in young users: AH

- 2017 ↑ prevalence of substance-induced cardiomyopathy
- Alfred Heart failure & addictions joint OP program

'new onset heart failure & substance use'

25 clients (24 M, 1 F)

Between 30-40 years

52% stimulants

48% alcohol

So what?

Clear evidence

Increasing demand among older clients

Increasing complexity & chronic disease

In-treatment onset/ diagnosis of disease (ARBI, dementia, COAD etc.)

Changing/increasing risks

Low-concentration OD, falls, confusion/delirium, polypharmacy-'geriatric giants'

Client displacement

Hospitals, crisis accommodation, assisted living/aged care, palliative/hospice care

Clear evidence & sustainability

- Poor management of complexity (AOD in health, health in AOD)
- Poor integration/mobility between systems
- Economic/social impact of displacement

    67,285 AOD presentations 2016/17 = $311,260,410.00 (AODstats) vs

    63,911 closed episodes AOD 2016/17 (NMDS)

- Rising expenditure → forced savings (reforms, co-payments etc.)

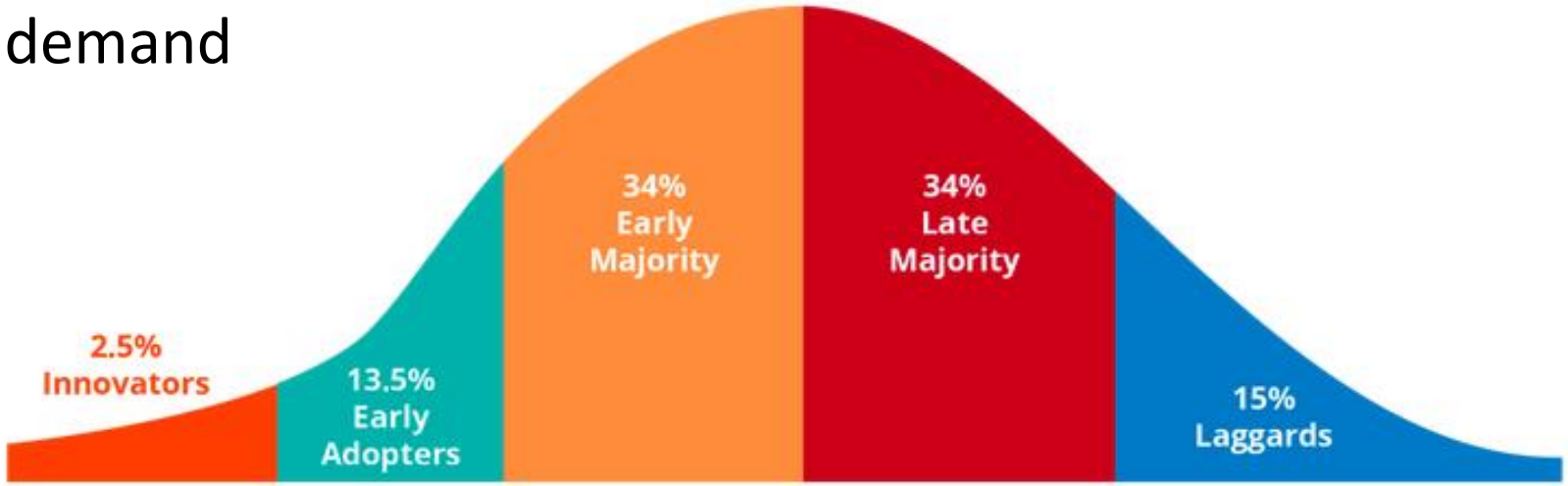
    Systems vulnerability

Unmet AOD treatment demand

- Heavy daily use via wastewater analysis *(methamphetamine, oxycodone, fentanyl)*
- Non-treatment seekers + complex health issues
- AOD treatment seekers + complex health issues
- ORT maintenance + complex health issues
- Prescription medication + complex health issues (? safescript)

Take home message (TLDR)

- Not IF we respond, when we respond
  - Clear evidence of ageing
  - Clear evidence of chronic disease
  - *Sick* AOD system
  - Vulnerable systems-already struggling
  - Evidence of growing demand
  - True integration?



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