An economic and health assessment of a brief intervention for adolescents with problematic substance use: 10 year outcomes

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Baseline study 1999-2002
WA Data Linkage System
Mortality
Admissions
Costs
ED presentations

Baseline study 1999-2002
Screening (brief intervention) & Referral for Treatment

ED presentations Perth WA
  Age 12-19 years
  Any alcohol or other drug use
Randomised: TAU v SBIRT
Facilitate access to local / relevant treatment provider

Sample n = 127 TAU n = 67: Intervention n = 60
  67 (53% alcohol only)
  31 (34% alcohol + other drugs)
  28 (22% other illicit ± licit)

12 month follow-up: 87 (69%) re-interviewed
TAU 4 (6%) *versus* Intervention 15 (25%)
had attended a service provider

WA Data Linkage System

- Separation of study & administrative data
- Probabilistic matching (no common id number)

- Key datasets
  - ED presentations (2002 onwards: thus 2.5-10 year outcomes reported)
  - Mortality
  - Hospital admissions
  - MH inpatient & outpatient treatment
 - Monitoring of drugs of dependence system (MoDDS) (methadone / buprenorphine)

Cost data

- ED costs based on Urgency Diagnostic Groups (UDG)
- Hospital costs – Australian-refined diagnostic related group codes (AR-DRG)
- MH outpatients average cost per non-admitted case
- MoDDS from best practice guidelines
- Program cost – estimated at 1 hour per intervention (beyond study procedures common with TAU)
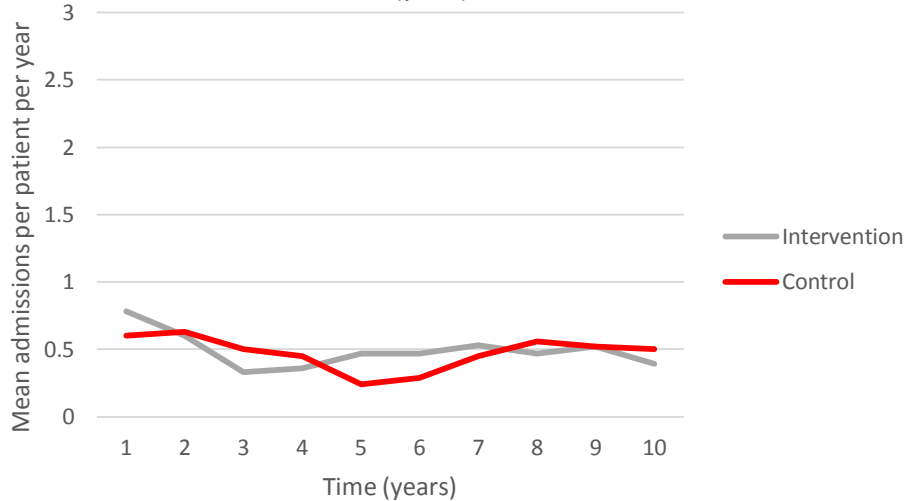
Results

- Linked: 116 / 127 (91.3%)
- Not linked: 9 TAU: 2 intervention
- Deaths 5 = 4.0 / 1000 patient years (ptpy)
  - TAU 2 = 3.0 / ptpy: Intervention 3 = 5.1 ptpy
    - Intention self-harm / asphyxiation
    - Cardiomyopathy
    - Cervical cancer
    - Intention self-harm / asphyxiation
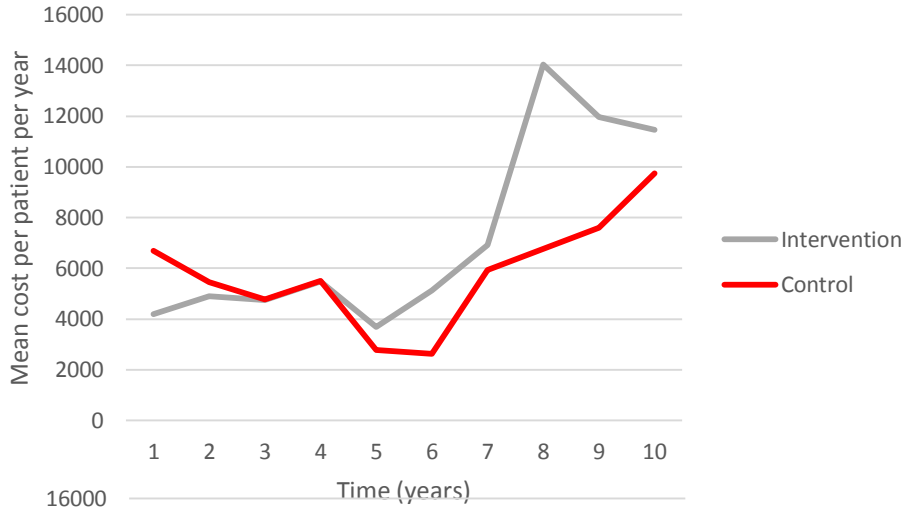   - Accidental poisoning
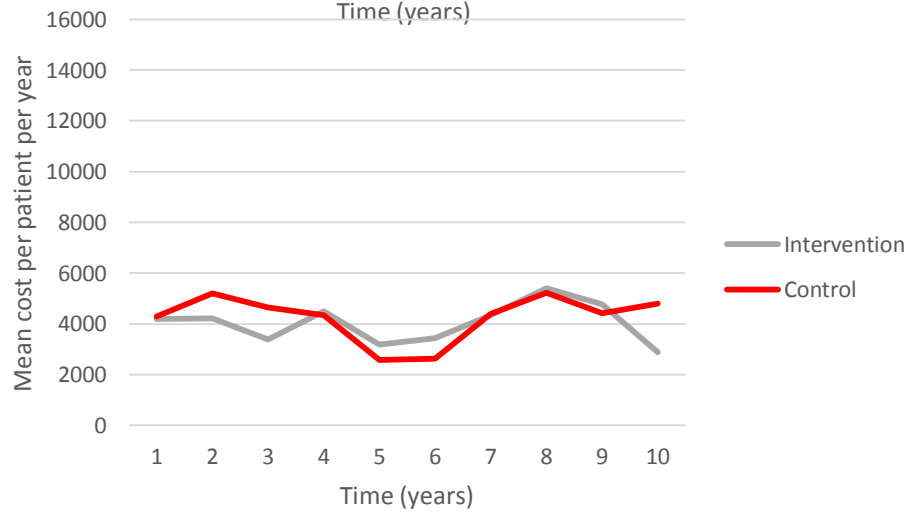
Admissions
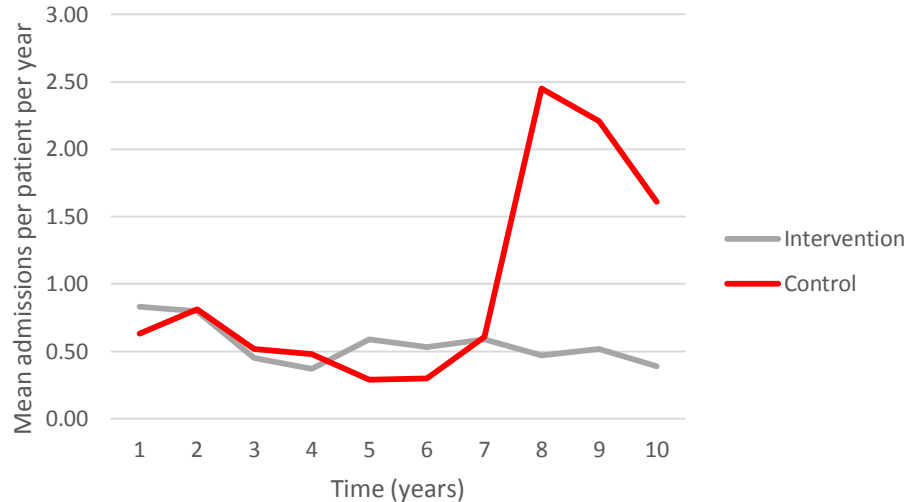
Raw data
range 0-315

winsorized data to
97.5 percentile
Range 0-47
3 cases including 1
with admissions:
123 in year 8
77 in year 9
72 in year 10

Costs

Raw data
$0-$2 million

winsorized data
$0-$570 036

$726,000
$890,000
$2,000,000

ED Presentations

	Intervention	TAU
Total presentations raw	441	479
Total presentations W	405	432
Total costs raw	$279 166	$305 411
Total costs W	$255 952	$278 063

ED presentations - events

ED presentations	Intervention	Treatment as usual	Z statistic (*p* value)
	Events / person	Events / person	
Poisoning (e.g. OD)	0.20	0.15	-0.15 (.877)
Mental health AOD	0.03	0.25	**2.57 (.010)**
Mental health non-AOD	0.52	0.73	0.14 (.522)
Requiring hospital admission	2.65	2.76	0.14 (.890)
Overall	*6.8*	*6.5*	*-0.19 (.849)*

GEE with negative binomial distribution

ED presentations - costs

ED presentations	Intervention		Treatment as usual		Z statistic (*p* value)
	Mean	Range	Mean	Range	
Poisoning (OD)	$356	$0 – 3648	$381	$0 – 3648	-0.16 (.876)
Mental health AOD	$22	$0 - 781	$227	$0 – 1865	**3.16 (.002)**
Mental health non-AOD	$378	$0 – 5961	$560	$0 – 5961	0.79 (.431)
Requiring hospital admission	$1911	$0 – 13 592	$1915	$0 – 13 592	0.01 (.994)
Overall	*$4255*	*$0-$29219*	*$4150*	*$0-$29219*	*-0.11 (.916)*

GEE with log link distrubution

Limitations

- Small sample

- Few attended initial treatment (e.g. 25%)

- Missing initial 2.5 years of ED data

12 months pre-post (data via manual & electronic (EDIS) search
  - Pre: TAU 14 v Intervention 23 AOD presentations
  - Post: TAU 17 v Intervention 12 AOD presentations

  - Pre: TAU 48 v Intervention 61 all cause presentations
  - Post: TAU 56 v Intervention 71 all cause presentations

Combined (raw) data
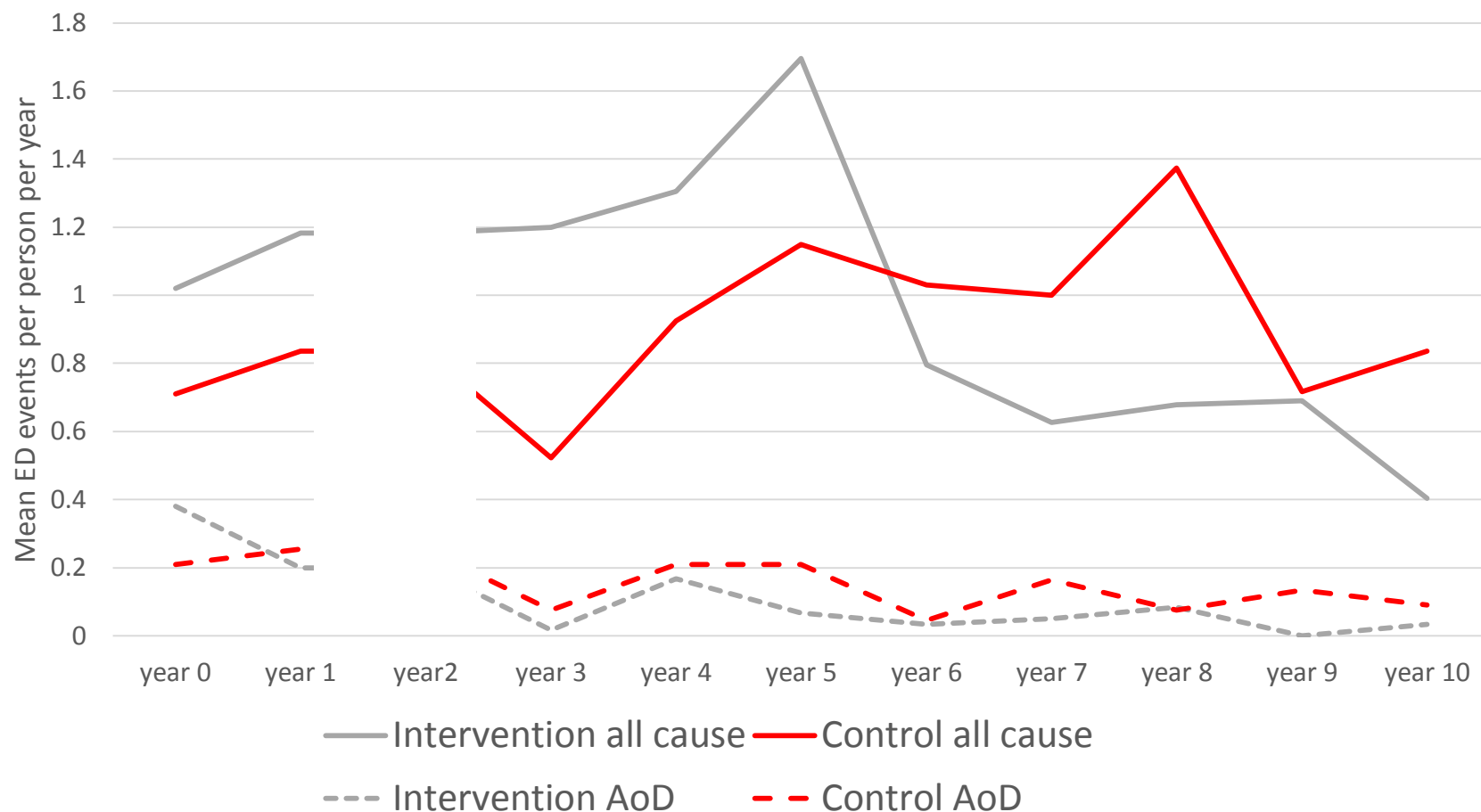
Implications

- S(BI)RT for youth AoD can have lasting benefits in reducing AoD presentation

- No evidence that this generalizes to other presentations (or admissions)

- Recommendation: increased delivery of BI component to ensure all receive some intervention

- ED savings @$200 / intervention: for 1668 adolescent presentations / year = $41,000

Acknowledgements