Closing the loop: youth suicide prevention and care pathways

This series is designed to 'close the loop' between research and policy by translating research evidence into policy directions and advice. These papers review key findings from National Suicide Prevention Research Fund[1] projects and identify evidence-based policy recommendations. This edition focuses on the area of mental health care pathways for young people presenting at emergency departments after self-harming. Although self-harm is generally not intended to be a deliberate attempt to end one's life, there is an elevated risk of suicide in individuals who self-harm.

Research summary

This report describes three inter-related studies that explored the relationship between different mental health care pathways and repeated presentations to emergency departments in over 2,000 young people experiencing self-harm in the ACT (Bourke et al., 2021). The three studies looked at:

- **Clinician referrals:** Examining clinical case notes to determine what were the mental health care pathways that clinicians direct young people to, and what factors influence clinician's decisions on pathways.
- **Re-presentations:** Using linked records from different databases to look at the rate of re-presentation to emergency departments, and the length of time between presentations, after different mental health care pathways.
- **Partial economic evaluation:** Drawing on results from the first two studies to estimate the costs and outcomes associated with different mental health care pathways.

Clinician referrals:

This study revealed that there are at least twenty-five mental health care pathways to which a young person may be referred. Of these, nine were admissions to different wards in the hospitals and sixteen were to a range of community mental health services, including mental health crisis supports, general practitioners, and aftercare support. A variety of rationales underpin clinicians' decisions regarding referral pathways. These included patients' requirements for medical care, risk of self-harm/ suicide in the community, and availability of parental/social support. For example, a young person who is lacking support or are in unstable living circumstances may be more likely to be admitted to the hospital for acute care, while a young person with reduced risk of harm may be more likely to be referred to community mental health services.

Re-presentations:

In the sample of 2,011 emergency department presentations for young people who self-harm, approximately two-thirds (65%) of these emergency department presentations were re-presentations within six months of previous presentation.

This study looked at how the rate of re-presentations within six months differed depending on whether the young person:

- received only care in the emergency department,
- was referred to community mental health care,
- was admitted as an inpatient and was not referred to community mental health care, or
- was admitted as an inpatient and was referred to community mental health care.

Modelling took into account differences in gender, age, indigenous status, and complexity (severity) of mental health needs.

The modelling in this study suggests that the optimal mental health care pathway for reducing emergency department re-presentations was a referral to community mental health services without being admitted to the hospital.

The findings were that the rate of re-presentation to emergency departments was 23% lower where the young person was provided with referral to community mental health services, compared with only receiving care in the emergency department.

Interestingly the rate of re-presentations increased for young people who were admitted as in-patients (both in cases where they were, and were not, referred to community mental health care) compared with only receiving care in the emergency department.

The study also looked at the average length of time between presentations in the sample (which covered a period of seven years). This gave a similar pattern of results.

Young people who were provided follow-up community mental health care, had the longest average time between presentations (nine months). Those receiving only emergency department care had an average time between presentations of seven months. And young people who had been admitted as in-patients (irrespective of whether they were provided follow-up community mental health care) had the shortest average time between presentations (five months).

Partial Economic evaluation:

The outcomes of different care pathways were measured in terms of quality and length of life, summarised as Quality Adjusted Life Years (QALYs). Costs measured include costs relating to acute self-harm episode care (including emergency department costs and inpatient costs), costs relating to community mental health care, and the cost of ongoing medication management.

The report provides QALY gains and costs for different referral pathways but it is important to note that these costs and QALYs cannot be directly compared across pathways since a causal effect cannot be established due to the non random allocation to pathways (and potential endogeneity) in the observational data.

Evidence review

The final report of this research, in addition to setting out the research findings, also reviewed the evidence on youth suicide, responding to youth self-harm, and the costs and outcomes of mental health care (Bourke et al., 2021).

Youth suicide

Suicide is the leading cause of death among Australian young people aged 15 to 24 years (Australian Institute of Health and Welfare, 2021). Suicidality is even more common in young people, with data suggesting that in 2019, around 17% of youth (aged 14 to 17 years) in Australia had thought about taking their own life, 14% had planned a suicide, and around 10% had made a suicide attempt (Australian Institute of Family Studies, 2020).

Responding to self-harm

Young people who self-harm can go to extensive lengths to hide their self-harm (Chandler, 2017; De Leo & Heller, 2004). They are generally unlikely to seek help from health services, but for those who do seek help, their first point of contact is typically a hospital emergency department (Zanus et al., 2017). In the last few years, emergency department presentations by young people experiencing self-harm increased by nearly 12% annually in both NSW and Victoria (Hiscock et al., 2018; Perera et al., 2018).

Young people who self-harm are likely to self-harm again, and repeated self-harm is associated with a higher risk for future suicide attempts (Hawton et al., 2012). This highlights the need for appropriate and continuing care for young people experiencing self-harm.

Costs and outcomes of mental health care

The research summarised here is one of the first studies to estimate the costs and outcomes related to mental health pathways in the ACT. As such, this study contributes to the evidence base by providing evidence on cost and outcomes for routine care for a resource intensive treatment such as mental health, but does not allow comparison across pathways.

A previous study by Mitchell et al. (2018) in Australia on young people who self-harm focused intentional injury, including both self-harm and assault. It estimated the cost of self-harm over a 10-year period to be $64 million dollars with a mean cost of $3,527 for children aged 16 and below. A further study By Kinchin et al. (2020), which involved a one-year analysis of national hospital records for young people who self-harm identified similar cost per episode of inpatient care for those average length of stay of between 1 to 2 days at a cost of $4,649 per episode.

The results summarised here are in line with the study by Kinchin et al. (2020) which estimated a similar cost for hospital length of stay.

Policy implications

This research is important and timely given persistent rates of youth suicide and increases in suicide attempts among young people in some areas. Its findings are also of value given the recent commitment to universal aftercare and expansion of Safe Havens as alternatives to Emergency Departments for those in distress.

Integrated care coordination

One key result from this research with significant policy implications is the finding from the first study that there are at least twenty-five referral pathway options, including sixteen to different community mental health services. This diversity of service options can be advantageous, potentially giving choice and accommodating a

variety of mental health needs. However, the number of referral pathway options highlights the need for integrated care coordination amongst these service options. This will require systems that allow services to quickly and easily identify those receiving services from other providers and the ability to make contact with other providers while respecting client confidentiality.

Additional supports

A further important finding is that referral to community mental health appears to be a more effective treatment than emergency department only support, or admission as an in-patient to a hospital ward. Rates of re-presentation appear to be decreased, and periods between presentation longer. The costs of community mental health care also appear to be lower than hospital admission.

In addition to examining the benefits and costs of different mental health care pathways, this study also looked at the reasons behind clinician's decision-making on selecting mental health care pathways. An important factor in these decisions is the supports and living circumstances of the young person, with a lack of support or unstable living circumstances making admission as an in-patient more likely.

This implies that if programs can be put in place for young people in unstable or unsupported living circumstances, clinicians may be more able to refer to community mental health care services. This not only has benefits for the young person, reducing the likelihood that they will re-present at an emergency department for a subsequent self-harm, it also reduces the cost of both the initial care and the costs from more frequent re-presentations.

Improved data

One point noted by the researchers in this study is that there were insufficient data to look in more detail at specific mental health care pathways and their outcomes for different young people. There are four aspects to this data gap:

Firstly, the data were not sufficient to allow the researchers to evaluate outcomes from the different types of community mental health care provided to children and adolescents who self-harm. It was only possible to model the four broad mental health care pathways. While this reveals significant policy implications as described above, the type of community mental health care provided to young people could affect emergency department re-presentation and this should be examined.

Secondly, data were not available on whether young people engaged with the service they were referred to on discharge from the emergency department, because the health records did not include records of ongoing care in the community. This means the research could not map the patient journey of mental health care beyond the emergency department. Key further insights would likely come from such analysis.

Thirdly, important data about the young people that may impact the effectiveness of mental health care pathways is not being captured, such as the use of prescribed medications, family-related variables, and co-morbidities including mental health diagnoses. This data, especially combined with data on the different types of community mental health care and on engagement with services, could provide important information to clinicians when determining to which of the twenty-five pathway options a young person should be referred.

Finally, the study highlighted the limitations of available administrative data, which prevented the ability to compare the costs and outcomes associated with the different pathways for youth experiencing self-harm.

Policy recommendations

1. Ensure that systems are in place to allow integrated care coordination across all the community mental health care service options to which young people who have self-harmed may be referred. This includes mental health crisis supports, general practitioners, and aftercare supports.

2. Put in place programs to support young people who have self-harmed and are in unstable or unsupported living circumstances.

3. Data systems should capture:
   a. which community mental health care service that young people re-presenting at emergency departments for self-harm were previously referred,
   b. whether the young person engaged with the community mental health care service they were referred to, or any other community mental health services they engaged with, and
   c. further data about the young people presenting to emergency departs after self-harm, on variables that are known to potentially impact mental health care service effectiveness.

Note: recommendations are proposed by Suicide Prevention Australia based on the above research, they are not recommendations of the researchers referenced.

References

Australian Institute of Family Studies (2020). *Suicidality and help seeking in Australian young people.* Suicidality and help seeking in Australian young people. https://aifs.gov.au/cfca/2020/10/29/suicidality-and-help-seeking-australian-young-people

Australian Institute of Health and Welfare (2021). *National Suicide and Self-Harm Monitoring System.* https://www.aihw.gov.au/suicide-self-harm-monitoring

Bourke, S, Brunoro, C, Bulfone, L, Cox, J, Desborough, J, Lancsar, E, Marasinghe, D, Richardson, A, Ride, J (2021). *The Better Care and Better Outcomes for Youth Experiencing Self-Harm Project: Final Report*, (unpublished manuscript) The Australian National University, Canberra.

Chandler, A. (2017). Seeking secrecy: A qualitative study of younger adolescents' accounts of self-harm. *Young, 26*(4), 313–331. https://doi.org/10.1177/1103308817717367

De Leo, D., & Heller, T. S. (2004). Who are the kids who self-harm? An Australian report school survey. *The Medical Journal of Australia, 181*(3), 140–144. https://doi.org/10.5694/j.1326-5377.2004.tb06204.x

Hawton, K., Saunders, K. E. A., & O'Connor, R. C. (2012). Self-harm and suicide in adolescents. *Lancet, 379*(9834), 821–830. https://doi.org/10.1016/S014-6736(12)60322-5

Hiscock, H., Neely, R. J., Lei, S., & Freed, G. (2018). Paediatric mental and physical health presentations to emergency departments, Victoria, 2008–2015. *The Medical Journal of Australia, 208*(8), 343–348. https://doi.org/105694/mja17.00434

Kinchin, I., Russell, A. M. T., Byrnes, J., McCalman, J., Doran, C. M., & Hunter, E. (2020). The cost of hospitalisation for youth self-harm: Differences across age groups, sex, Indigenous and non-Indigenous populations. *Social Psychiatry and Psychiatry Epidemiology, 55*(4), 425–434. https://doi.org/10.1007/s00127-019-01807-6

Mitchell, R. J., Seah, R., Ting, H. P., Curtis, K., & Foster, K. (2018). Intentional self-harm and assault hospitalisations and treatment cost of children in Australia over a 10-year period. *Australia and New Zealand Journal of Public Health, 42*(3), 240–246. https://doi.org/10.1111/1753-6405.12782

Perera, J., Wand, T., Bein, K. J., Chalkley, D., Ivers, R., Steinbeck, K. S., Shields, R., & Dinh, M. M. (2018). Presentations to NSW emergency departments with self-harm, suicidal ideation, or intentional poisoning, 2010–2014. *The Medical Journal of Australia, 208*(8), 348–353. https://doi.org/10.5694/mja17.00589

Zanus, C., Battistutta, S., Aliverti, R., Monitco, M., Cremaschi, S., Ronfani, L., Monasta, L., & Carrozzi, M. (2017). Adolescent admissions to emergency departments for self-injurious thoughts and behaviors. *PLoS ONE, 12*(1), e0170979. https://doi.org/10.1371/journal.pone.0170979

Suggested citation