# The characteristics of adults convicted of arson offences in Aotearoa New Zealand

Nichola Tyler

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# A common, costly, and complex problem

- Tens of thousands of fires set in countries around the world annually
- Responsible for significant human, property, economic, social, and environmental harm
- Lack research to inform effective assessment, treatment and management across socio-cultural contexts
- Resettlement challenges are common

# The picture in Aotearoa New Zealand

Approximately 6,545 (35%) of all fires are deliberately lit

Around half of all deliberate fires are lit by adults

Costs around $200 million per year in damage and loss of property

631 people in Corrections care with a history of firesetting

(Ara Poutama Aotearoa, 2021; Johnson & Mossman, 2023; New Zealand Fire Service, 2011)

# Lack of focus on assessment and treatment

- Lack of validated assessments for firesetting
- Availability of specialist interventions patchy
- Recognition that socio-cultural differences in fire learning experiences
- Little research to inform assessment and intervention in the Aotearoa New Zealand socio-cultural context

(Fessler, 2006; Gannon et al., 2022; Pyne, 2019; Sambrooks et al., 2021; Tyler et al., 2019)

# Aim

- Study part of a wider project funded by The Royal Society of New Zealand – Te Apārangi

1. To examine the characteristics of adults convicted of firesetting offences in Aotearoa New Zealand
   - Subtypes of firesetting adults
   - Factors associated with multiple and dangerous firesetting

2. Compare characteristics of firesetting adults to a matched sample of non-firesetting adults

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# Method

- Court records for adults convicted of arson offences 2017-2021
  - 310/478 cases accessed (64.9%) covering 328 defendants

- Characteristics coded for each defendant:
  - Demographic and background
  - Psychological/clinical
  - Offending history
  - Firesetting offence behaviours
  - Crime scene characteristics

  - High dangerousness > $100,000 damage or likely risk to life

  - Multiple firesetting = 2 or more reports of firelighting

# Results: Demographics

| Characteristic | *n* (%) |
|---|---|
| Age | |
| 18 – 25 years | 88 (26.8) |
| 26 – 35 years | 103 (31.4) |
| 36 – 45 years | 66 (20.1) |
| 46 – 55 years | 41 (12.5) |
| 56 – 65 years | 11 (3.4) |
| > 65 years | 5 (1.5) |
| Gender | |
| Male | 259 (79.0) |
| Female | 66 (20.1) |
| Other | 2 (0.6) |
| Ethnicity | |
| New Zealand European (Pākeha) | 103 (31.4) |
| Māori | 134 (40.9) |
| Pacific Island | 14 (4.3) |
| Asian | 4 (1.2) |
| European | 16 (4.9) |
| Middle Eastern | 2 (0.6) |
| African | 1 (0.3) |
| Other | 3 (0.9) |

*Note.* Missing data for the variable age was 4.3%; missing data for the variable gender was 0.9%; missing data for the variable ethnicity was 25.3%. For the variable ethnicity, more than one option could be selected for participants recorded as identifying with multiple ethnicities.

# Results: Clinical and offending history

**Clinical history**

- 39% diagnosis of a MH condition
- 13.1% IDD diagnosis
- 13.1% diagnosis of PD
- 37.1% history of suicidal ideation, attempt, or self harm
- 62.2% history of substance/alcohol abuse

**Offending history**

- 34.5% convictions < 18 years
- 36.9% criminally versatile
- 0.6% firesetting specialists
- 63.1% previous convictions violent offences
- 54% convictions for previous property offences

# Results: Firesetting and crime scene behaviours

**Motivations**

- 45.6% anger, revenge, harm or scare
- 24.2% Antisocial intent
- 23.7% Mental health related
- 23.4% Communicate needs
- 13.0% Change internal affect
- 9.4% Fire fascination/interest
- 15.6% Other

**Victim relationship**

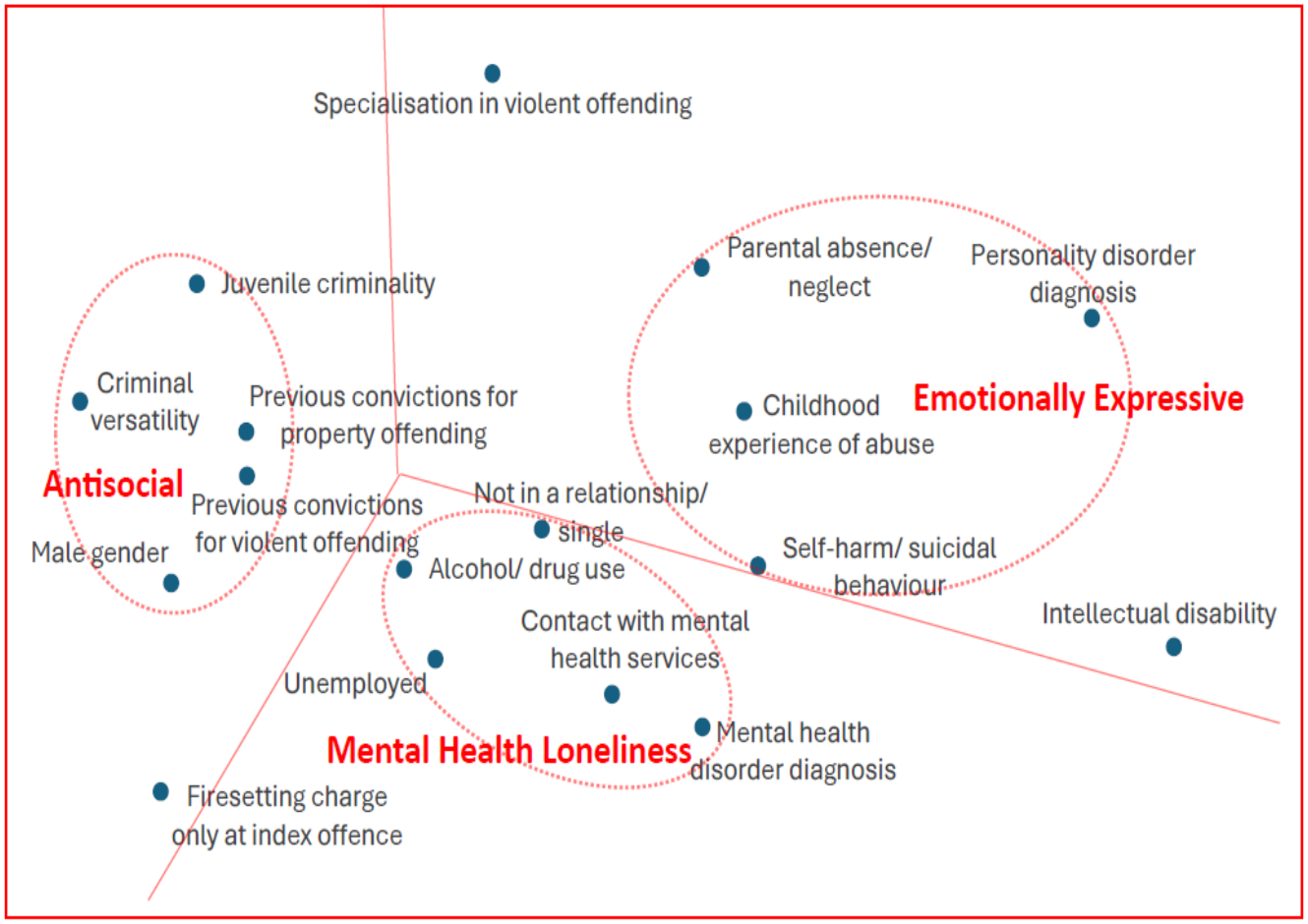
- 45.2% business/public service
- 37.3% partner, ex-partner, whānau
- 30% unknown/stranger
- 22% known acquaintance

**Crime scene behaviours**

- 64.3% set fire to a structure
- 72% set the fire alone
- 16.8% set multiple seats of fire
- 40.5% planning/premeditation evidence
- 35.4% intoxicated at the time of the offence
- 33% stayed at the scene of the fire
- 34.85% used accelerants

# Results: Typologies

- Antisocial and mental health loneliness most common subtypes
- 16.7% of sample “hybrid” subtypes
- 61.89% of sample could be classified as a dominant or hybrid subtype




*MacDonald’s Omega*
*Antisocial: .77; Emotionally Expressive: .67; Mental health loneliness: .68*

# Results: Multiple firesetting & dangerousness

| Multiple firesetting | One time firesetting | High dangerous firesetting | Low dangerousness firesetting |
|---|---|---|---|
| • Target vegetation<br>• Target a bin or skip<br>• Motivated to change internal affect<br>• Have previous | • Have a familial/intimate relationship with victim<br>• Be older at the age of their first recorded fire<br>• Convictions for motoring offences | • Target structures | • Target vehicles |

**No relationship between multiple firesetting and dangerousness**

# Discussion

- Pattern of findings broadly similar to those observed in other socio-cultural contexts
- Reoffending and dangerousness appear to be two separate domains of risk
- Some variables had high levels of missing data, use of proxy indicators
- More research needed to understand firesetting across socio-cultural contexts including direct comparison studies
- Need to ensure firesetting assessment and interventions are culturally safe and responsive

# Next stage of project …

Examine similarities and differences in characteristics with matched comparison group

Validate assessment tool for fire factors in Aotearoa New Zealand context

Consider what collective findings mean for assessment and intervention adaptation

Consider if we need a practice framework to support socio-culturally responsive assessment and intervention for firesetting

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# Thank you!

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# Using a public health approach to guide research and prevention of deliberate firesetting

Nichola Tyler

*Troy McEwan, Emma Barrowcliffe, Lauren Ducat, Theresa A. Gannon, Robert Kinscherff, Robert Stadolnik, and James R.P. Ogloff*

# Scope of the problem

- England – 50% (76,100) of fires deliberate (Arson Prevention Forum, 2017)
- New Zealand – 35% (6,545) of fires deliberately lit (Johnson & Mossman, 2023)
- Southern Europe - 24% of wildfires in 2022 deliberately started (Rodrigues et al., 2023)
- South East Australia - 28% of bushfire ignitions classified as deliberate (Collins et al., 2015)
- Approx 14.4% of general population have engaged in firesetting (Gannon et al., 2022)

# A public health issue

- Deliberate fires associated with significant health impacts
  - Injury/fatality
  - Psychological and emotional distress
  - Physical impacts of smoke pollution and inhalation of fumes
  - Displacement of people and wildlife
- Calls for firesetting to be recognised as an international public health issue

(Kolko, 2001; Tyler et al., 2019; in prep)

# What do we know about effective prevention of firesetting?

- Very little!
- Lack of knowledge on risk and protective factors to inform prevention
- Absence of evidence-based tools to guide identification and risk assessment of firesetting
- While some attention paid to secondary and tertiary prevention, no focus on primary prevention
- Where interventions exist, ‘patchy’ availability

(Gannon et al., 2022; Tyler et al., in prep)

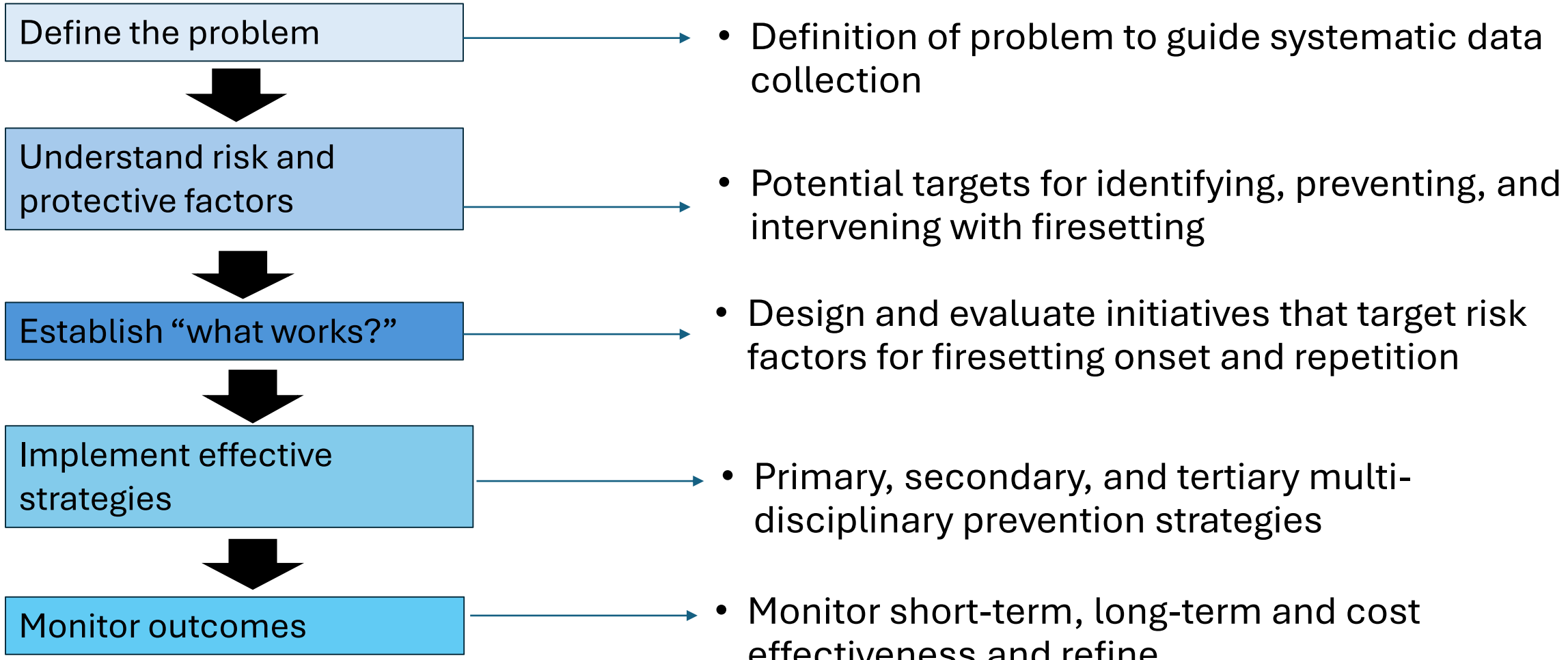
# Why do we know so little about effective prevention of firesetting?

- Lack of attention from both research and funding perspective
- Firesetting sometimes perceived as “not as serious” as other behaviours
- Wildfires/bushfires often viewed as naturally occurring phenomena or indirect result of human behaviour
- Another agencies problem …
- Research challenges
  - Arson one of most poorly prosecuted offences
  - Lack of consistent routine recording and surveillance of data
  - Challenges with establishing multidisciplinary partnership
  - Heavy focus on ‘bottom of cliff’

# Applying a public health approach

- Population-based system-wide approach to prevention of health problems
- Views firesetting as a preventable consequence of a range of social, psychological, economic, and environmental factors
- Promotes intersectoral action and utilises multiagency working to target the root causes, not just outcome
- Already successfully applied to other problematic behaviours (e.g., violence, sexual violence, maltreatment)
- Particularly appealing given incidence of firesetting in general population and base rate for reoffending

# Applying a public health approach



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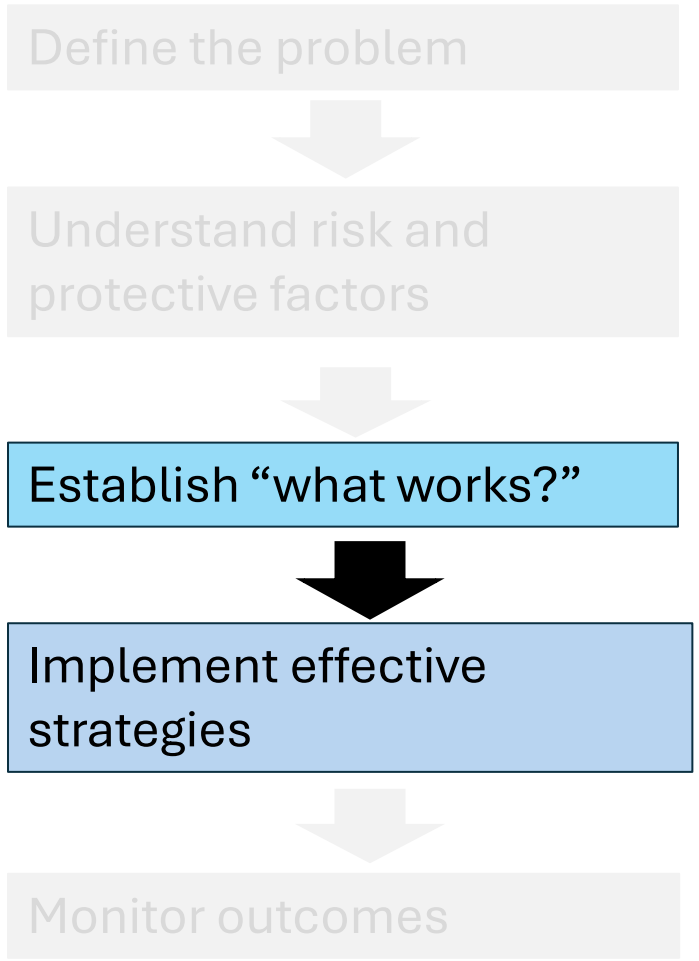
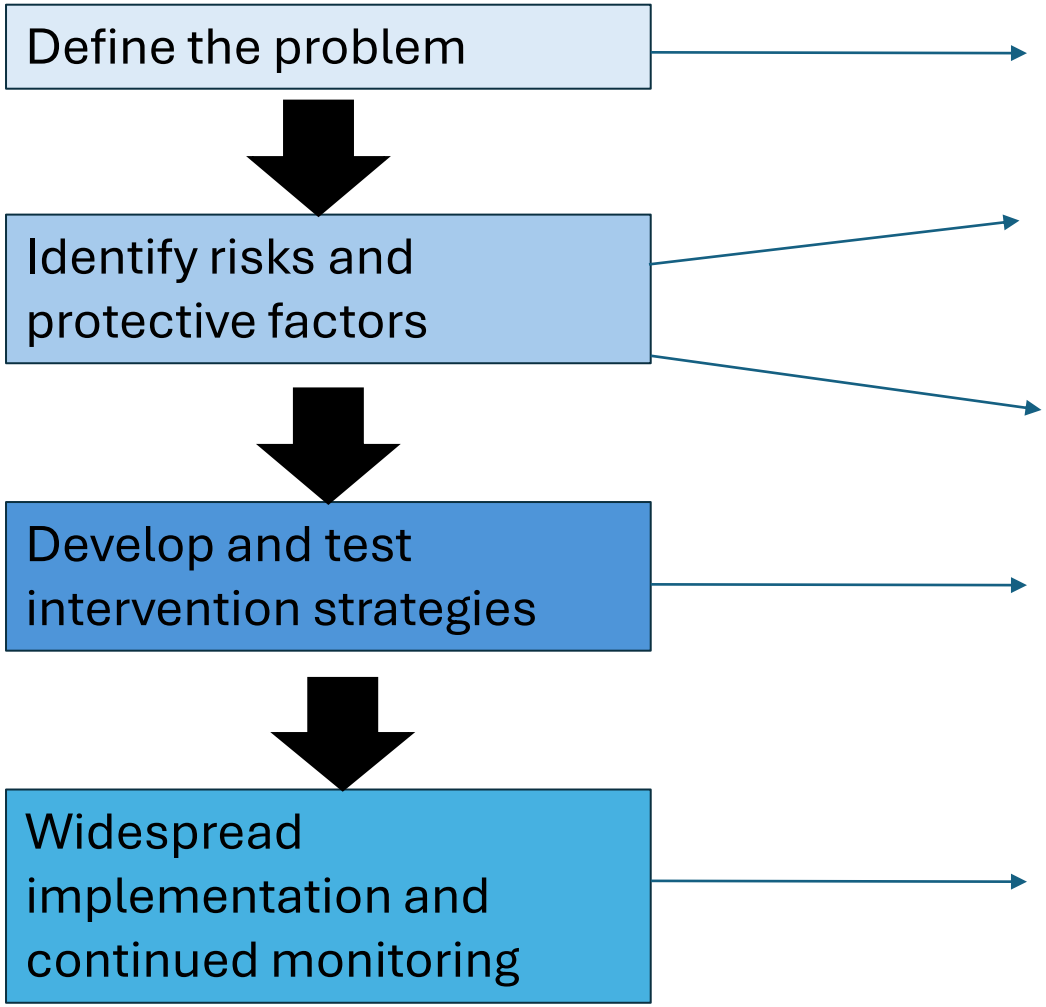



- Primary: Reduce risk/prevent causes of firesetting onset in whole population
- Secondary: Early identification/intervention (e.g., problematic interests, attitudes and behaviours towards fire)
- Tertiary: Post-incident intervention - reducing risk of repeat firesetting

# Challenges to applying a public health approach




Incident stats but lack of robust 'people', economic, health & service use stats

Limited research on risk factors for firesetting, particularly longitudinal studies

Validated theory in its infancy

Some existing initiatives in place, however, gaps in provision and lack of evaluation

Lack of understanding of long-term outcomes and cost effectiveness of interventions

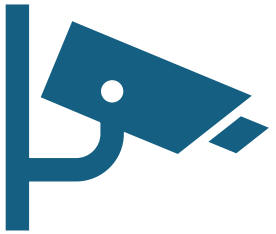
(Tyler et al. in preparation)

# How can we address these gaps?

Use theory and principles of a public health model to guide a coordinated and systematic response to advancing research and practice

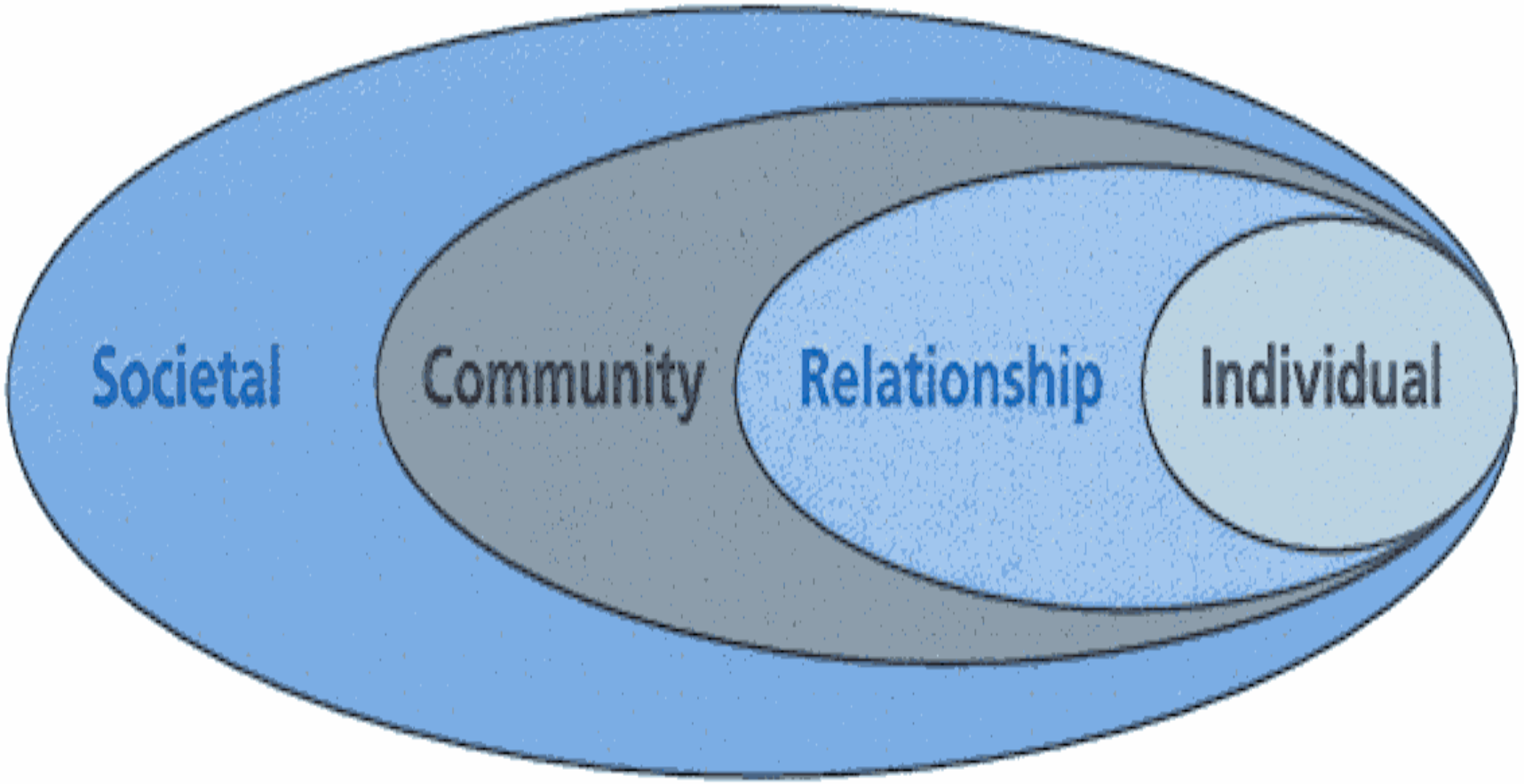
# Defining and measuring the problem

Consensus on definition of firesetting



Consistent recording and surveillance of data across agencies and jurisdictions

# Aetiology & risk factors: a socio-ecological model

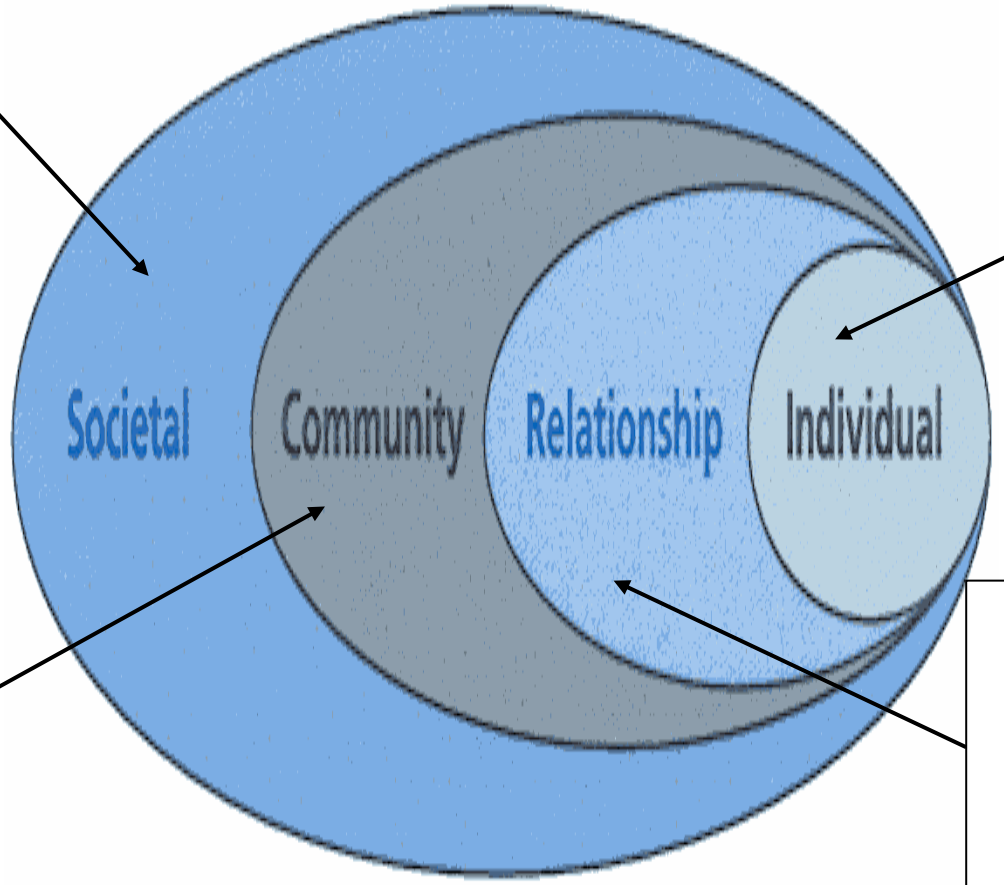



(Dutton, 1995, 2006)

# Socio-ecological model applied to firesetting

Lack of firesetting specific policy/strategy
Lack of systematic data collection/surveillance
Lack of inter-agency collaboration

Laws and lore around fire use




History of fire play/firesetting
Interest, attitudes, and associations with fire
Mental health/personality disorder
Self/emotional regulation problems
Substance use

Community attitudes towards fire use and firesetting
Availability of ignition sources
Fire safety provision
Monitoring in high-risk areas
Community attitudes towards reporting
Cultural practice around fire

Lack of parental supervision
Modelling/reinforcement of inappropriate fire use
Antisocial peers
Communication and relationship difficulties

# Developing and evaluating interventions

## Primary prevention

(general population)

- Policy/legislative provisions?
- Fire safety awareness / reporting campaigns?
- School/community based fire education?

## Secondary prevention

(at risk individuals)

- Identification and management
- Fire safety education / home visit?
- Diversion/early intervention

## Tertiary prevention

(repeat firesetting)

- Risk assessment/ communication
- Intervention and risk management for individual and familial risk factors

# Directions for research

| Public health stage | Research needs |
|---|---|
| Define problem | • Standardised recording of data<br>• Use of self-report methodologies<br>• Analysis of routine data across agencies<br>• Prevalence and patterns of fire incidents, health impacts, service usage |
| Identify risks and protective factors | • Testing/validation of theories across socio-cultural contexts and settings<br>• Prospective longitudinal and multi-wave studies<br>• Development and validation of screening and risk tools including acceptability, sensitivity and predictive accuracy |
| Develop and test intervention strategies | • High quality differential studies, rigorous evaluation designs<br>• Multiple outcome measures<br>• What works best for whom?<br>• Refinement of interventions following evaluation |
| Implementation and continued monitoring | • Ongoing evaluation built into implementation plans including cost effectiveness analysis |

# Integrating research and practice

Where should resources be targeted?

Where are the knowledge and practice gaps (and challenges)?

Who should / could be involved?

How can we facilitate partnership working?

# Discussion

- Addressing firesetting as a public health issue has a number of benefits:
  - Framework to identify knowledge gaps & organise research and practice developments
  - Emphasises prevention at multiple levels
  - Encourages wider examination of risk factors, beyond the individual level
  - Promotes multiagency collaboration
  - Embeds evaluation and evidence-based practice

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