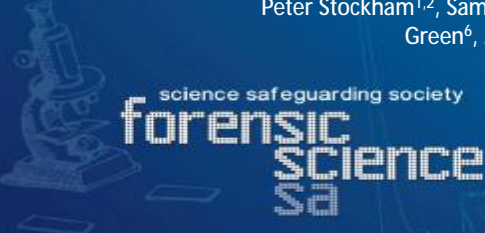


Results of the South Australian Drug Early Warning System Emergency Department Admission Blood Psychoactive Testing (EDABPT) Study

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science safeguarding society
**forensic
science
SA**

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Drug use in the community

- Hospital level data
 - drugs causing acute harm
 - limitations
 - treating clinicians subjective interpretation of presenting symptoms
 - unreliable as a source of drug use information
 - limited analytical toxicology facilities





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25I-NBOMe Cluster

- 21 presentations to emergency department over one weekend
 - hallucinations, agitation, aggression, seizures, hypertension and tachycardia



NEWS SOUTH AUSTRALIA THE MESSENGER BREAKING LAW & C

NEWS

Man charged with drug trafficking after bad ecstasy tablets reportedly causes bizarre behaviour among Adelaide users

Police Reporter Dan Hydr, The Advertiser
July 29, 2013 2:04pm

A BAD batch of ecstasy in circulation on the weekend caused users to strip and swim in the Torrens, lick floors, rob themselves on the road and - in one case - act like a drunken in a taxi, police revealed today.

A total of 21 were taken to hospital over the weekend displaying overdose symptoms suspected to be from the bad ecstasy tablets.

One man, 21, remains in the Royal Adelaide Hospital in a critical condition.

SA Police Superintendent Anthony Fioravanti said emergency services were particularly busy in the city on Saturday night.

"Police and health services had a busier than usual night as a result of reports people had taken ecstasy tablets that were from a bad batch," he said.

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Ethical approval

- Under the SADEWS banner:
 - Joint Ethics proposal by Forensic Science SA Toxicology Group and Royal Adelaide Hospital Emergency Dept Clinicians
 - Take de-identified blood samples of intoxicated patients
 - » where blood is already being taken for clinical reasons
 - Conduct comprehensive toxicology at forensic facility

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Ethical approval

- Unfunded Pilot program
 - Nov 2017-March 2019
 - Testing absorbed into casework
 - 1 hospital
 - 103 samples from 'unusual' intoxications or clusters

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NCCRED


National Centre for
Clinical
Research on Emerging
Drugs

Capacity Building Grants

- Generate evidence based knowledge on substances causing harm in ED's
 - 4 hospitals across Adelaide
 - Expanded enrolment ANY intoxication case
 - Expecting ~900 samples/ 12 months
 - Emphasis on methamphetamine use




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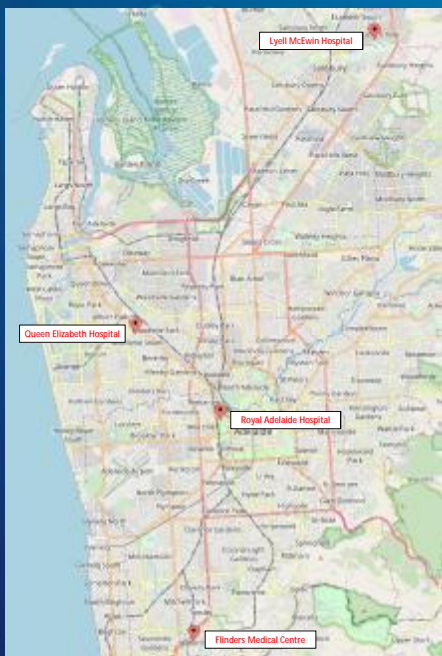
National Centre for
Clinical
Research on Emerging
Drugs

Capacity Building Grants




- Study Goals
 - What are the range of clinical presentations for methamphetamine users?
 - How do methamphetamine concentrations and interactions contribute to the presentations?
 - Do the standard clinical descriptors for MA use disorder need updating?
- Feed back information :
 - directly to SA Drug Early Warning System
 - health networks
 - clinicians
 - national drug data sharing networks

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Preliminary Results

- > 580 samples from 4 hospitals since March 2019
- primarily single patient presentations
- 11 clusters (2 or more patients)



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Data Collection form

After collection, please complete this and the form in the plastic bag provided and return to study officer

PLEASE INCLUDE ANY IDENTIFYING INFORMATION ON THIS FORM OR THE VIALS

Date of presentation: 02/11/15 Time: 10:15 hours

Hospital/clinic: [redacted]

Form completed by (name): [redacted]

Address for results (if not at site of collection): [redacted]

Current address: [redacted]

Home contact number: [redacted]

Work contact number: [redacted]

Banker: [redacted]

Age: [redacted]

Number of children aged (or last) under 16 in household: [redacted]

Setting of collection (circle one)

- Public housing
- Private social event/party
- Institutional (public sector office party etc)
- Licensed venue
- Public environment (park/street)
- Correctional facility
- Other (specify: [redacted])


Identify the collection site

How was the collection site identified? (circle one)

- Advertisement
- Personal invitation
- Public environment (park/street)
- Institutional (public sector office party etc)
- Licensed venue
- Public environment (park/street)
- Correctional facility
- Other (specify: [redacted])

Additional items:

- Blood samples from [redacted]
- Addressed [redacted]
- Unaddressed [redacted]
- [redacted]
- [redacted]

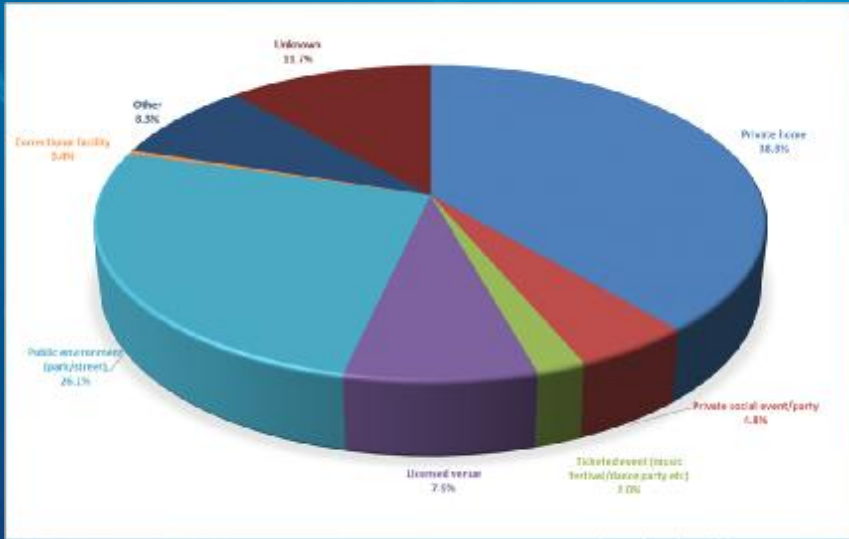


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Preliminary Results

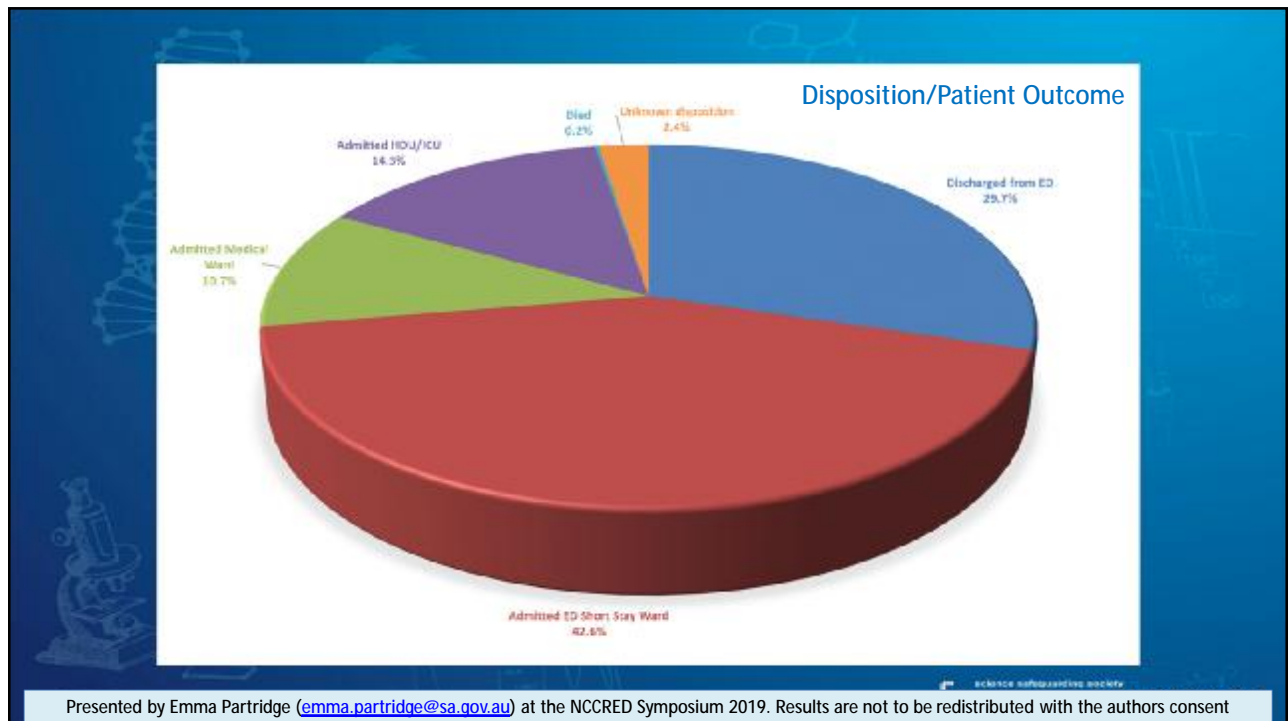
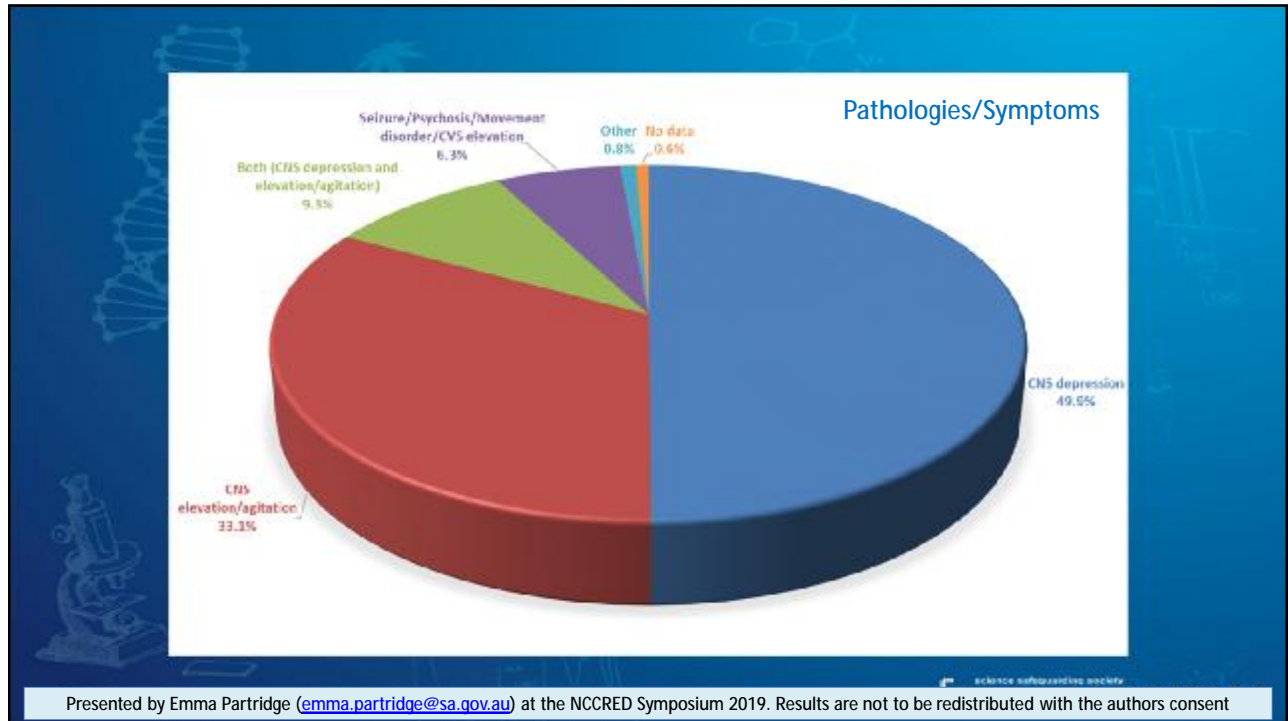
- Age range 18-68 years (average 33 years)
- 64% male
34% female
(2% no gender data recorded)



Setting	Percentage
Private home	38.95%
Public area (park/street)	26.13%
Unknown	11.7%
Correctional facility	8.49%
Licensed venue	7.9%
Private social event/party	6.8%
Other	6.5%

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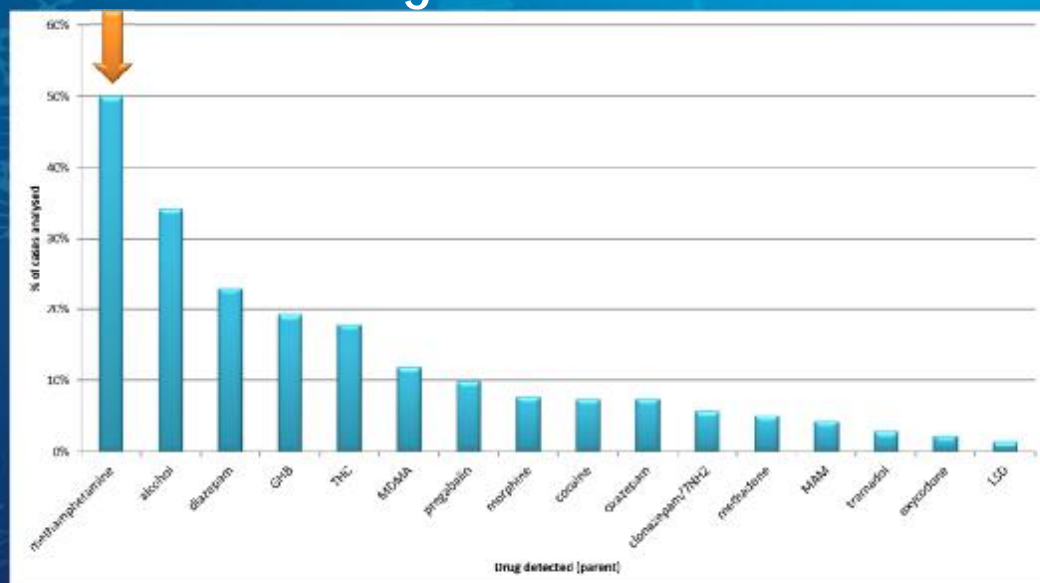
Preliminary Results (Mar to Aug 2019)

- 363 samples with targeted analysis completed
 - Alcohol
 - GHB (Fantasy)
 - THC (Cannabis), MDMA (Ecstasy)
 - General drug screen
 - amphetamines, opioids, New Psychoactive Substances (NPS), prescription medications including antidepressants, antipsychotics etc

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Drugs detected

Preliminary Results (Mar to Aug 2019)



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Preliminary Results (Mar to Aug 2019)

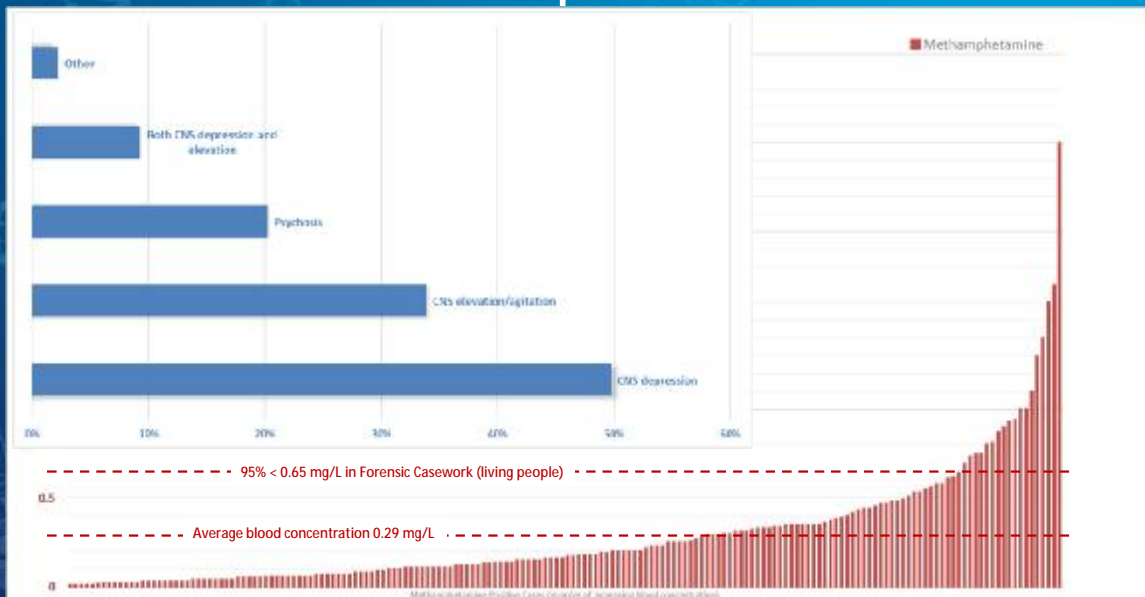
Methamphetamine

- stimulant (CNS elevation)
- doses vary when used recreationally
- Detected in 50% of cases
 - prevalence in 2006 study was 22%
- blood concentration range 0.01 – 2.5 mg/L, average 0.29 mg/L
 - majority of samples from living persons (traffic tax) tested at FSSA < 0.65 mg/L

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Preliminary Results (Mar to Aug 2019)

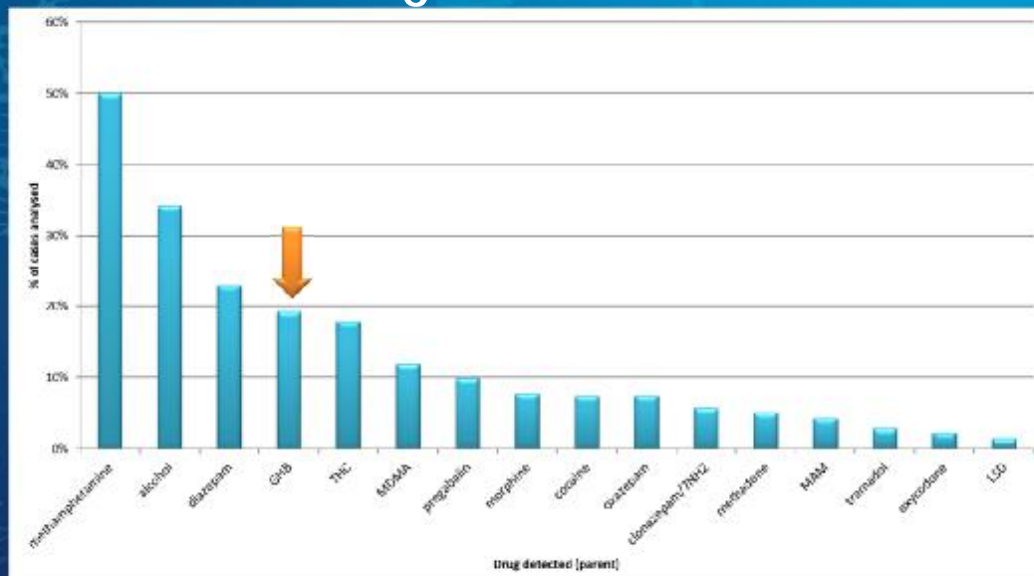
Methamphetamine



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Preliminary Results (Mar to Aug 2019)

Drugs detected



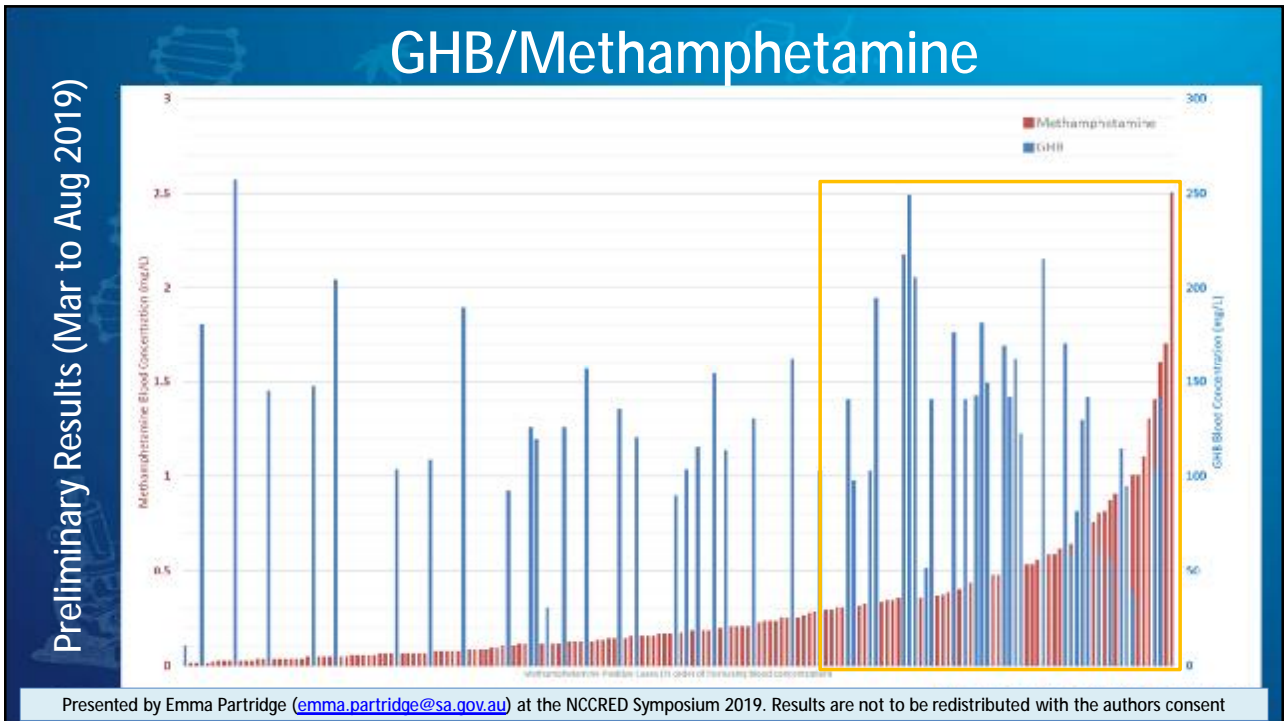
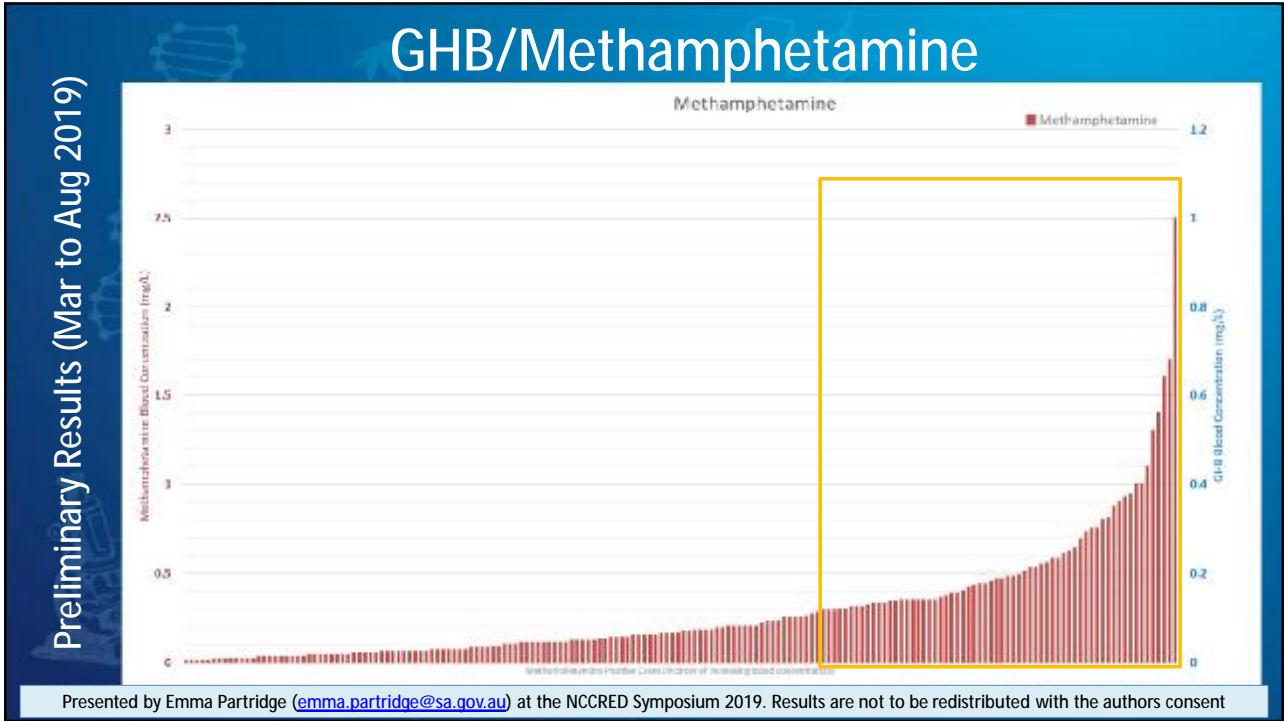
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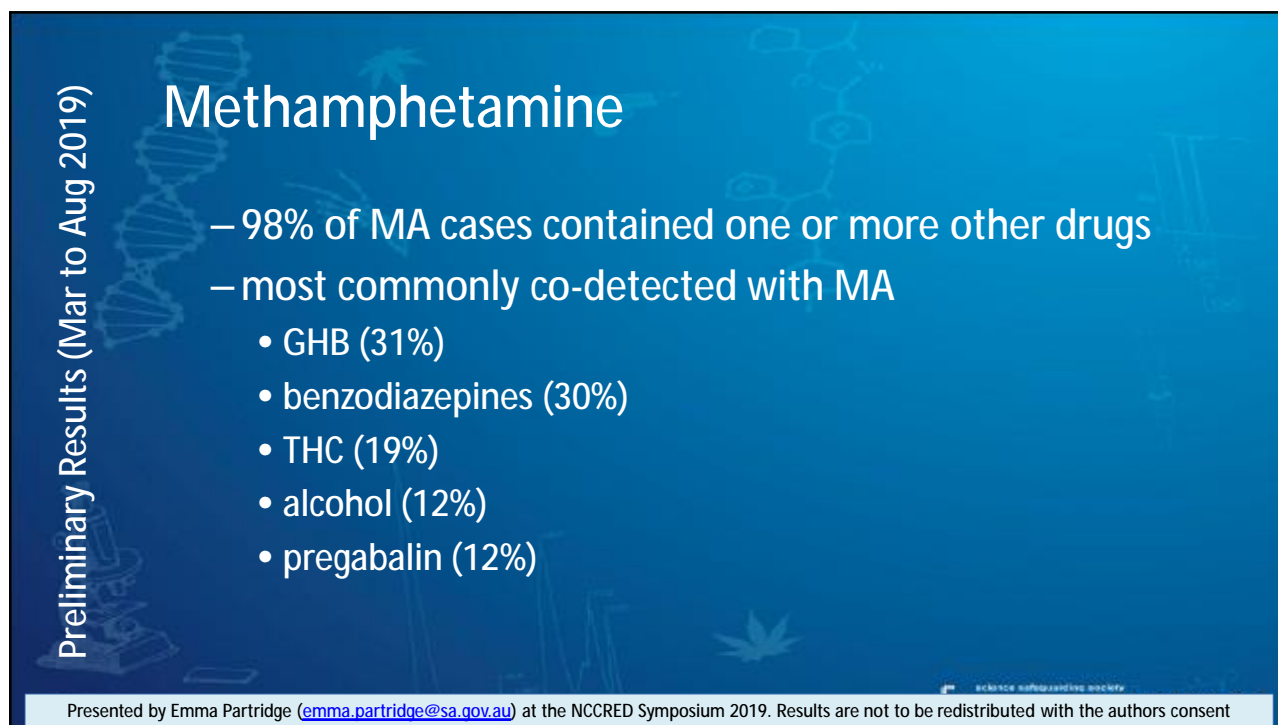
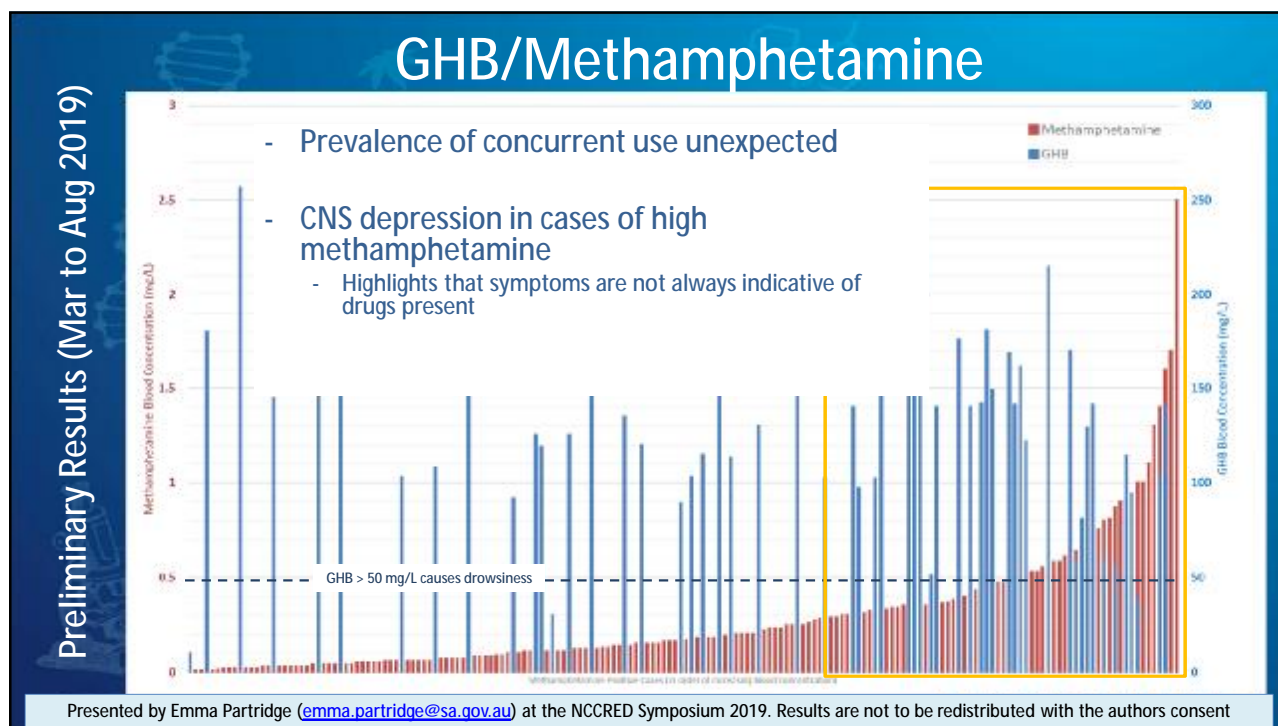
Preliminary Results (Mar to Aug 2019)

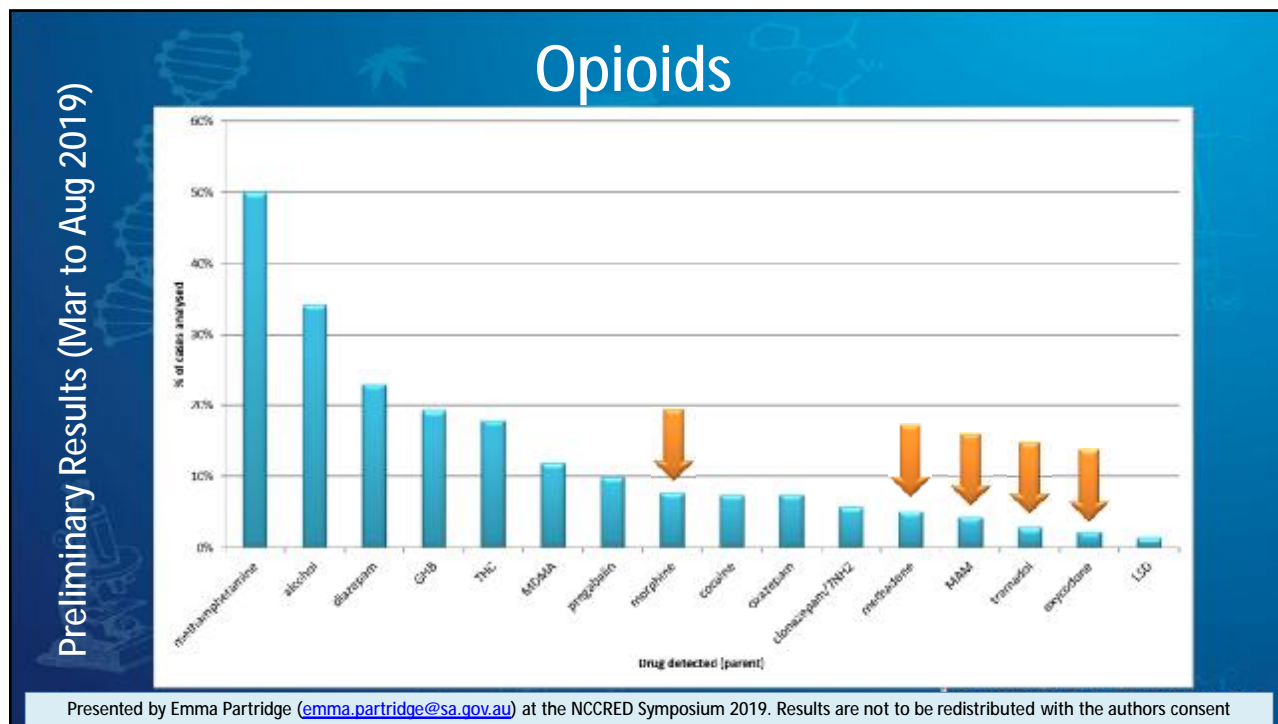
GHB

- euphoric effects, sedating (CNS depression)
- quickly metabolised
- Detected in 19% of cases
 - In 2006 study prevalence was 3%
- Range 10 – 257 mg/L, average 135 mg/L
 - Levels above 50 mg/L associated with drowsiness
- When detected was usually the cause of intoxication
- Methamphetamine detected in 82% of GHB cases

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New Psychoactive Substances (NPS)

Preliminary Results (Mar to Aug 2019)

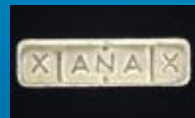
- Targeted NPS detected in the pilot study:
 - 25C-NBOMe/3-fluoroamphetamine (cluster of 4)
 - CUMYL PEGACLONE (synthetic cannabinoid)
 - Clonazolam (designer benzodiazepine)
 - Mitragynine (plant alkaloid - Kratom)

SCIENCE AND TECHNOLOGY SOCIETY

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New Psychoactive Substances (NPS)

- Targeted NPS detected in the current study:
 - Etizolam (9 cases)
 - Blood concentration ranges 0.007 - 0.4 mg/L
 - Designer benzodiazepine, can cause airway issues on its own
 - Has been reported nationally, seen in fake alprazolam tablets
 - Prescribed in certain Asian and European countries – therapeutic range 0.008 – 0.02 mg/L
 - N-ethylpentylone (cathinone)
 - deschloro-fluoroketamine (dissociative, analogue of ketamine)



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Study Outcomes/Conclusions

- High incidence of polydrug use (75% \geq 3 drugs)
 - affects clinician suspicion of drugs taken
 - masked symptoms of methamphetamine use
- Comparison of results to 2006 study shows GHB and methamphetamine use have significantly increased

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Study Outcomes/Conclusions

- Assisting in distribution of information to the public



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Study Outcomes/Conclusions

- SAAS – information to intensive-care paramedics on prehospital management of people who've consumed illicit and other drugs
- Detection of NPS at the local level that no other data source captures
- Provides new and accurate data on drug use for clinicians, early warning systems and other authorities

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Future work

- Investigate differences between hospitals/areas
- Expand the study to rural Emergency Departments
 - Mount Gambier, Murray Bridge, Berri, Port Augusta, Port Lincoln, Ceduna
- Several other Forensic labs/EDs in Australia are well underway with similar collaborations
 - Possibility of a national program (EDNA)



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