Can Drug Purity Account for the Increasing Load of Methamphetamine Identified in Australian Wastewater Monitoring Studies?

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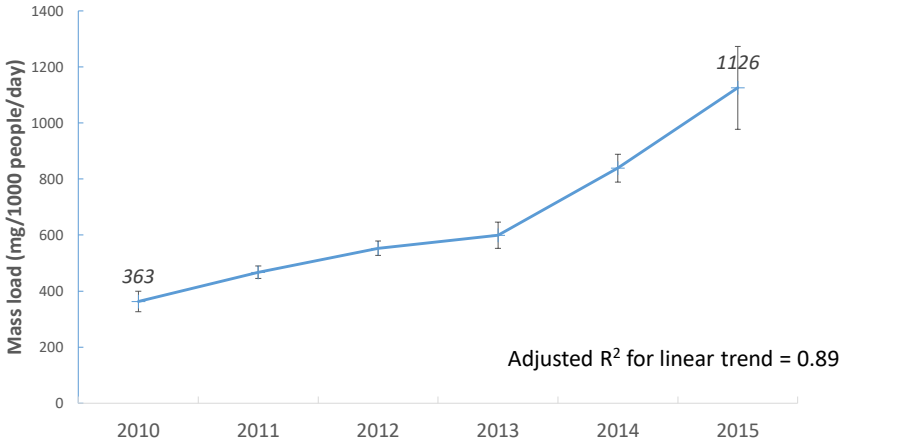
Wastewater Analysis and Research Network (WARN)

Sewer load of methamphetamine in a large urban area



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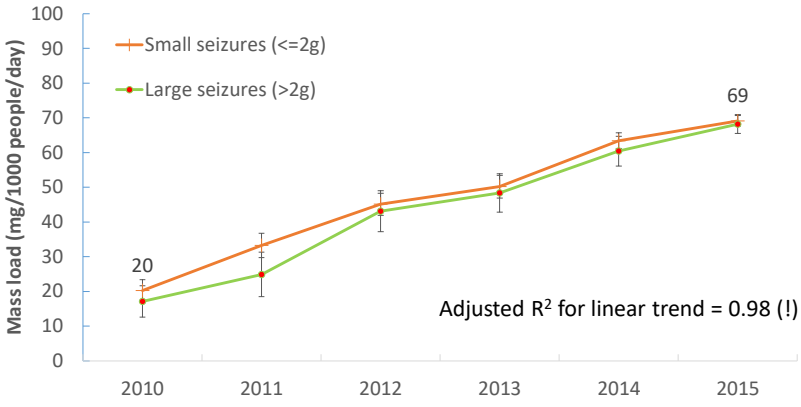
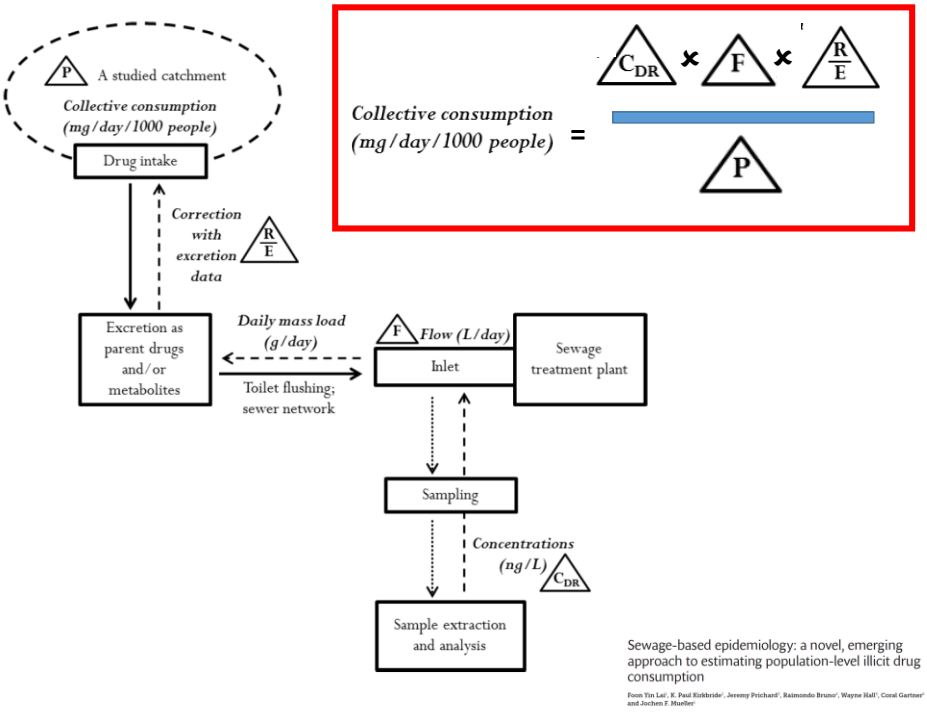
Trends in methamphetamine residues in wastewater in metropolitan and regional cities in south-east Queensland, 2009–2015

Does purity matter?



Purity of small and large seizures made in the same catchment area of the treatment plant
Source: Forensic and Scientific Services, Department of Health, Queensland Government



Why isn't purity in the equations?
Are consumers sensitive to purity changes?

Environmental chemists

Vs.

Drug epidemiologists

Are consumers sensitive to changes in purity?

	2010	2011	2012	2013	2014	2015
Powder – avg. g						
National	0.5	0.5	0.5	0.5	0.5	0.5
QLD	0.5	0.5	0.5	*0.5^*	*0.5^*	*0.2^*
Base – avg. 'points'						
National	2	2	2	2	2	1
QLD	3	2	*2^*	*2^*	*2^*	
Crystal – avg. 'points'						
National	2	2	2	2	2	1
QLD	2	2	1.5	1	1	1

^=n<10

EDRS

Are consumers sensitive to changes in purity? *Yeah Naah*

	2010	2011	2012	2013	2014	2015
Powder – avg. g						
National	0.5	0.5	0.5	0.5	0.5	0.5
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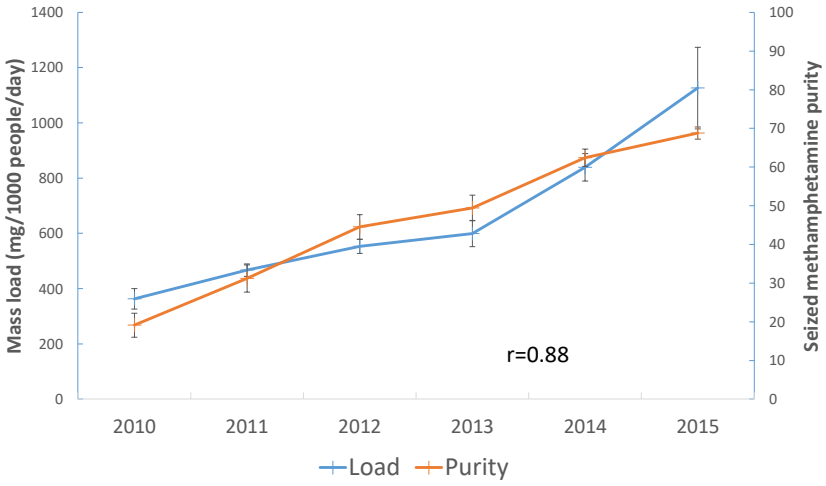
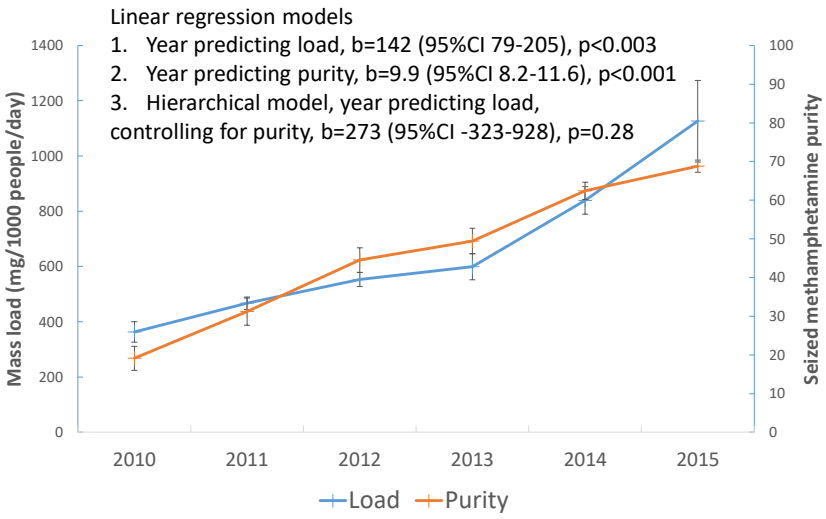
¯_(ツ)_/¯

EDRS

Putting local load and purity together



Putting local load and purity together



So….. What?

- Consumers are relatively insensitive to purity changes
- Changes in sewerage load of methamphetamine appears to be largely accounted for by changes in purity
- *Just like every other source of drug related data*, wastewater epidemiology requires triangulation with:
  - Indicator data (local purity)
  - Consumer data (volumes consumed)