P-29
Improving the regional management of mushroom exposures by a Poisons Information Centre.

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Objectives: Our poisons centre receives over 300 calls annually, originating within a large region with a range of climates and flora, so it is anticipated that the geographical distribution of mushrooms of toxicological significance will vary. Although most wild mushroom exposures result in only mild toxicity, some are associated with severe poisoning which can have a delayed onset, be unresponsive to treatment or result in irreversible organ damage or death. Toxicology textbooks and the literature describe a range of mushrooms of toxicological significance but the relevance of these varieties in our local context has not been ascertained. An improved understanding of the presence and characteristics of locally relevant mushrooms has the potential to improve risk assessment and management advice by poisons information centres.

Methods: A systematic review of the literature, including key medical toxicology references, local plant and fungi references, Pubmed and Google was performed to identify mushrooms of toxicological significance. The geographical distribution of these and other mushrooms in areas that are primarily serviced by our Poisons Information Centre (NSW, ACT and Tasmania) were determined through online resources and direct communication with herbariums and mycologists. The list was subdivided into those requiring early hospital assessment for treatment (eg. activated charcoal or antidotes), and those for which a watch-and-wait approach was acceptable.

Results: 62 toxic mushrooms (28 genii) were identified in the literature of which 31 have been reported in the regions of interest. Of these, 9 were considered to have sufficient toxicity to warrant early hospital referral for treatment and regional variation was evident: *Amanita phalloides* (liver failure and death; ACT and Tasmania), *Amanita smithiana* (kidney failure; Tasmania), *Boletus (Rubroboletus) luridus* (cardiovascular and neurological; each area), *Conocybe spp* (liver and kidney failure; each area), *Cortinarius eartoxicus* (kidney failure; Tasmania), *Galerina autumnalis* (liver and kidney failure; Tasmania), *Galerina marginata* (liver and kidney failure; each area) *Gyromitra esculenta* (neurological, and liver and kidney failure; each area) and *Hapalopilus rutilans* (neurological, and liver and kidney failure; Tasmania). In other cases, a watch-and-wait approach appeared to be reasonable. However, recommendations are based on incomplete data and geographical variability of toxin contents cannot be excluded, limiting the precision of these recommendations.

Conclusions: A systematic approach to identification of locally relevant mushrooms may improve the management of wild mushroom exposures and promote cross-discipline consultation. Lacking data impose significant limitations on these recommendations so ongoing regular reviews are required.