



Actuaries taking the lead in keeping children safe

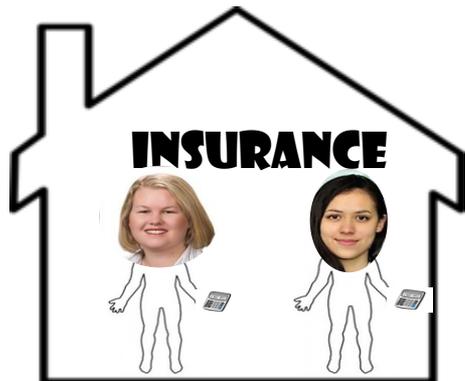
Julia Lessing and Abigail Marwick

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Actuaries “taking the lead” in keeping children safe



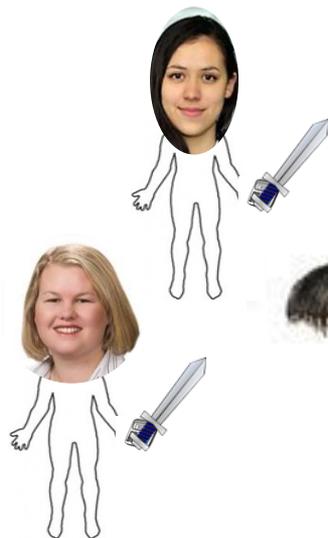
Traditionally, actuaries have used their skills in financial services. Human services were for other professionals such as police, social workers, doctors and teachers.

In the last few years, Abigail and I have ventured out of insurance and have discovered that our actuarial skills can be useful in human services, in particular child protection services.



Actuaries “taking the lead” in keeping children safe

This certainly doesn't mean that we have been out on the frontline, physically keeping children safe!



Actuaries “taking the lead” in keeping children safe

Rather, we've been using our actuarial skills to **provide analysis and insight to those who are working on the frontline**, so they might be better informed in keeping children safe.



Actuaries “taking the lead” in keeping children safe

Our key messages:

- Actuarial skills are applicable to a range of industries
- We have used actuarial skills in child protection
- There are other areas where actuaries could use their skills to help our community

Actuaries “taking the lead” in keeping children safe

This presentation covers:

- An overview of child abuse risk and how Australia responds
- A comparison of the child protection system with insurance operations
- Examples of where actuaries have used their skills in child protection
- Ideas about where else actuaries could contribute in human services

Actuaries working in child protection?

Two actuaries who began their careers in life insurance, now using actuarial skillsets to help in child protection



**Julia
Lessing**



**Abigail
Marwick**

How does child abuse risk develop?

Risk is complex and can build over time and in generations of families



Financial stress;
social exclusion



Drug/alcohol abuse;
mental health issues



Domestic and family violence
Family breakdown



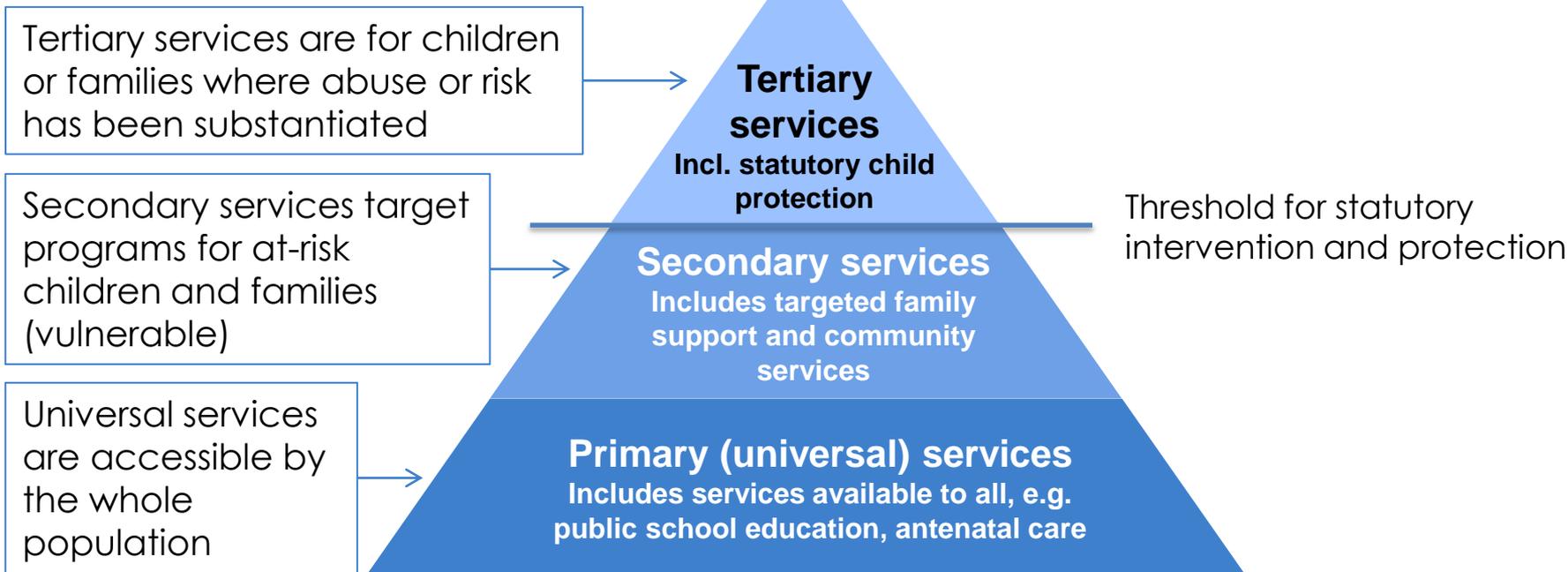
Low support
and
parenting skills



Physical / sexual / emotional abuse
Neglect
Vulnerable to predators

How does Australia respond to child abuse risk?

Australia's child welfare and protection system



Challenges in the child protection system

1. System complexities and nuances

2. Which kids?

Caseworkers, NGOs and other agencies can't get to all the kids reported as being at risk

3. How to respond?

Caseworker capacity and services are constrained

4. Challenges in responding

“Macro” factors (e.g. socioeconomic factors, intergenerational impacts, cultural barriers) impact how effective services can be

5. How to fund?

Deploying a child protection response in a resource constrained, silo-budget environment

So, where could actuaries help?...

Parallels between insurance and child protection services

2. Which kids?

Caseworkers, NGOs and other agencies can't get to all the kids reported as being at risk

Related area	Actuarial / statistical techniques	Insurance example	Child protection example
Risk segmentation	Risk segmentation and risk development Predictive modelling	<ul style="list-style-type: none"> Underwriting leading to differential pricing Claims management leading to triage and differential treatment 	<ul style="list-style-type: none"> Risk segmentation leading to triage and differential response
Risk factors	Regression analysis Predictive modelling	<ul style="list-style-type: none"> Smoking Age 	<ul style="list-style-type: none"> Parental drug and alcohol abuse

Parallels between insurance and child protection services

3. How to respond?

Caseworker capacity and services are constrained

4. Challenges in responding

“Macro” factors impact how effective services can be

Related area	Actuarial / statistical techniques	Insurance example	Child protection example
Claims	<p>Actuarial models to triage claims / reports</p> <p>Statistical modelling to determine:</p> <ul style="list-style-type: none"> • effective responses • risk development, mitigation and management • workforce considerations 	<ul style="list-style-type: none"> • Event occurs, claimant notifies insurance company • Insurance company investigates • If substantiated, claims management required, financial assistance paid 	<ul style="list-style-type: none"> • Suspected child abuse reported to government. • Child protection workforce investigates • If substantiated, case management required, possible referrals, financial aid, other support

Parallels between insurance and child protection services

3. How to respond?

Caseworker capacity and services are constrained

4. Challenges in responding

“Macro” factors impact how effective services can be

Related area	Actuarial / statistical techniques	Insurance example	Child protection example
Geography	Risk and outcomes analysis by geography , allowing for supply constraints and different demand profiles	<ul style="list-style-type: none"> Understanding and managing risks specific to certain areas (e.g. flood zones) 	<ul style="list-style-type: none"> Understanding and managing risks specific to certain communities (e.g. Indigenous communities, low socioeconomic profile)
Portfolio analysis / management	Supply and demand modelling Driver analysis of productivity / effectiveness Leave analysis Projections	<ul style="list-style-type: none"> General insurance claims management (including network of approved service providers) 	<ul style="list-style-type: none"> Optimising capacity and capability of an adequately skilled workforce to deliver child protection services

Parallels between insurance and child protection services

5. How to fund?

Deploying a child protection response in a resource constrained, silo-budget environment

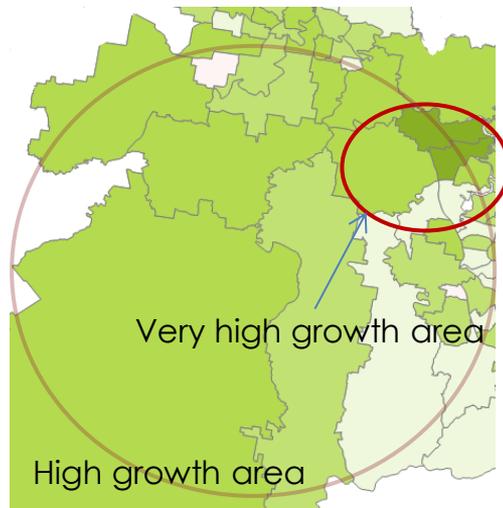
Related area	Actuarial / statistical techniques	Insurance example	Child protection example
Financial management in a regulated environment	Actuarial investment model Cost/benefit analysis Budgeting and forecasting Funding scenario modelling	<ul style="list-style-type: none"> Funding – premiums and investment income, plus capital Regulated through legislation, APRA 	<ul style="list-style-type: none"> Government appropriations, not-for-profits, charitable institutions, social finance Regulated through state legislation, government policy

How actuaries can use their skills to help keep children safe

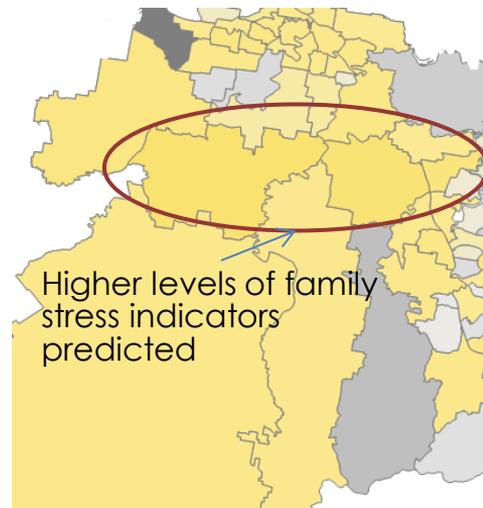
Modelling family risk factors across an Australian state to inform service delivery requirements

- Researched key indicators of family stress
- Built a predictive model for service demand, using information on child protection reports and estimated geographical prevalence of stress indicators
- Used model to predict future volumes of referrals by geography
- Worked with regional staff to understand different community trends and issues

15 year avg. annual population growth rate

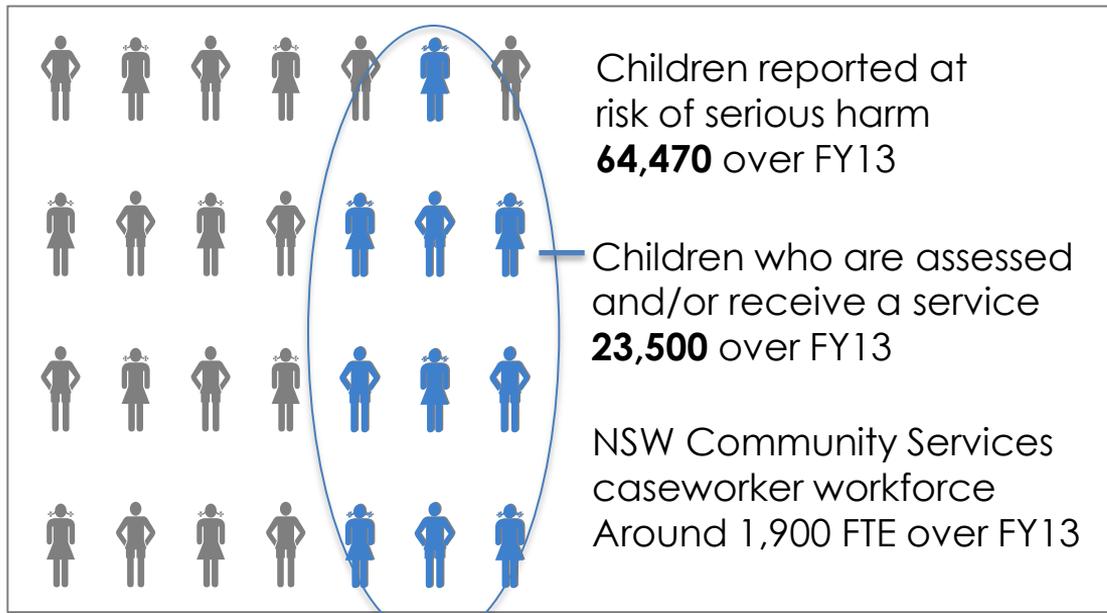


15 year predicted referrals



How actuaries can use their skills to help keep children safe

In NSW...



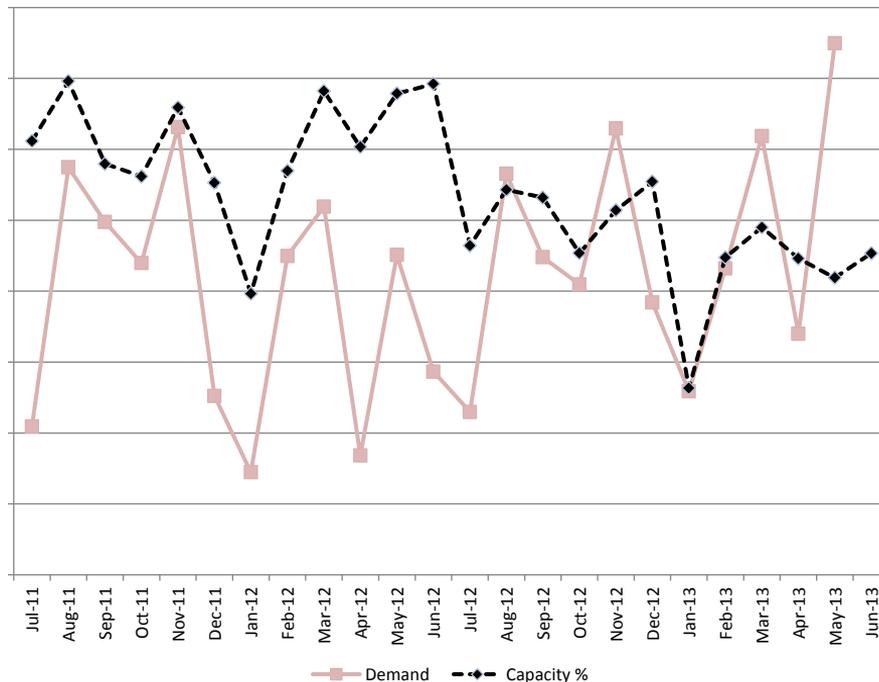
Caseload calculation and statistical analysis to understand drivers of caseworker activity intensity

- Statistical analysis of case time estimates (from surveys)
- Analysis of case characteristics and impact of operational considerations
- Development of a decision support tool to help understand caseload drivers

How actuaries can use their skills to help keep children safe

Modelling to examine options for deployment of a skilled workforce to meet the increasing demand for child protection services

- Analysis of workforce capacity and service demand
- Management of seasonal leave and backfilling
- Review of different options for workforce management and support



Other areas where actuaries could help

- **Data linkage and predictive modelling** to identify possible child abuse risk earlier
- **Actuarial investment model**, including valuation of welfare payments
- **Risk management to promote child safety**, including children in institutions
- **Cost / benefit analysis** of service delivery options
- **Analytics** to improve understanding of risk drivers
- **Design and measurement of outcomes and benefits**
- **Evaluation** of programs and initiatives
- **Scenario analysis**, including funding, service delivery and workforce options

How can I get involved?

This presentation focuses on child protection services, but could be extended to other areas outside insurance:

- **Disability services**
- **Public Health**
- **Justice**
- **Homelessness**
- **Education**
- **Transport**

Working in this sector is similar to working in insurance. You could either:

- Work directly for a provider of child protection services (e.g. government or NGOs)
- Consult to providers and advisors of child protection services, including system level advice

Further reading

Links to:

- EY OOHC caseload review (http://www.pdc.org.au/scarf/res/file/Useful%20Reading/oohc_caseload_review.pdf)
- EY caseworker capacity report (http://www.community.nsw.gov.au/docswr/assets/main/lib100040/oohc_caseload_review.pdf)
- Australian Institute of Family Studies – risk assessment in child protection (<https://www3.aifs.gov.au/cfca/publications/risk-assessment-child-protection>)
- NZ government actuarial welfare modelling (<http://www.msd.govt.nz>)
- Royal Commission into Institutional Responses to Child Sexual Abuse - Actuarial report on national redress scheme (https://www.childabuseroyalcommission.gov.au/documents/redress/r_csa_redress_final-v2.pdf)
- NDIA actuarial reports (<http://www.ndis.gov.au>)
- Bureau of Crime Statistics and Research – re-offending risk assessment in the justice system (<http://www.bocsar.nsw.gov.au>)
- Queensland (Carmody) Child Protection Commission of Inquiry (<http://www.childprotectioninquiry.qld.gov.au/publications>)
- South Australia Child Protection Systems Royal Commission (<http://www.childprotectionroyalcommission.sa.gov.au>)

Thank you