



## Insights from the Centre for Social Data Analytics – September 2020

CSDA's research and analytics tools are used by local and international agencies to support smart policy and sound decision-making in areas including health, housing, and child protection. This issue: new insights on Covid-19 contact tracing tools and the impact of Covid-19 on child protection referrals; a new child protection tool for Larimer County (CO); and our Allegheny Housing Assessment tool goes live in Allegheny County (PA).

### CSDA Team News

In late 2019 and early 2020 we said farewell to senior research fellow **Matt Walsh** who returned to the US after a two-year stint at CSDA, and to research assistant **Summer Staninski**.

**Diana Benavides Prado** was promoted to the role of senior research fellow (data science) in February.

In early 2020 we welcomed our new research assistants **Kiran Sharma Chandradevan** and **Samantha Oxley**.

In June, research fellow **Sophie Joyce** returned to CSDA after taking parental leave.

**Larissa Lorimer** returned from her secondment to the Institute for Social Science Research (The University of Queensland) in July, taking up a new role as project manager (NZ) and **Esther Sherrard** joined CSDA as a part-time project manager (US).

In August **Gayani Tennakoon** took up the position of postdoctoral research fellow at the Institute for Social Science Research, as part of the CSDA node at The University of Queensland (UQ).

### Meet CSDA's new deputy director: **Dr Nina Anchugina**



Nina Anchugina has returned to CSDA as deputy director for the 'hard problems and human impact' but also to share her knowledge of private sector best practice with a fast-growing collaborative team.

"I was first at CSDA in 2016 as a data scientist and now it has grown from a lean team into a large team of specialists based in New Zealand, Australia and the United States who are deployed in different combinations on diverse data science projects. In my new leadership role, I am borrowing some useful ideas from the private sector to make sure that as we grow, we continue to deliver high quality, high impact projects."

Since re-joining CSDA Nina has taken a leading role on the scoping and delivery of multiple translational data science projects as well as overseeing resource allocation and championing best practice for the centre.

[Read the full profile on the CSDA website](#)

[Meet the rest of the CSDA team](#)

## Research Highlights

### Health and Child Safety applications of predictive risk modelling in Australia

The CSDA team at UQ (Australia) has been helping government agencies and organisations to consider potential uses of predictive risk modelling (PRM) with work including:

1. advice for the Queensland Department of Aboriginal and Torres Strait Islander Partnerships about the possible use of PRM to help identify children at risk, for preventative services;
2. advice for the Queensland Department of Child Safety, Youth and Women about the potential use of PRM to support child protection decision-making at intake and for supervision; and
3. a research collaboration with the Institute for Urban Indigenous Health (IUIH) to investigate the possible use of PRM to help identify patients who could benefit from proactive services.

*"The challenge in many of our projects in Australia is in how to use data and machine learning tools to highlight disparities, and to support Government agencies to better meet the needs of Aboriginal people and Torres Strait Islanders. A good example is the IUIH project which arose because existing health PRM models tend to only flag patients at risk of narrow physical health outcomes or resource use. We want to test whether the data exists to support a broader concept of good health, including patients reporting their own authentic perceptions of health and wellbeing."*



*We believe this project will help to highlight that, even in the types of data that are given primacy, there is a cultural bias that has to be addressed in our healthcare systems. Because for indigenous communities good health might be about having a good feeling within oneself, and even if healthcare systems can ask these questions, frontline clinicians are less disposed to record the subjective answers to important questions like “how strong are you feeling?”, whilst facts like blood pressure are more likely to be entered consistently in electronic medical records.”*

**Rhema Vaithianathan**

### **Allegheny Housing Assessment tool deployed**

In August, the Allegheny Housing Assessment tool was deployed by the Allegheny County Department of Human Services (PA, United States). This predictive risk modelling tool will help frontline staff to prioritise requests for housing services and replaces the VI-SPDAT actuarial tool previously used. Allegheny County hopes this new PRM tool will standardise the assessment process and improve the accuracy of program referrals and admissions.

[Find out more](#)

### **Child Welfare supervision tools**

CSDA is working with the Children’s Data Network at the University of Southern California to develop and implement a PRM supervision tool for the Los Angeles County Department of Children and Family Services. CSDA’s role is to develop and deploy a risk stratification model to estimate investigation complexity and risk, allowing supervisors to better incorporate data into their supervision practices with frontline staff, while also providing opportunities to implement continuous quality improvement protocols during investigation. CSDA has also been fielding a lot of interest in the supervision support tool from other US jurisdictions and hopes to pilot a supervision tool in one or more Colorado counties within the next year.

[Find out more](#)

### **Child Welfare call screening tool for Larimer County, CO**

The pilot phase of the Larimer Decision Aid Tool (LDAT) built and deployed by CSDA began in August and will give way to a yearlong randomized controlled trial in October. The LDAT will help decision makers with the assignment decision by supplying a screening score that indicates the long arc risk of harm. Results from the impact evaluation are expected in late 2021.

### **Covid-19 Policy Primer**

CSDA researchers collaborated with New Zealand and Australian colleagues to deliver a working paper, “Digital Contact Tracing for Covid-19: A Primer for Policymakers”, which concludes that digital contact tracing solutions for Covid-19 must offer exceptional speed and achieve high take-up rates to be useful.

[Find out more](#)

### **Impact of Covid-19 on Child Protection**



Together with Mathematica (US) and our research and agency partners, CSDA delivered a webinar: “Using Data to Identify Changes in Child Welfare Referrals and Screening in the Era of Covid-19”. The webinar featured analysis of current data and discussion of the nuanced information offered by predictive risk models, to encourage deeper understanding of Covid-19’s impact on child welfare screenings and referrals.

[Watch the webinar](#)

## Recent Publications

Vaithianathan, Rhema, Benavides-Prado, Diana & Putnam-Hornstein, Emily. (2020). [Implementing the Hello Baby Prevention Program in Allegheny County - Methodology Report](#). Centre for Social Data Analytics. Auckland, New Zealand. September.

Vaithianathan, Rhema, Kithulgoda, Chamari I. (2020). [Using Predictive Risk Modeling to Prioritize Services for People Experiencing Homelessness in Allegheny County - Methodology Paper](#). Centre for Social Data Analytics. Auckland, New Zealand. September.

Vaithianathan, R., Putnam-Hornstein, E., Chouldechova, A., Benavides-Prado, D., & Berger, R. (2020). [Hospital injury encounters of children identified by a predictive risk model for screening child maltreatment referrals: evidence from the Allegheny Family Screening Tool](#). *JAMA pediatrics*, e202770-e202770.

Vaithianathan, R., Ryan, M., Anchugina, N., Selvey, L., Dare, T., & Brown, A. (2020). [Digital Contact Tracing for Covid-19: A Primer for Policymakers \(Working Paper\)](#). Centre for Social Data Analytics: Auckland University of Technology & The University of Queensland.

Benavides Prado, D., Koh, Y. S., & Riddle, P. (2020). [Towards Knowledgeable Supervised Lifelong Learning Systems](#). *Journal of Artificial Intelligence Research*, 68, 159-224.

Vaithianathan, R., Dinh, H., Kalisher, A., Kithulgoda, C. I., Kulick, E., Mayur, M., & Putnam-Hornstein, E. (2019). [Implementing a Child Welfare Decision Aide in Douglas County: Methodology Report](#). Centre for Social Data Analytics. Auckland, New Zealand. December.

Walsh, M. C., Joyce, S., Maloney, T., & Vaithianathan, R. (2019). Exploring the Protective Factors of Children and Families Identified at Highest Risk of Adverse Childhood Experiences by a Predictive Risk Model: An Analysis of the Growing up in New Zealand Cohort. *Children and Youth Services Review*, 104556.

Willing, E., Paine, S. J., Wyeth, E., Te Ao, B., Vaithianathan, R., & Reid, P. (2019). [Indigenous voices on measuring and valuing health states](#). *AlterNative: An International Journal of Indigenous Peoples*, 1177180119885418.



Plain English reports on use of PRM: [Predictive Risk Modelling for Child Protection](#) (December 2019) and [Advanced Analytics for Child Welfare: Spotlight on Supervision Support](#) (June 2020) with Children's Data Network (USC) and Mathematica (US).

## Spreading the word on data analytics

*Our team is committed to increasing awareness and understanding of data analytics. Here are some recent links featuring our experts and their work:*

[NZ-developed AI can predict kids' hospital risk](#), NZ Herald, 5 August 2020.

[Child Maltreatment Prevention in the Era of Coronavirus Disease 2019 \(Editorial\)](#), JAMA Pediatrics, 3 August 2020.

[COVIDSafe Still Has Crucial iPhone Issues Nearly 2 Months Later](#), Gizmodo, 16 June 2020.

[Even 100% COVIDSafe Uptake Won't Make It Effective, Researcher Says](#), Gizmodo, 11 June 2020.

[COVIDSafe extremely limited': New research](#), Innovation Aus, 9 June 2020.

[Five ways New Zealand can keep Covid-19 cases at zero](#), The Guardian, 8 June 2020.

[Trust in COVID Tracer app needs to be built to see sufficient uptake - Anna Brown](#), Newshub, 7 June 2020

[Covid 19 coronavirus: The three extra steps NZ needs to take at alert level 1](#), NZ Herald, 2 June 2020.

[Coronavirus: Government app lacking crucial features – academic](#), Radio NZ, 21 May 2020.

[Covid 19 coronavirus: Govt tracing app only good for 'one unlikely scenario' – academic](#), NZ Herald, 20 May 2020.

[Covid 19 coronavirus: Rhema Vaithianathan: NZ is the Wild West of contact tracing](#), NZ Herald, 14 May 2020.

[Can Algorithms Be Fair, Transparent, and Protect Children?](#), On the Evidence – a Mathematica (US) Podcast, 25 March 2020.

[Hello Baby: Expanding Primary Prevention in Allegheny County – Marc Cherna](#), Children's Bureau Express, February 2020.

[The Trials of Gabriel Fernandez](#), Netflix, February 2020 (Rhema Vaithianathan and Emily Putnam-Hornstein discuss the use of predictive risk modelling for child protection in Episode 5).



## Events and outreach

*To help advance the understanding and effectiveness of social data analytics, our researchers continue to share and exchange knowledge with local and international colleagues and agencies:*

### **February**

Professor Jennie Noll (Director, Child Maltreatment Solutions Network, Pennsylvania State University) visited CSDA and delivered a seminar: "The impact of child maltreatment on development: implications for prevention and policy".

### **March**

Rhema Vaithianathan delivered *Data Science Training for Public Managers* workshops with Rayid Ghani (Carnegie Mellon University, US) and Maria Paz Hermosilla (UAI Adolfo Ibáñez University, Chile) in Brisbane and Canberra, Australia.

### **June**

With Mathematica (US), CSDA delivered a webinar [Using Data to Identify Changes in Child Welfare Referrals and Screening in the Era of Covid-19](#), targeted at those working in the US child protection sector.

Rhema took part in a panel discussion run by the Committee for Economic Development of Australia (CEDA): [Does disruptive technology require disruptive regulation?](#)

Rhema was invited to join and address an international roundtable on Covid-19 contact tracing apps hosted by the UK Centre for Data Ethics and Innovation.

### **July**

Rhema and Diana Benavides Prado hosted a social at the *International Conference on Machine Learning 2020*: "Can Deployment of ML in high-stakes human services help advance social justice and reduce racial disparities?".

### **August**

Rhema gave an invited talk for the Social Impact Session at the *KDD 2020 Virtual Conference* (conference of the Association for Computing Machinery's Special Interest Group on Knowledge Discovery and Data Mining).

Rhema spoke at a workshop hosted by MIT's Data to AI Lab: *Approaching Social Issues with Data and Machine Learning*.

Diana Benavides Prado gave a [talk](#) as part of *Women in Data Science Auckland 2020*, describing what is involved in a data science for social good project.

**September**

Rhema, Diana Benavides Prado and Gayani Tennakoon (UQ) participated in a webinar hosted by The University of Queensland: [Ethical Data Science for Social Impact](#)

Rhema presented an internal webinar for New Zealand's Oranga Tamariki (Ministry for Children): "How can predictive risk modelling data help us understand and respond to child maltreatment changes during Covid-19?"

Coming Up**October**

CSDA has partnered with the American Public Human Services Association (APHSA), Chapin Hall at the University of Chicago and Mathematica (US) to offer a virtual workshop series - [Leveraging Data for Impact in Human Services Systems](#) - for state and county health and human services agencies. The workshops, co-presented by Rhema Vaithianathan, will run across three dates in October and November.

**November**

Nina Anchugina will present CSDA research at the [Chief Data & Analytics Officers New Zealand Conference](#), 4 November 2020: "Covid-19 Contact Tracing Apps: What Works?"

*We have sent you CSDA eNews because you have previously shown interest in our work. If you would prefer not to receive this newsletter, please let us know.*

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