

'AMND in Focus' Episode 2: Intergenerational Data

Clip Name	Clip Timestamp	Speaker	Audio
E2 Clip 1	0:00 – 0:37	Ellen Anderson	<p>Welcome back to episode 2 of the AMND in focus, if you are new here and have missed our previous episodes, we recommend you start from the beginning in order to gain an understanding of the AMND, and to make the most out of the information from this podcast series.</p> <p>My name is Ellen and today me and Shauneen we will be focusing on one of the most unique areas of AMND, their intergenerational data collection and how this can be applied in research. We will hear from our guest speaker on their use of intergenerational data from the databank and why this is so important.</p>
E2 Clip 2	0:00 – 0:39	Shauneen Keirnan	<p>Our guest speaker for this episode is Dr Andrea Woolner, interviewed by Dr Heather May Morgan. Dr Woolner is a senior clinical lecturer at the University of Aberdeen Centre for Women's Health Research, as well as a consultant obstetrician at Aberdeen Maternity Hospital, working both in obstetrics and also as the early pregnancy lead.</p> <p>Dr Woolner has actually used the intergenerational data from AMND in her PhD research, exploring the data of mother-daughter pairs and how this may relate to the risk of stillbirth, as well as the risk of miscarriage.</p>
E2 Clip 3	0:00 – 0:22	Ellen	<p>So, we'll start off today's episode by talking about what is intergenerational data? And why is this so important in Aberdeen?</p> <p>As we've previously spoken about, The Aberdeen Maternity and Neonatal databank was founded in 1950 and holds data on nearly all pregnancy and fertility related events within Aberdeen.</p>

E2 Clip 4	0:00 – 0:34		<p>From the 1950s onwards, the AMND has collected data on over 260,000 pregnancies and deliveries to over 190,000 women. Within this data, researchers are actually able to match and group women across families and generations.</p> <p>This has resulted in the grouping of 40,322 mother-daughter pairs, 8,473 grandmother-mother-granddaughter trios, and 262 great grandmothers.</p>
E2 Clip 5	0:00 – 0:08	Shauneen	<p>Those are some incredible numbers! But why has this worked so well in Aberdeen? Let's hear from Dr Woolner:</p>
Andrea_Heather	1:20 – 2:23	Dr Andrea Woolner	<p>It is quite a unique resource given its length of time it's been collecting data, but also because of the nature of Aberdeen and this being a wonderful place to live (disclosure of interest I'm from Peterhead and have lived and studied in Aberdeen most of my life) but people tend not to move away from Aberdeen. So apparently, by using our data source we've been able to see that only 3.8% of women who have a pregnancy record in Aberdeen actually move away. That means this resource is really interesting from an intergenerational perspective because it means that most women who have babies here stay here, but also actually many mothers are still in Aberdeen and also many of their grandmothers are still in Aberdeen, and in future maybe some of their children will still be in Aberdeen</p> <p>It makes it quite a unique resource for us to do what we call intergenerational work, so looking at mothers and daughters health outcomes and comparing them, and also even across three-generations</p>
E2 Clip 6	0:00 – 0:18	Ellen	<p>It's amazing that Aberdeen is able to produce such unique data sets, that have a real impact on health care research! As we mentioned earlier, Dr Woolner actually used data from AMND in her own PhD research, so let's hear a bit about what she did:</p>
Andrea_Heather	3:37 – 6:43	Dr Woolner	<p>So my PhD was looking at two main research questions. The first of which was if your mother has the very sad and unfortunate outcome of a stillbirth, are you, as her daughter more at risk of having that in your own pregnancies? You can imagine that if</p>

			<p>you had a family history of such a tragic pregnancy outcome that you could be quite worried yourself in your own pregnancy about that. So my first research question addressed that, and what I was able to do was look at the pattern of stillbirths in mothers and then analyse whether the daughters of those mothers had an increased risk compared to daughters whose mothers had never had a stillbirth. And thankfully what I found in my research was that there did not appear to be a link between a mother's risk of stillbirth and the daughters. And so that was a reassuring finding, the only I guess caveat was that we had quite a small sample because stillbirth is relatively rare outcome. But it really opened the door, this being the first study that looked at this intergenerational risk of stillbirth, it really opened the door for more research to be done in larger populations elsewhere and that's something I hope to work on in the future.</p> <p>My second research project was looking at miscarriage, essentially the same idea, if you have a mother who has had a miscarriage or indeed recurrent miscarriages are you more at risk of having a miscarriage yourself as her daughter? Again, I compared to women whose mother had never had a miscarriage. And what I found this time however was that there did appear to be a small increased risk of miscarriage, now miscarriage has many different factors involved, it's not quite as simple as saying that if your mother had a miscarriage you're more at risk. But certainly it would appear that perhaps there may be something running in families that may put some women at slightly higher risk of miscarriage and recurrent miscarriage.</p> <p>There's a lot of other studies, laboratory and different types of work which have looked at genetics of risk of miscarriage and whether you could inherit an increased risk of miscarriage and again that work that I do using is the databank. And so whilst it's not looking genes or specific laboratory results for women, we are looking at patterns in the population. Again, this opens the door to more research and looking at genetics and looking at whether or not this pattern that we've seen in the data could actually be because of something that is running in families, whether that's as I've mentioned</p>
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			genetics or whether it's shared environments, you know factors that are in the environments of families that share, it is lifestyle factors, we don't know. But again this data is really important, my study is certainly partly opening us to other ideas on how we could understand what causes miscarriage and recurrent miscarriage
E2 Clip 7	0:00 – 0:41	Shauneen	<p>Wow, I find it so fascinating that we're able to use data collected in Aberdeen from 1950 to gain an understanding on pregnancy risks and outcomes now and in the future.</p> <p>Especially considering that traditionally knowledge on pregnancy and births has been passed down through families. So, if someone knows that their mother had an unfortunate outcome or a complication, they'd be worried that this would happen to them too. The work from AMND really helps not only medical professionals and researchers gain an understanding on pregnancy outcomes, but they're able to pass this on to their patients and the public which could help reduce anxieties and fears!</p>
E2 Clip 8	0:00 – 0:13	Ellen	<p>I completely agree, it's incredible to see how this data and information can actually impact people in the present.</p> <p>But what about the future uses of intergenerational data?</p>
Andrea_Heather	9:00 – 10:32	Dr Woolner	<p>Going forward we still have ongoing intergenerational projects. So I'm working on now a project looking at mother's labour outcomes, so length of labour, type of delivery, also things like the type of tears that they had at vaginal birth, and whether or not those risks, again if there's any pattern in their daughters. So if your mother had an emergency caesarian section are you more likely to have an emergency caesarian section? If your mother had really long labours, or didn't go into labour and was induced, are you more likely to be induced?</p> <p>And it sounds sort of funny, why would we want to know that doctors? But again, it's about that knowledge about understanding why these outcomes happen and why perhaps adverse outcomes happen in labour and what we might be able to do to counteract that and help, but also I think it's about understanding. I think it's about women having that information so for example we often hear anecdotally 'oh my</p>

			<p>mother had c-sections for all of her babies, so I'm going to have to have cesarian sections', so again, you know who knows we'll find out soon from my project what the answer will be, but it might be that that's not actually the case that you're at no higher risk of caesarean section just because your mother had one, or indeed it might confirm that suspicion.</p> <p>So all of these things actually have huge, huge implications for women even from a knowledge point of view, just knowing these risks or these predictive factors are there.</p>
E2 Clip 9	0:00 – 0:21	Shauneen	<p>The research possibilities and learning opportunities from AMND's intergenerational data are amazing, and we hope that his helps people realise the importance of AMND.</p> <p>We'll now actually hear from Dr Woolner explaining how such research works, and how researchers request access to data from AMND</p>
Andrea_Heather	11:21 – 12:09 12:21 – 12:33	Dr Woolner	<p>Absolutely there's a process. So there's a process whereby we have to apply to use the AMND data and that's all governed by a steering committee and approval is granted for a project.</p> <p>So that could take periods of months, and then there's a period of time where you have to request what data you require so as I've mentioned a lot of my work more recently has involved these intergenerational projects so it's really important that the databank matches mothers and daughters to give me the type of data I'm looking for. That takes a period of months usually, and once you have the data, myself and also those on the team on this research project will then have access and start to analyse.</p> <p>And it all has to be agreed beforehand what we're going to do with the data, it's all heavily restricted in terms of what you know we're going to do, what questions we're asking, what statistical analysis we're going to do.</p>
E2 Clip 10	0:00 – 0:23	Ellen	<p>It's reassuring to hear the processes that researchers have to go through to access data, and how the steering committee of AMND protect this data as well.</p>

			Dr Woolner also highlights a very important note that while researchers are able to use AMND to suggest a relationship between risks and complications, it doesn't actually give us a final answer
Andrea_Heather	14:02 – 14:30	Dr Woolner	<p>Whilst many of the work that we do including the intergenerational work is not confirmatory, so it doesn't prove something, it doesn't prove that smoking causes this, that or the other, it doesn't prove that if your mother has something you will have something, absolutely not.</p> <p>What it does is gives us an idea that that might be part of the pathology of a condition and that's really why this type of work is key to our understanding of pregnancy outcomes.</p>
E2 Clip 11	0:00 – 0:35	Shauneen	<p>We hope that you have found this episode and it's focus on intergenerational data as interesting as we have!</p> <p>It's incredible to learn that due to the unique population trends of Aberdeen that AMND has been able to group data across families spanning generations, which has provided an invaluable insight into how genetic factors can influence pregnancy outcomes.</p> <p>The work that Dr Woolner has told us about is fascinating, and we can't wait to hear about how this will update and influence understandings of pregnancy and fertility worldwide!</p>
E2 Clip 12	0:00 – 0:13	Ellen	Thank you for joining us for the second episode of AMND in focus, we would like to also thank Dr Andrea Woolner and Dr Heather May Morgan for providing the interview content.
E2 Clip 13	0:01 – 0:17		Join us in our next episode where Grace and Shauneen (current medical students at the University of Aberdeen) will tell us about how the work and research that AMND does influences the day to day clinical practices within the Aberdeen Maternity Hospital.