

## Supplementary material

Supplementary Table S1. Drugs used to find AHR cases in PIN dataset

<b>Drug Name</b>	<b>DIN</b>	<b>ATC</b>
Clomid/ Clomifene	02091879	G03GB02
	00018031	
Repronex/ Menopur	02247790	G03GA02
	02283093	
Ovidrel/ choriogonadotropin alpha	02262088	G03GA08
	02371588	
Bravelle/ Urofollitropin	02268140	G03GA04
Gonal-F/ follitropin alfa	02231464	G03GA05
	02231465	
	02243004	
	02244787	
	02248154	
Puregon/ Follitropin beta	02242439	G03GA06
	02242441	
	02243948	
	02243949	
	02231656	
	02231655	
Oreglutran/ Ganirelix	02245641	H01CC01
Cetrotide/ Cetrorelix	02247766	H01CC02
	02247767	
Crinone/ Progesterone	02241013	G03DA04
Endometrin/ Progesterone	02334992	G03DA04
Femara/ Letrozole	02231384	L02BG04

Supplementary Table S2. ICD-9 and ICD-10 codes used to identify AHR cases in ambulatory care, inpatient hospital separations, and practitioner claims databases.

ICD 10	ICD 9
<b>Z31.1:</b> Intrauterine insemination	<b>V26.1:</b> Intrauterine insemination
<b>Z31.2:</b> In vitro fertilization	<b>V23.85:</b> Pregnancy resulting from assisted reproductive technology
<b>Z31.3:</b> Other assisted fertilization methods	

Supplementary table S3. Obstetric and neonatal outcomes according to type of AHR treatment received

Characteristics	AHR treatment				P [GEE Wald Test] for AHR treatment type
	Medical	Procedural	Other	≥2 kinds	
Sample size, n	23,798	2,408	64	1,268	--
Spontaneous vaginal births, n (%)	5642 (23.7)	564 (23.4)	15 (23.4)	269 (21.2)	0.270
Induced labor, n (%)	4241 (17.8)	415 (17.2)	5 (7.8)	194 (15.3)	<0.001
C-section, n (%)	9,649 (40.5)	962 (40)	32 (50%)	569 (44.9)	0.140
Missing	4266 (17.9)	467 (19.4)	12 (18.8%)	236 (18.6)	0.071
Pre-term delivery (<37 weeks), n (%)	7,377 (31)	754 (31.3)	25 (39.1%)	510 (40.2)	0.006
Prolonged pregnancy (≥42 weeks), n (%)	22 (0.1)	4 (0.2)	0 (0)	1 (0.1)	--
Birth weight, g (SD)	3,017 (760)	3,056 (781)	2,837 (1,038)	2,916 (807.1)	0.120
Median [IQR]	3,130 [2,630-3,515]	3,140 [2,670-3,560]	2,890 [2,308-3,584]	3,010 [2,472-3,450]	
Birth weight <2.5 kg, n (%)	6,391 (26.9)	638 (26.5)	29 (45.3)	443 (34.9)	0.001
Birth weight 2.5-4.0 kg, n (%)	16,113 (67.7)	1,624 (67.4)	30 (46.9)	763 (60.2)	0.008
Birth weight >4.0 kg, n (%)	1,223 (5.1)	140 (5.8)	5 (7.8)	56 (4.4)	--
Missing	71 (0.3)	6 (0.2)	0 (0)	6 (0.5)	
<i>Neonatal ICU stay</i>					
Yes, n (%)	6,107 (25.7)	534 (22.2)	10 (15.6)	338 (26.7)	0.013
No	17691 (74.3)	1874 (77.8)	54 (84.4)	930 (73.3)	
Congenital malformations	132 (0.6)	2 (0.1)	0 (0)	2 (0.2)	0.005
No	17538 (73.7)	1872 (77.7)	57 (89.1)	950 (74.9)	

The category ‘Medical’ include anyone giving birth following a prescription dispensed for ovulation induction, IVF, ICSI, or controlled ovarian hyperstimulation or procedure codes for IVF and/or ICSI (see Table S1 for codes); ‘Procedural’ include anyone with a procedure code for intrauterine insemination (ICD-9: V26.1 and/or ICD-10 Z31.1); ‘Other’ include anyone with the ICD-9 code Z31.3 (other assisted fertilization methods) and/or ICD-10 code V23.85 (pregnancy resulting from assisted reproductive technologies); ‘≥2 kinds’ include anyone with a combination of any two categories.

Supplementary table S4. Maternal characteristics according to the type of AHR treatment received

Characteristics	AHR treatment				P [GEE Wald Test] for AHR treatment type
	Medical	Procedural	Other	≥2 kinds	
Pregnancy, N	19,919	1,942	48	933	–
Children, N	23,798	2,408	64	1,268	–
Primiparous N (%)	10560 (53.0%)	1400 (72.1%)	33 (68.8%)	677 (72.6%)	<0.001
Singletons N (%)	16240 (81.5)	1518 (78.2)	32 (66.7)	625 (67.0)	0.004
Multiple Birth N (%)	3679 (18.5)	424 (21.8)	16 (33.3)	308 (33.0)	
Multiple Birth N (%), categories					<0.001
Twins	3497 (95.1)	383 (90.3)	16 (100%)	282 (91.6)	
Triplets	164 (4.5)	41 (9.7)	0 (0%)	26 (8.4)	
Quadruplets	18 (0.5)	0 (0%)	0 (0%)	0 (0%)	
Age at delivery, mean (SD), years	33.9 (5.0)	33.8 (4.0)	31.8 (4.8)	34.1 (3.9)	0.023
Rural Residence at delivery N (%)	2975 (14.9)	228 (11.7)	12 (25.0%)	86 (9.2)	<0.001
Gestational diabetes N (%)	2026 (10.2)	232 (12.0)	6 (12.5)	122 (13.1)	0.094
Hypertensive disorders of pregnancy N (%)	2337 (11.7)	243 (12.5)	6 (12.5)	114 (12.2)	0.700

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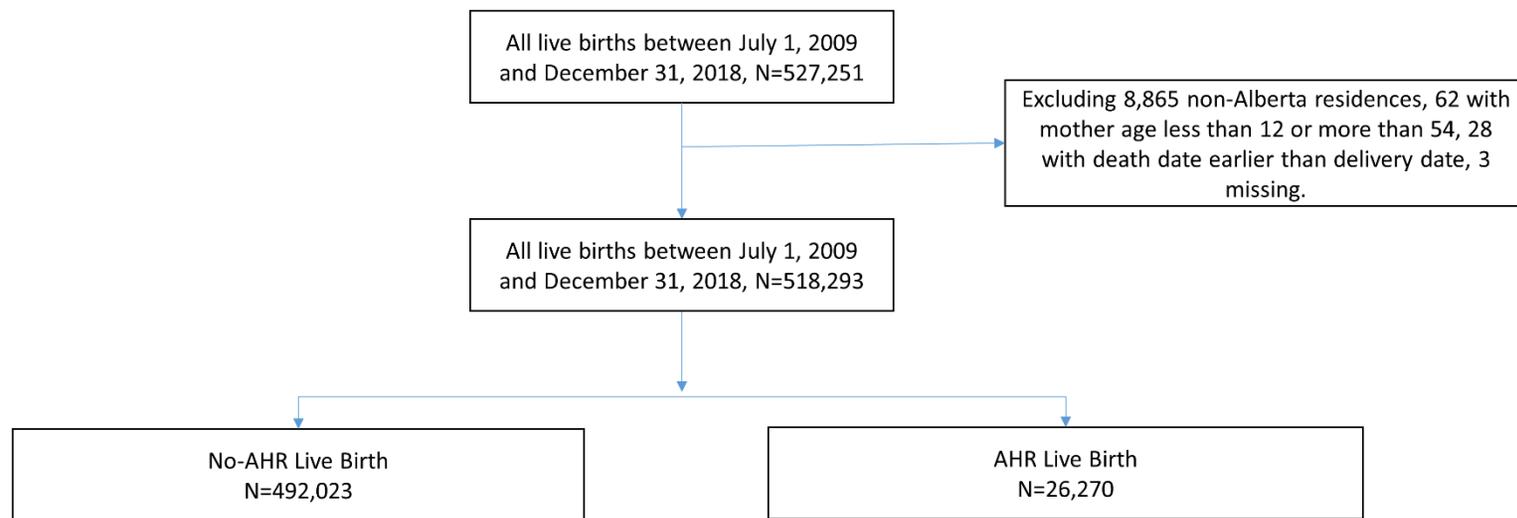
Supplementary Table S5. Birth Weight categories by AHR and ethnicity

	Non-AHR				AHR			
	Gen pop n=409,870	SA n=12,730	Chinese n=14,867	Missing n=54,556	Gen pop	SA	Chinese	Missing
<2500g, N (%)	30496 (7.4)	1425 (11.2)	1122 (7.5)	4136 (7.6)	5762 (26.9)	238 (27.5)	279 (27.2)	779 (26.3)
2500-4000g, N (%)	336631 (82.1)	10740 (84.4)	13021 (87.6)	44941 (82.4)	14428 (67.4)	600 (69.2)	719 (70.0)	2020 (68.2)
>4000g, N (%)	37770 (9.2)	461 (3.6)	630 (4.2)	4846 (8.9)	1174 (5.5)	21 (2.4)	27 (2.6)	146 (4.9)
Missing, N (%)	4973 (1.2)	104 (0.8)	94 (0.6)	633 (1.2)	49 (0.2)	8 (0.9)	2 (0.2)	18 (0.6)

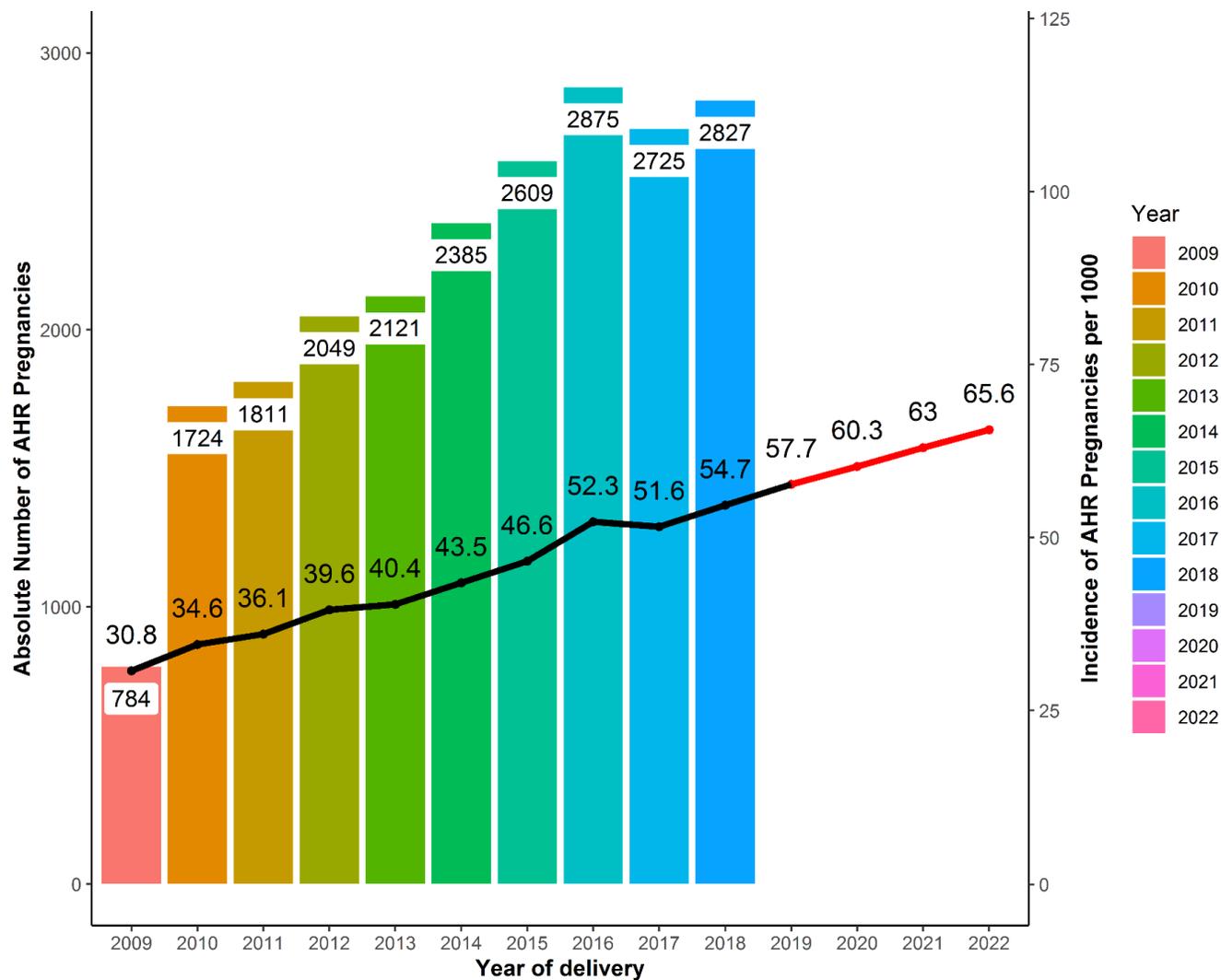
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Supplementary table S6. Extreme low birthweight and extreme premature birth by AHR category.

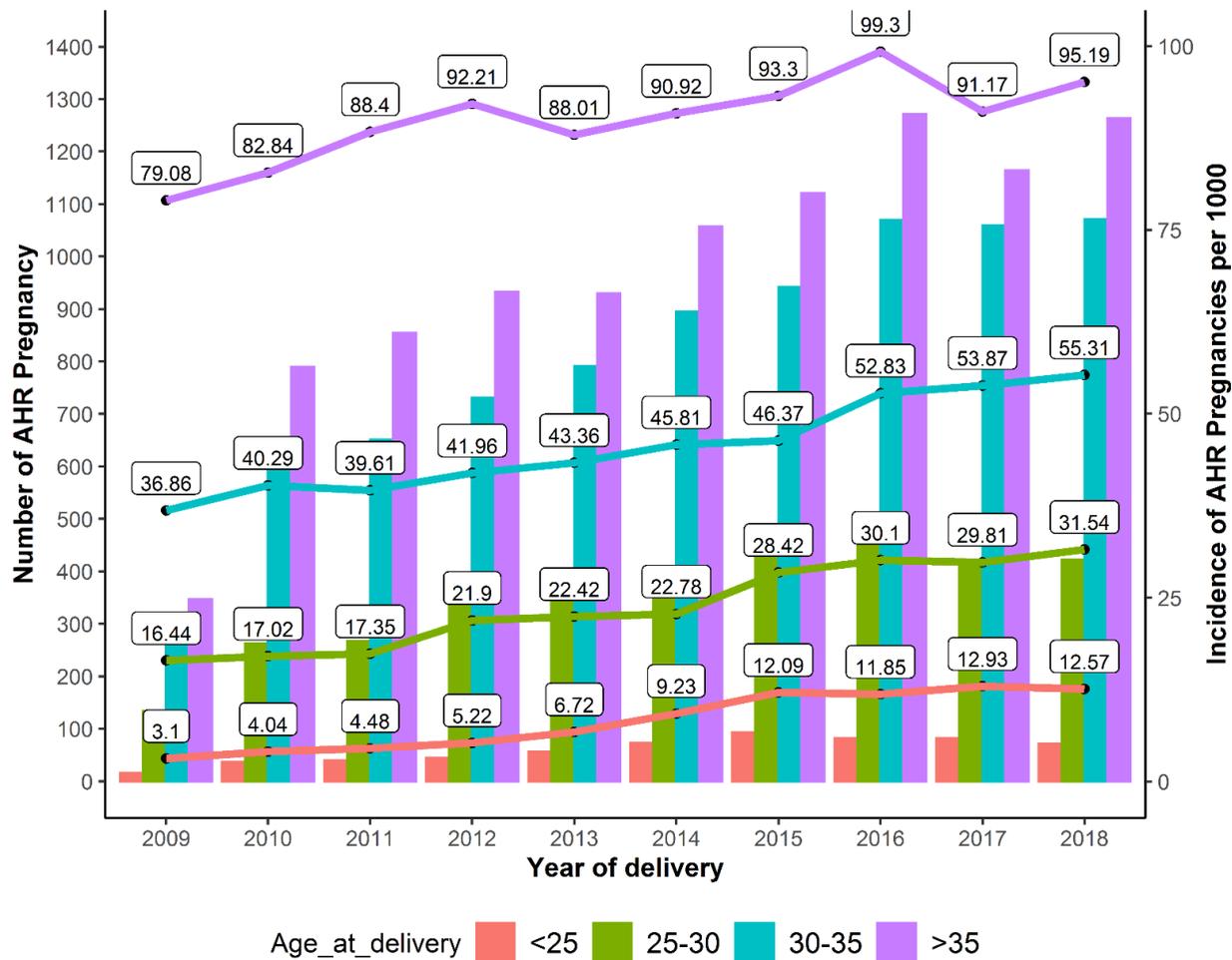
	No-AHR	AHR
Extreme low birthweight	492,023	26,270
Yes	803 (0.2%)	219 (0.8%)
No	485416 (98.7%)	25974 (98.9%)
Missing	5804 (1.2%)	77 (0.3%)
Extremely premature births		
Yes	142 (0.03%)	40 (0.2%)
No	485983 (98.8%)	26153 (99.6%)
Missing	5898 (1.2%)	77 (0.3%)



**Supplementary Figure S1.** Flow diagram of cohort selection.



Supplementary figure S2. Absolute number of pregnancies resulting in delivery of live infants following AHR treatment and incidence of AHR pregnancies leading to live births per 1000 pregnancies in Alberta July 1, 2009 – December 31, 2018, with extrapolated trends for years 2019-2022.



Supplementary figure S3. Absolute number of pregnancies resulting in delivery of live infants following AHR treatment and incidence of AHR pregnancies leading to live births per 1000 pregnancies in Alberta July 1, 2009 – December 31, 2018 per maternal age group.