Findings

Preconception: Risk Factors for GDM

The demographic characteristics of women of reproductive age (aged 18-44 years) in Ohio influence the risk for GDM in the population. Among Ohio women of reproductive age during 2014-16, 76.3 percent were white, 13.8 percent were black, and 4.8 percent were Hispanic (Table 1a). About half of women were ever married, almost two thirds (62.6%) had a college education, and half (42.8%) resided in a metropolitan county. More than half of women were covered by insurance from an employer (55.3%). The most significant difference is the change in insurance rates, which increased 75% between timeframes. Another significant difference under Income-Level, where the lowest level decreased 4.5% and the highest level increased 6.6%.

Table 1a. Prevalence of demographic preconception risk factors among women aged 18-44 years, Ohio 2011-13 and 2014-16

		2011-13		2014-16	
		%	95% CI	%	95% CI
Overall		(n=5118)		(n=4176)	
Age (years)	18-24	27.6	25.8-29.4	28.0	25.9-34.7
	25-34	36.1	34.3-37.8	36.7	34.7-38.7
	35-44	36.3	34.7-37.9	35.4	33.5-37.3
Race/Ethnicity	Non-Hispanic White	76.9	74.0-79.9	76.3	74.3-78.2
	Non-Hispanic Black	14.4	11.9-16.9	13.8	12.1-15.4
	Hispanic	4.2	2.6-5.8	4.8	3.8-5.8
	Multi-racial	0.9	0.4-1.4	2.0	1.4-2.5
	Other	3.5	2.2-4.9	3.2	2.3-4.0
Marital Status[a]	Ever Married	52.8	51.0-54.6	52.4	50.2-54.5
	Never Married	47.2	45.4-49.0	47.6	45.5-49.8
Education	Less than High School	12.2	10.6-13.7	10.2	8.5-11.9
	High School Graduate	26.6	25.0-28.3	27.1	25.2-29.0
	Some College	35.9	34.1-37.7	35.1	33.1-37.2
	College Graduate	25.3	24.0-26.7	27.5	25.9-29.2
Insurance	Plan	16.2	14.8-17.6	91.2	89.9-92.5
	No Plan	83.8	82.4-85.2	8.8	7.5-10.1
Income-Level	Less than $15,000	16.9	15.3-18.4	12.4	10.8-14.0
	$15,000-$24,999	20.2	18.6-21.7	19.5	17.6-21.3
	$25,000- $34,999	11.5	10.2-12.8	10.2	8.8-11.6
	$35,000 -$49,000	13.3	12.0-14.6	13.2	11.7-14.8
	$50,000 or More	38.2	36.4-40.0	44.8	42.6-47.0
County Type[b]	Suburban	29.0	27.4-30.7	31.6	29.4-33.7
	Rural	9.7	8.7-10.8	8.9	7.8-10.0
	Metropolitan	44.4	42.8-46.1	42.8	40.6-45.1
	Appalachian	16.8	15.6-18.1	16.7	15.4-18.0

(Table 1a con't.)

Source: Ohio Behavioral Risk Factor Surveillance System (BRFSS), Ohio Department of Health, 2018
Note: This table has been updated. The previously published table did not restrict the female population to women of reproductive age (WRA), as the title references.
95 percent confidence interval (CI): if the survey was repeated 100 times and 100 different confidence intervals were calculated, 95 percent of the intervals would contain the true estimate. The more narrow a CI, the more precise the estimate.
[a] Ever Married=Married, Divorced, Widowed, Separated; Never Married=Never Married, Member of Unmarried Couple
[b] Rural and suburban excludes counties otherwise designated as Appalachian by the Appalachian Regional Commission

Table 1b displays preconception health status and presence of risk behaviors among women of reproductive age in Ohio. In 2014-16, the percent of Ohio women of childbearing age that reported ever smoking decreased to 37.5 percent. Furthermore, more than half of these women were overweight or obese and almost one third did not attend a routine medical check-up in the past 12 months.

Table 1b. Prevalence of preconception health status and risk behaviors among women aged 18-44 years, Ohio 2011-13 and 2014-16

		2011-13		2014-16	
		%	95% CI	%	95% CI
Overall		**(n=5118)**		**(n=4176)**	
BMI (kg/m²)	Underweight (< 18.5)	3.1	2.4-3.8	2.7	1.9-3.5
	Normal weight (18.5 - 24.99)	44.9	43.0-46.8	41.9	39.7-44.1
	Overweight (25.00-29.99)	25.5	23.8-27.1	28.0	26.0-30.1
	Obese (30.0+)	26.6	24.9-28.2	27.3	25.4-29.3
Smoker	Ever Smoker	43.6	41.8-45.5	37.5	35.4-39.6
	Never Smoker	56.4	54.5-58.2	62.5	60.4-64.6
History of Diabetes (not Gestational)	Yes	3.1	2.5-3.7	3.1	2.5-3.8
	No	96.9	96.3-97.5	96.9	96.2-97.5
History of Hypertension[a]	Yes	10.6	9.2-12.0	10.2	7.9-12.4
	No	89.4	88.0-90.8	89.8	87.6-92.1
Time since Last Routine Checkup-Up	Within the Past Year	65.4	63.7-67.2	68.1	66.1-70.1
	More than a Year	34.6	32.8-36.3	31.9	29.9-33.9
Exercise in the Past 30 Days[b]	Yes	77.7	76.2-79.3	79.9	78.2-81.7
	No	22.3	20.7-23.8	20.1	18.3-21.8

Source: Ohio Behavioral Risk Factor Surveillance System (BRFSS), Ohio Department of Health, 2018
Note: This table has been updated. The previously published table did not restrict the female population to WRA, as the title references.
[a] Question not asked in 2012 and 2016. Estimates derived from 2011, 2013, 2014, and 2015 data only
[b] Any physical activity or exercise outside of respondent's regular job

Table 2a displays the demographics of women who had a live birth in Ohio during 2006-08, during 2009-11, and during 2016. More than half of the women who delivered a child in 2016 were between the ages of 25-34 years. Almost three-quarters of the women were white and 17 percent black. Almost one third had high school education or less and three percent were uninsured.

Table 2a. Prevalence of preconception risk factors among women with a live birth, by demographics, Ohio 2006-08, 2009-10, and 2016

		2006-08		2009-10		2016	
Overall (n)		(4358)		(2639)		(3386)	
		%	95% CI	%	95% CI	%	95% CI
Age (years)	18-24	34.3	32.4-36.3	32.7	30.3-35.2	27.0	24.2 - 29.9
	25-34	53.3	51.3-55.3	54.6	52.0-57.1	58.1	55.2 - 61.0
	35-44	12.4	11.2-13.7	12.7	11.2-14.5	13.4	11.7 - 15.0
Race/Ethnicity	Non-Hispanic White	76.9	75.7-78.1	76.8	75.3-78.3	72.2	69.8 - 74.7
	Non-Hispanic Black	14.7	14.4-15.1	15.3	14.9-15.8	17.7	15.4 - 19.9
	Hispanic	3.3	2.6-4.2	3.4	2.5-4.6	5.5	4.2 - 6.8
	Other[a]	5.0	4.2-6.1	4.5	3.5-5.7	4.6	3.7 - 5.6
Education	Less than HS	14.7	13.2-16.4	13.9	12.1-15.9	9.9	8.1 - 11.6
	HS Graduate	28.0	26.2-29.8	25.2	23.0-27.6	22.4	19.8 - 25.0
	Some College	21.1	19.6-22.7	22.3	20.3-24.4	22.0	19.5 - 24.6
	College Graduate	36.2	34.4-38.1	38.7	36.3-41.2	45.7	42.9 - 48.5
Pre-Pregnancy Health Insurance[b,c]	Uninsured	36.3	34.4-38.3	17.3	15.3-19.4	3.6	2.6 - 4.6
	Medicaid	15.2	13.9-16.7	23.6	21.6-25.8	38.8	35.9 - 41.8
	From Job	--	--	55.3	52.8-57.9	44.0	41.3 - 46.8
	Self Pay (not from job)	--	--	3.8	2.9-5.0	8.1	6.2 - 10.0
	TRICARE or Other Military	--	--	1.4	0.9-2.1	1.4	0.8 - 2.0
	Other	--	--	3.4	2.5-4.5	4.1	2.8 - 5.4
Annual Household Income[e]	Less than $15,000	28.9	27.1-30.8	31.6	29.2-34.1	21.2	18.7 - 23.7
	$15,000-$24,999	13.0	11.6-14.5	13.4	11.7-15.4	12.5	10.4 - 14.5
	$25,000-$34,999	11.4	10.1-12.8	8.4	7.0-9.9	8.8	7.0 - 10.6
	$35,000-$49,999	10.9	9.6-12.2	11.0	9.5-12.8	10.2	8.4 - 12.1
	$50,000 or More	35.9	34.0-37.9	35.6	33.2-38.1	47.3	44.5 - 50.1
County Type[d]	Metropolitan	52.4	50.4-54.3	55.0	52.5-57.5	58.9	56.7 - 61.0
	Suburban	16.4	15.0-18.0	16.0	14.2-18.1	15.2	12.9 - 17.5
	Appalachian	16.4	14.9-18.0	14.8	13.0-16.8	13.0	10.9 - 15.1
	Rural	14.9	13.4-16.4	14.2	12.4-16.1	12.9	10.8 - 15.0

Sources: 2006-2010 Analyses using Pregnancy Risk Assessment Monitoring System (Ohio Department of Health). 2016 Analyses using Ohio Pregnancy Assessment Survey.

Footnotes: [a] Includes those who reported multiple races

[b] Significant change in structure of survey questions about pre-pregnancy health insurance in 2009-10. Comparison with 2006-08 may not be valid

[c] In 2009-10, mothers could select all insurance options that applied, therefore total will not add up to 100 percent

[d] Rural and suburban excludes counties otherwise designated as Appalachian by the Appalachian Regional Commission

[e] Household income categories changed substantially in Ohio Pregnancy Assessment Survey, making it not possible to do a direct comparison to previous years' data. New categories include $0-16,000, $16,001-$24,000, $24,001-$32,000, $32,001-$48,000, and >$48,000.

Table 2b displays behavioral and health status risks during the preconception period among women who had a live birth in Ohio during 2006-08, 2009-11, and 2016. One third of women (33.7 percent) were obese before pregnancy in 2016, representing an increase over previous periods. Less than one in ten Ohio women (6.2 percent) were diagnosed or treated for hypertension before becoming pregnant. Behaviors also put women at risk of gestational diabetes. Less than one quarter of women having a live birth in 2016 reported having a visit with a health care provider in the year before becoming pregnant (19.3 percent). Further, significantly fewer women (17.2 percent) indicated that they smoked in the past 2 years in 2016 compared to 2009-10 (37.3 percent).

Table 2b. Prevalence of preconception health status and behavioral risk factors among women with a live birth, Ohio 2006-08, 2009-10, and 2016

	2006-08		2009-10		2016	
Overall (n)	(4358)		(2639)		(3386)	
	%	95% CI	%	95% CI	%	95% CI
History of Diabetes (not Gestational)[c]						
Yes	2.6	2.0-3.3	1.9	1.3-2.7	3.9	2.6 - 5.2
Checked/Treated for Hypertension Before Pregnancy[c]						
Yes	--	--	9.3	7.9-10.8	6.2	4.8 - 7.5
Pre-Pregnancy BMI (kg/m²)						
Underweight (< 18.5)	6.9	6.0-8.0	7.6	6.3-9.1	11.9	10.0 - 13.8
Normal weight (18.5 - 24.9)	48.0	46.0-50.0	44.4	41.9-47.0	41.4	38.6 - 44.1
Overweight (25.0-29.9)	23.8	22.2-25.6	23.7	21.5-26.0	13.0	11.1 - 14.9
Obese (30.0+)	21.2	19.7-22.9	24.3	22.2-26.6	33.7	31.0 - 36.5
Smoker						
Smoked in the Past 2 Years	32.5	30.6-34.5	37.3	34.8-39.9	17.2	14.8 - 19.6
Preconception Visit[a]						
Yes	27.4	25.7-29.2	29.8	27.5-32.1	19.3	17.2 - 21.4
No	72.6	70.9-74.4	70.2	67.9-72.5	80.7	78.6 - 82.8
Pre-Pregnancy Exercise 3+ times per week[b]						
Yes	--	--	41.8	39.2-44.3	--	--
No	--	--	58.3	55.7-60.8	--	--

Sources: 2006-2010 Analyses using Pregnancy Risk Assessment Monitoring System (Ohio Department of Health). 2016 Analyses using Ohio Pregnancy Assessment Survey.
Footnotes:

[a] In 2006-10, based on answers to the question: "*Before* you got pregnant with your new baby, did a doctor, nurse, or other health care worker talk with you about how to prepare for a healthy pregnancy and baby?" In 2016, based on answer f to Q12: *"During any of your health care visits in the 12 months before you got pregnant did a doctor, nurse or other health care worker do any of the following things?"* (Answer f: Talk to me about how I could improve my health before a pregnancy)
Only respondents who indicated they had had any type of health care visit in the 12 months prior to pregnancy answered this question.

[b] In 2006-10, based on answers to the question: "During the 3 months before you got pregnant with your new baby, how often did you participate in any physical activities or exercise for 30 minutes or more?" In 2016, the question was not assessed.

[c] Based on answers a or b to the question: *"During the 3 months before you got pregnant with your new baby, did you have any of the following health conditions?"* (Answer a: Type 1 or Type 2 diabetes (not gestational diabetes); Answer b: b. High blood pressure or hypertension)