**Supplemental Table 1. Evaluation Summaries of Tier 1 Preconception Health Indicators**

**Heavy Alcohol Consumption**

Demographic Group: Women aged 18-44 years having a recent live birth

Data Source: Pregnancy Risk Assessment Monitoring System (PRAMS) <http://www.cdc.gov/prams/>

Numerator: Respondents aged 18-44 years who reported that they had 8 or more alcoholic drinks in an average week during the 3 months before they got pregnant with their most recent live born infant

Denominator: Respondents aged 18-44 years who reported the number of alcoholic drinks they had in an average week, including none, during the 3 months before they got pregnant with their most recent live born infant as well as those who reported that they did not have any alcoholic drinks in the past 2 years

Prevalence: 54.1% reported any pre-pregnancy drinking and 23.4% reported any pre-pregnancy binge drinking (PRAMS, 2011), <http://www.cdc.gov/prams/pramstat/index.html>

Addressed in Professional

Recommendations: *Alcohol Misuse: Screening and Behavioral Counseling Interventions in Primary Care (USPSTF).* The USPSTF recommends that clinicians screen adults aged 18 years or older for alcohol misuse and provide persons engaged in risky or hazardous drinking with brief behavioral counseling interventions to reduce alcohol misuse

<http://www.uspreventiveservicestaskforce.org/Page/Document/UpdateSummaryFinal/alcohol-misuse-screening-and-behavioral-counseling-interventions-in-primary-care?ds=1&s=alcohol>

*Preventing Excessive Alcohol Consumption: Electronic Screening and Brief Interventions (e-SBI). (Community Guide Recommendation).* The Community Preventive Services Task Force (Task Force) recommends electronic screening and brief intervention (e-SBI) based on strong evidence of effectiveness in reducing self-reported excessive alcohol consumption and alcohol-related problems among intervention participants. <http://www.thecommunityguide.org/alcohol/eSBI.html>

*At-risk drinking and alcohol dependence: obstetric and gynecologic implications. Committee Opinion No. 496. American College of Obstetricians and Gynecologists. Obstet Gynecol 2011;118:383-8.* For pregnant women and those at risk of pregnancy, it is important for the obstetrician-gynecologist to give compelling and clear evidence to avoid alcohol use, provide assistance for achieving abstinence, or provide effective contraception to women who require help. <https://www.ncbi.nlm.nih.gov/pubmed/21775870>

Association Academy of Family Practitioners (*AAFP) Summary of Recommendations for Clinical Preventive Services.* The AAFP recommends that clinicians screen adults aged 18 years or older for alcohol misuse and provide persons engaged in risky or hazardous drinking with brief behavioral counseling interventions to reduce alcohol misuse. <http://www.aafp.org/afp/2014/0615/od1.html>

Addressed in HP

2020 Objective(s)

And/or

CDC Winnable Battle: HP2020 MICH-11.1 Increase abstinence from alcohol among pregnant women

* + - * Target: 98.3%

HP2020 SA-16 Reduce average annual alcohol consumption

* + - * Target: 2.1 gallons per person

HP2020 SA-15 Reduce the proportion of adults who drank excessively in the previous 30 days

* + - * 25.4%

CDC Winnable Battle: None

Simplicity: Data are not currently available via PRAMStat. As a core indicator, it will become available with no additional calculations needed.

Data Completeness: Not reported

Other comments: The indicator does not convey the specific amount of alcohol consumed

Maternal and Infant Health Assessment (MIHA) collects comparable information, but not reported in online Snapshot reports:

<http://www.cdph.ca.gov/data/surveys/MIHA/Pages/MaternalandInfantHealthAssessment(MIHA)survey.aspx>

**Depression**

Demographic Group: Women aged 18-44 years

Data Source: Behavioral Risk Factors Surveillance System (BRFSS)

<http://www.cdc.gov/BRFSS/>

Numerator: Female respondents aged 18-44 years who reported they were ever told by a health care professional that they have a depressive disorder

Denominator: Female respondents aged 18-44 years

Prevalence: 21.3% (BRFSS, 2015), <https://nccd.cdc.gov/s_broker/WEATSQL.exe/weat/index.hsql>

Addressed in Professional

Recommendations: The USPSTF (2016), [recommends screening for depression](https://www.uspreventiveservicestaskforce.org/Page/Document/UpdateSummaryFinal/depression-in-adults-screening1?ds=1&s=depression%20screening) in the general adult population, including pregnant and postpartum women. Screening should be implemented with adequate systems in place to ensure accurate diagnosis, effective treatment, and appropriate follow-up.

The Community Preventive Services Task Force (2010) [recommends collaborative care for the management of depressive disorders](https://www.thecommunityguide.org/findings/mental-health-and-mental-illness-collaborative-care-management-depressive-disorders) based on strong evidence of effectiveness in improving depression symptoms, adherence to treatment, response to treatment, and remission and recovery from depression.

Addressed in HP

2020 Objective(s)

And/or

CDC Winnable Battle: HP2020 MHMD-4: Reduce the proportion of persons who experience major depressive episodes

* Target: To be determined

CDC Winnable Battle: None

Simplicity: Estimates are readily available **with additional calculations** through the (Web Enabled Analysis Tool (WEAT) public use query system

Data Completeness: Less than 10% missing

Other: MIHA question about postpartum depressive symptoms is included in HP 2020 list (but not about depressive symptoms among women of reproductive age in general)

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**Diabetes**

Demographic Group: Women aged 18-44 years

Data Source: Behavioral Risk Factors Surveillance System (BRFSS)

<http://www.cdc.gov/BRFSS/>

Numerator: Female respondents aged 18-44 years who reported ever being told by a health care provider that they have diabetes. Women who reported gestational diabetes mellitus (GDM), pre-diabetes, or borderline diabetes would not be included in the numerator

Denominator: Female respondents aged 18-44 years

Prevalence: 3.0% (2015, BRFSS), <https://nccd.cdc.gov/s_broker/WEATSQL.exe/weat/index.hsql>

Addressed in Professional Subpopulations of women 18-44 years:

Recommendations: The USPSTF recommends screening for abnormal blood glucose as part of cardiovascular risk assessment in adults aged 40 to 70 years who are overweight or obese (2016)

American Congress of Obstetricians and Gynecologists (ACOG) Practice Bulletin #137 (2013) Gestational Diabetes Mellitus. Bulletin recommends that women with previous gestational diabetes be screened during the postpartum period and beyond to identify diabetes mellitus.

The American Diabetes Association (ADA) recommends screening in asymptomatic people in adults of any age who are overweight or obese (BMI ≥25 kg/m2 or ≥23 kg/m2 in Asian Americans) and who have one or more additional risk factors for diabetes. If tests are normal, repeat testing carried out at a minimum of 3-year intervals.

The ADA recommends that women with GDM should be screened at 6-12 weeks postpartum for persistent diabetes, using the oral glucose tolerance test (OGTT) and clinically appropriate non-pregnancy diagnostic criteria.

Addressed in HP

2020 Objective(s)

And/or

CDC Winnable Battle: HP2020 D-15 Increase the proportion of persons with diabetes whose condition has been diagnosed.

* Target: 79.8%

CDC Winnable Battle: None

Simplicity: Estimates are readily available **with additional calculations** through the WEAT public use query system

Data Completeness: Less than 10% missing

Other comments: MIHA also collects this information.

**Folic Acid Intake**

Demographic Group: Women aged 18-44 having a recent live birth

Data Source: Pregnancy Risk Assessment Monitoring System (PRAMS)

<http://www.cdc.gov/PRAMS/>

Numerator: Respondents aged 18-44 years who reported taking a multivitamin, prenatal vitamin, or folic acid vitamin every day of the month before they got pregnant with their most recent live born infant

Denominator: Respondents aged 18-44 years

Prevalence: 32.8% (PRAMS, 2011), <http://www.cdc.gov/prams/pramstat/index.html>

Addressed in Professional

Recommendations: ACOG Practice Bulletin: Neural Tube Defects. Number 44; July 2003.

American Academy of Pediatrics (AAP) Recommendations of Committee on Genetics: Folic Acid for the Prevention of Neural Tube Defects. 1999 *Pediatrics*. 104: 325-327.

Recommendations of the U.S. Preventive Services Task Force: The Guide to Preventive Clinical Services 2014. March 2014.

Addressed in HP

2020 Objective(s)

And/or

CDC Winnable Battle: HP2020 MICH-14: Increase the proportion of women of childbearing potential with intake of at least 400 µg of folic acid from fortified foods or dietary supplements

* Target: 26.2 %

CDC Winnable Battle: None

Simplicity: Available on PRAMStat with no additional calculations

Data Completeness: Less than 10% missing data

Other Comments: The indicator is not directly comparable with the HP 2020 indicator or U.S. Preventive Services Task Force recommendations that all women of childbearing age consume 0.4 mg (400 micrograms) of folic acid daily. PRAMS data do not include information on dose of the folic acid in the vitamin.

MIHA also collects this information. There is no online query system, however, annual data tables are available for daily folic acid use. <http://www.cdph.ca.gov/data/surveys/MIHA/Pages/MaternalandInfantHealthAssessment(MIHA)survey.aspx>.

**Hypertension**

Demographic Group: Women aged 18-44 years

Data Source: Behavioral Risk Factors Surveillance System (BRFSS).

<http://www.cdc.gov/BRFSS/>

Numerator: Female respondents aged 18-44 years who reported ever being told by a doctor, nurse, or other health professional that they have high blood pressure, excluding women with high blood pressure but only during pregnancy and women with borderline high blood pressure or pre-hypertension.

Denominator: Female respondents aged 18-44

Prevalence: 10.3% (BRFSS, 2015), <https://nccd.cdc.gov/s_broker/WEATSQL.exe/weat/index.hsql>

Addressed in Professional

Recommendations: The USPSTF (2015), [recommends screening for high blood pressure](https://www.uspreventiveservicestaskforce.org/Page/Document/UpdateSummaryFinal/high-blood-pressure-in-adults-screening?ds=1&s=blood%20pressure) in adults aged 18 years or older (2015). This recommendation applies to women without known hypertension. The USPSTF also recommends getting blood pressure measured outside of the clinical setting for diagnostic confirmation before beginning treatment.

Addressed in HP

2020 Objective(s)

And/or

CDC Winnable Battle: HP2020 HDS-5.1: Reduce the proportion of adults with hypertension

Target: 26.9%

HP2020 HDS-4: Increase the proportion of adults who have had their blood pressure measured within the preceding 2 years and can state whether their blood pressure was normal or high.

* Target: 92.6%

HP2020 HDS-12: Increase the proportion of adults with hypertension whose blood pressure is under control.

* Target: 61.2%

CDC Winnable Battle: Million Hearts®  
http://www.cdc.gov/cdcgrandrounds/archives/2014/september2014.htm

Simplicity: Estimates are readily available **with additional calculations** through the WEAT public use query system

Data Completeness: Less than 10% missing

Other comments: MIHA also collects this information. There is no online query system, however, annual data tables are available for hypertension, preeclampsia, or eclampsia. <http://www.cdph.ca.gov/data/surveys/MIHA/Pages/MaternalandInfantHealthAssessment(MIHA)survey.aspx>.

**Normal Weight**

Demographic Group: Women aged 18-44 years

Data Source: Behavioral Risk Factors Surveillance System (BRFSS)

<http://www.cdc.gov/BRFSS/>

Numerator: Women aged 18-44 years who have a body mass index (BMI) 18.5-24.9 kg/m2. BMI is calculated from self-reported weight and height on the BRFSS survey.

Denominator: Women aged 18-44 years for whom BMI can be calculated using their self-reported weight and height

Prevalence: 45.0% (2014 BRFSS, women aged 18-44 years in 50 states, District of Columbia, and 2 US territories (Puerto Rico and Guam) - unpublished provided by CDC, National Center for Chronic Disease Prevention and Health Promotion, Division of Nutrition, Physical Activity, and Obesity

Addressed in Professional

Recommendations: The USPSTF recommends screening all adults for obesity. For patients with obesity (BMI≥30 kg/m2), clinicians should offer or refer patients to intensive, multicomponent behavioral interventions. (2012)

The American Academy of Family Physicians (AAFP) recommends screening all adults for obesity. For patients with obesity (BMI≥30 kg/m2), clinicians should offer or refer patients to intensive, multicomponent behavioral interventions. (2012)

The American Congress of Obstetricians and Gynecologists (ACOG) recommends that the routine medical examination include an assessment of the patient's weight and BMI. (reaffirmed 2014)

Addressed in HP

2020 Objective(s)

And/or

CDC Winnable Battle: HP2020 MICH-16.5: Increase the proportion of women delivering a live birth who had a healthy weight prior to pregnancy

* Target: 57.8

HP2020 NWS-8: Increase the proportion of adults aged 20 years and older who are at a healthy weight

* Target: 33.9%

CDC Winnable Battle: Improve **nutrition, physical activity, obesity**

Simplicity: State estimates for women 18-44 years of age are not readily available online.

Data Completeness: Less than 10% missing data

Other comments: Normal BMI category data are not provided on the DNPAO interactive, and are currently not accessible on the BRFSS interactive for women of reproductive age.

**Physical Activity**

Demographic group: Women aged 18-44 years

Data Source: Behavioral Risk Factor Surveillance System (BRFSS)

<http://www.cdc.gov/BRFSS/>

Numerator: Women aged 18-44 years who reported doing enough moderate and/or vigorous physical activity in a usual week to meet the recommended levels of aerobic physical activity

Denominator: Women aged 18-44 years who reported doing enough moderate and/or vigorous physical activity in a usual week to meet the recommended levels of aerobic physical activity and those who reported not doing enough moderate or vigorous physical activity in a usual week to meet the recommended levels of aerobic physical activity

Prevalence: 50.3% (BRFSS, 2015), <https://nccd.cdc.gov/s_broker/WEATSQL.exe/weat/index.hsql>

Addressed in Professional

Recommendations: *The National Physical Activity Plan: A Call to Action From the American Heart Association*. Circulation May 26, 2015, Volume 131, Issue 21. Published by the American Heart Association, this advisory summarizes the data describing the health benefits of regular physical activity and the public health burden of low levels of physical activity, and describes the role the National Physical Activity Plan will play in increasing population levels of physical activity. http://circ.ahajournals.org/content/131/21/1932

Addressed in HP

2020 Objective(s)

And/or

CDC Winnable Battle: HP2020 PA-1 Reduce the proportion of adults who engage in no leisure-time physical activity.

* Target: 32.6%

HP2020 PA-2 Increase the proportion of adults who meet current Federal physical activity guidelines for aerobic physical activity and for muscle-strengthening activity

* Target: 20.1%

CDC Winnable Battle: Improve **nutrition, physical activity, obesity**

<http://www.cdc.gov/WinnableBattles/Obesity/index.html>

Simplicity: Estimates are readily available **with additional calculations** through the WEAT public use query system

Data Completeness: Less than 10% missing data

**Other Comments: None**

**Current Smoking**

Demographic group: Women aged 18-44 years

Data Source: Behavioral Risk Factor Surveillance Survey (BRFSS)

<http://www.cdc.gov/BRFSS>

Numerator: Women aged 18-44 years who reported that they smoked ≥ 100 cigarettes in their lifetime and currently smoke every day or some days

Denominator: Women aged 18-44 years who reported that they currently smoke either every day, some days, or not at all, or reported that they had not smoked ≥ 100 cigarettes in their lifetime

Prevalence: 15.9% (BRFSS, 2015), <https://nccd.cdc.gov/s_broker/WEATSQL.exe/weat/index.hsql>

Addressed in Professional

Recommendations: U.S. Preventive Services Task Force: Tobacco Smoking Cessation in Adults, Including Pregnant Women: Behavioral and Pharmacotherapy Interventions, Release Date: September 2015. http://www.uspreventiveservicestaskforce.org/Page/Document/UpdateSummaryFinal/tobacco-use-in-adults-and-pregnant-women-counseling-and-interventions1?ds=1&s=tobacco use

# Community Guide: Reducing Tobacco Use and Secondhand Smoke Exposure http://www.thecommunityguide.org/tobacco/index.html

Addressed in HP

2020 Objective(s)

And/or

CDC Winnable Battle: HP2020 TU-1.1 Reduce cigarette smoking by adults

* Target: 12%

CDC Winnable Battle: Reduce **tobacco use**

**http://www.cdc.gov/winnablebattles/tobacco/index.html**

**Simplicity:** Estimates are readily available **with additional calculations** through the WEAT public use query system and **through CDC’s Chronic Disease and Health Promotion Data & Indicators with no additional calculations (https://chronicdata.cdc.gov/Survey-Data/Behavioral-Risk-Factor-Data-Tobacco-Use-2011-to-pr/wsas-xwh5)**

**Data Completeness: Less than 10% missing data**

**Other Comments: None**

**Unwanted Pregnancy**

Demographic group: Women aged 18-44 having a recent live birth

Data Source: Pregnancy Risk Assessment Monitoring System (PRAMS)

<http://www.cdc.gov/prams/>

Numerator: Respondents aged 18-44 years who reported that just before they got pregnant with their most recent live born infant, they didn’t want to be pregnant then or at anytime in the future

Denominator: Respondents aged 18-44 years who reported that just before they got pregnant with their most recent live born infant, they wanted to be pregnant sooner or then, later, didn’t want to be pregnant then or at any time in the future, or were unsure what they wanted

Prevalence: 9.4% (PRAMS, 2011), <http://www.cdc.gov/prams/pramstat/index.html>

Addressed in Professional

Recommendations: *Clinical Preventive Services for Women: Closing the Gaps,* 2011, published by the Institute of Medicine recommends that women’s preventive services include (among others): a fuller range of contraceptive education, counseling, methods, and services so that women can better avoid unwanted pregnancies and space their pregnancies to promote optimal birth outcomes

<https://iom.nationalacademies.org/Reports/2011/Clinical-Preventive-Services-for-Women-Closing-the-Gaps.aspx>

ACOG Committee Opinion No. 654, Reproductive Life Planning to Reduce Unintended Pregnancy, February 2016

<http://www.acog.org/Resources-And-Publications/Committee->Opinions/Committee-on-Health-Care-for-Underserved-Women/Reproductive-Life-Planning-to-Reduce-Unintended-Pregnancy

Recommendation for teen subgroup:

Preventing HIV/AIDS, Other STIs, and Teen Pregnancy Group-Based Comprehensive Risk Reduction interventions for Adolescents

http://www.thecommunityguide.org/hiv/riskreduction.html

Addressed in HP

2020 Objective(s)

And/or

CDC Winnable Battle: HP 2020 FP-1 Increase the proportion of pregnancies that are intended

* Target: 6.7%

CDC Winnable Battle: Reduce teen pregnancy

Simplicity: Available on PRAMStat with no additional calculations

Data completeness: Less than 10% missing

Other comments: MIHA also collects this information. There is no online query system, however, annual data tables are available for unintended pregnancy (mistimed and unwanted combined). <http://www.cdph.ca.gov/data/surveys/MIHA/Pages/MaternalandInfantHealthAssessment(MIHA)survey.aspx>.

**Postpartum Use of a Most or Moderately Effective Method of Contraception**

Demographic group: Women aged 18-44 years having a recent live birth

Data Source: Pregnancy Risk Assessment Monitoring System (PRAMS)

<http://www.cdc.gov/prams>

Numerator: Respondents aged 18-44 years who reported that they or their husbands or partners were currently using a more effective contraceptive method (sterilization, implant, intrauterine device, injectable, pill, patch, or ring) to keep from getting pregnant

Denominator: Respondents aged 18-44 years who reported that they or their husbands or partners were currently using or were not currently using a more effective contraceptive method (sterilization, implant, intrauterine device, injectable, pill, patch, or ring) to keep from getting pregnant

Prevalence: Published data from PRAMS 2004-2006, from 12 states and New York City, found that 61.7% of women with a recent live birth reported use of a more effective contraceptive method (sterilization, intrauterine device, injectable, pill, patch or ring; implant use was not assessed). The inverse (38.3%) reported use of no method or use of a less effective method <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5830a1.htm>

Addressed in Professional

Recommendations: *Guidelines for Perinatal Care* (7th edition), 2012, published by the American Academy of Pediatrics and the American College of Obstetricians and Gynecologists recommends discussion of contraceptive options and prompt initiation of a method as a primary focus of routine antenatal and postpartum care (page 202)

*Clinical Preventive Services for Women: Closing the Gaps,* 2011, published by the Institute of Medicine recommends that women’s preventive services include (among others): a fuller range of contraceptive education, counseling, methods, and services so that women can better avoid unwanted pregnancies and space their pregnancies to promote optimal birth outcomes

<https://iom.nationalacademies.org/Reports/2011/Clinical-Preventive-Services-for-Women-Closing-the-Gaps.aspx>

*ACOG Committee Opinion No. 450: Increasing use of contraceptive implants and intrauterine devices to reduce unintended pregnancy,* 2009, published in *Obstetrics and Gynecology* recommends that long-acting reversible contraceptive methods should be encouraged as options for most women to reduce unintended pregnancy since these methods require a single act of motivation for long-term use and eliminate adherence and user-dependence from the effectiveness equation.

Addressed in HP

2020 Objective(s)

And/or

CDC Winnable Battle: HP2020 FP-5: Reduce the proportion of pregnancies conceived within 18 months of a previous birth

* Target: 6.7%

HP2020 FP-6: Increase the proportion of females at risk of unintended pregnancy or their partners who used contraception at most recent sexual intercourse

* Target: 91.6%

HP2020 FP-2: Reduce the proportion of females experiencing pregnancy despite use of a reversible contraceptive method

* Target: 9.9%

CDC Winnable Battle: Reduce teen pregnancy

<https://www.cdc.gov/winnablebattles/teenpregnancy/index.html>

Simplicity: Data are not currently available via PRAMStat. As a core indicator, it will become available with no additional calculations needed.

Data Completeness: Not reported

Other Comments: MIHA collects comparable information, but not reported in online Snapshot reports:

http://www.cdph.ca.gov/data/surveys/MIHA/Pages/MaternalandInfantHealthAssessment(MIHA)survey.aspx

Effectiveness of family planning methods chart: <http://www.cdc.gov/reproductivehealth/unintendedpregnancy/pdf/contraceptive_methods_508.pdf>