Indicator: **High School Completion (B1)**

Domain: Social Determinants of Health

Sub-domain   Education

Demographic group: Women aged 18-44 years.

Data resource: California Health Interview Survey (CHIS)
                             http://www.chis.ucla.edu/

Data availability: CHIS: 2005, 2007, 2009

Numerator: Female respondents aged 18-44 years from Los Angeles
                             County who completed the 12th grade or received a GED
                             including those who completed one or more years of
                             college (excluding unknowns and refusals).

Denominator: Female respondents aged 18-44 years from Los Angeles
                             County who reported their highest completed level of
                             education.

Measures of frequency: Weighted estimates of annual prevalence and 95%
                             confidence interval.

Period of case definition: Current.

Significance: Education is one of the most widely used indicators of
                             socioeconomic status (SES) in US public health research,
                             and it most reliably and consistently predicts health,
                             especially for women and their children,[1] Reasons for its
                             popularity include: ease of measurement; applicability to
                             persons not in the active labor force, stability over adult
                             lifespan, and association with numerous health outcomes.[2]
                             A low level of education limits a person's access to jobs
                             and other social resources which in turn limits his/her
                             capacity to integrate within society and increases the risk of
                             poverty.[3] Having less education can lead to unhealthy
                             behaviors, exposure to stress, and psychological reactions
                             to stress that increase the risk of intrauterine growth
                             retardation or preterm delivery.[3] Low maternal and paternal
                             education were the strongest predictors of adverse
                             reproductive outcomes in one study.[4]

Limitations of indicator:	Measuring the diverse complexity of SES with one relatively unchanging measure has its limitations. Changing SES levels over a lifetime have been shown to affect health, but the level of education generally remains stable even with the loss of resources.[2] The span of education levels is far less than the range of income and wealth so that education may be a less sensitive measure of the magnitude of social inequalities in health. Education is less predictive than class position of ownership of capital assets.[2] Lastly, educational level does not have a universal meaning across populations and generations.[2] Studies of the reliability of educational attainment in surveys showed the variance is small and the correlation is high.[5,6] Some BRFSS studies have also identified high reliability [7-9] and two studies found correlations between 0.70-0.80.[10,11] CHIS is a random-dial telephone survey. The sample used was taken from the database of landline phone numbers. Hence, non response and non coverage can be a potential source of bias, especially taking into account the increasing number of cellular phone users in California. However, recently CHIS started to include cell phones in the sample as well as studied differences between cell phone only and land line users for the proper weighting of the estimates and maximal reduction of the non coverage bias[12].

Related Healthy People
2010 Objective(s):   None.

2020 Objective(s):   ECBP- 6. Increase the proportion of the population that completes high school education. Target: 97.9%

References:

1. Bloomberg L, Meyers J, Braverman MT. The importance of social interaction: a new perspective on social epidemiology, social risk factors, and health. Health Educ Q 1994; 21: 447-463.
2. Krieger N, Williams DR, Moss NE. Measuring Social Class in US Public Health Research: Concepts, methodologies, and Guidelines. Annu Rev Public Health 1997; 18: 341-78.
3. Kramer MS, Seguin L, Lydon J, Goulet L. Socio-economic disparities in pregnancy outcome: why do the poor fare so poorly. Paediatr Perinat Epidemiol 2000; 14: 194-210.

4. Parker JD, Schoendorf KC, Kiely JL. Associations between measures of socioeconomic status and low birth weight, small for gestational age, and premature delivery in the United States. Ann Epidemiol 1994; 4: 271-278.

5. Folger JK, Nam CB. Education of the American population. Washington, DC: U.S. Government Printing Office, 1967.

6. Morabia A, Moore M, Wynder EL. Reproducibility of food frequency measurements and inferences from a case-control study. Epidemiology 1990; 1:305-10.

7. Browson RD, Jackson-Thompson J, Wilkerson JD, et al. Reliability of information on chronic disease risk factors collected in the Missouri Behavioral Risk Factor Surveillance System. Epidemiology 1994; 5: 545-9.

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9. Browson RC, Elyer AA, King AC, et al. Reliability of information on physical activity and other chronic disease risk factors among US women aged 40 years or older. Am J Epidemiol 1999; 149: 379-91.

10. Shea S, Stein AD, Lantigua R, et al. Reliability of the Behavioral Risk Factor Survey in a triethnic population. Am J Epidemiol 1991; 133: 489-500.

11. Stein AD, Lederman RI, Shea S. The Behavioral Risk Factor Surveillance System questionnaire: its reliability in a statewide sample. Am J Public Health 1993; 83: 1768-72.

12. CHIS data quality. Assessing and addressing potential noncoverage bias. http://www.chis.ucla.edu/dataquality2.html

Indicator:	**High School Completion (B1a)**
Domain:	Social Determinants of Health
Sub-domain	Education
Demographic group:	Women aged 18-49 years.
Data resource:	Los Angeles County Health Survey (LACHS) http://publichealth.lacounty.gov/ha/hasurveyintro.htm
Data availability:	LACHS: 2007
Numerator:	Female respondents aged 18-49 years from Los Angeles County who completed the 12th grade and one or more years of college (excluding unknowns and refusals).
Denominator:	Female respondents aged 18-49 years from Los Angeles County who reported their highest completed level of education (excluding non-responders).
Measures of frequency:	Weighted estimates of annual prevalence and 95% confidence interval.
Period of case definition:	Current.
Significance:	Education is one of the most widely used indicators of socioeconomic status (SES) in US public health research, and it most reliably and consistently predicts health, especially for women and their children,[1] Reasons for its popularity include: ease of measurement; applicability to persons not in the active labor force, stability over adult lifespan, and association with numerous health outcomes.[2] A low level of education limits a person's access to jobs and other social resources which in turn limits his/her capacity to integrate within society and increases the risk of poverty.[3] Having less education can lead to unhealthy behaviors, exposure to stress, and psychological reactions to stress that increase the risk of intrauterine growth retardation or preterm delivery.[3] Low maternal and paternal education were the strongest predictors of adverse reproductive outcomes in one study.[4]
Limitations of indicator:	LACHS is a telephone survey that includes only households that have access to landline phones. Hence, non coverage and non response can be a potential source of

bias. However, weighting procedures were used to reduce bias associated with exclusion of households without landline phones[5].

Related Healthy People
2010 Objective(s):   None.

2020 Objective(s):   ECBP- 6. Increase the proportion of the population that completes high school education. Target: 97.9%

References:

1. Bloomberg L, Meyers J, Braverman MT. The importance of social interaction: a new perspective on social epidemiology, social risk factors, and health. Health Educ Q 1994; 21: 447-463.
2. Krieger N, Williams DR, Moss NE. Measuring Social Class in US Public Health Research: Concepts, methodologies, and Guidelines. Annu Rev Public Health 1997; 18: 341-78.
3. Kramer MS, Seguin L, Lydon J, Goulet L. Socio-economic disparities in pregnancy outcome: why do the poor fare so poorly. Paediatr Perinat Epidemiol 2000; 14: 194-210.
4. Parker JD, Schoendorf KC, Kiely JL. Associations between measures of socioeconomic status and low birth weight, small for gestational age, and premature delivery in the United States. Ann Epidemiol 1994; 4: 271-278.
5. LACHS 2007. Summary of Survey Methodology. 2008, p.3. http://publichealth.lacounty.gov/ha/docs/2007%20LACHS/2007%20LA%20Health%20Survey%20Methods%20(amended).pdf

Indicator: **High School Completion (B1b)**

Domain: Social Determinants of Health

Sub-domain   Education

Demographic group: Women who delivered a live birth in a given year in Los Angeles County.

Data resource: LAMB
www.lalamb.org

Data availability: 2005, 2007, 2010

Numerator: Women who delivered a live birth in a given year in Los Angeles County reporting that they at least completed the 12th grade or received a GED (excluding unknowns or refusals).

Denominator: All women who delivered a live birth in a given year in Los Angeles County reporting their highest completed level of education (excluding non-responders).

Measures of frequency: Crude annual prevalence and by selected maternal demographic characteristics, weighted to account for unequal probabilities of selection, and adjust for non-response and mail/telephone non-coverage.

Period of case definition: At the delivery that resulted in the most recent live birth.

Significance: Education is one of the most widely used indicators of socioeconomic status (SES) in US public health research, and it most reliably and consistently predicts health, especially for women and their children,[1] Reasons for its popularity include: ease of measurement; applicability to person not in the active labor force, stability over adult lifespan, and association with numerous health outcomes.[2] A low level of education limits a person's access to jobs and other social resources which in turn limits his/her capacity to integrate within society and increases the risk of poverty.[3] Having less education can lead to unhealthy behaviors, exposure to stress, and psychological reactions to stress that increase the risk of intrauterine growth retardation or preterm delivery.[3] Low maternal and paternal

	education were the strongest predictors of adverse reproductive outcomes in one study.[4]
Limitations of indicator:	Measuring the diverse complexity of SES with one relatively unchanging measure has its limitations. SES levels can change within a lifetime, affecting health, but the level of education generally remains stable.[2] Education is less predictive than ownership of capital assets for determining SES.[2] Therefore, education may not be a sensitive measure of the magnitude of social inequalities in health. Lastly, educational level does not have a universal meaning across populations and generations.[2] However, studies of the reliability of educational attainment in surveys showed the variance is small and the correlation is high.[5,6] Some BRFSS studies have also identified high reliability [7-,9] and two studies found correlations between 0.70-0.80.[10,11]
Related Healthy People 2010 Objective(s):	None.
2020 Objective(s):	ECBP- 6. Increase the proportion of the population that completes high school education. Target: 97.9%

References:

1. Bloomberg L, Meyers J, Braverman MT. The importance of social interaction: a new perspective on social epidemiology, social risk factors, and health. Health Educ Q 1994; 21: 447-463.
2. Krieger N, Williams DR, Moss NE. Measuring Social Class in US Public Health Research: Concepts, methodologies, and Guidelines. Annu Rev Public Health 1997; 18: 341-78.
3. Kramer MS, Seguin L, Lydon J, Goulet L. Socio-economic disparities in pregnancy outcome: why do the poor fare so poorly. Paediatr Perinat Epidemiol 2000; 14: 194-210.
4. Parker JD, Schoendorf KC, Kiely JL. Associations between measures of socioeconomic status and low birth weight, small for gestational age, and premature delivery in the United States. Ann Epidemiol 1994; 4: 271-278.
5. Folger JK, Nam CB. Education of the American population. Washington, DC: U.S. Government Printing Office, 1967.
6. Morabia A, Moore M, Wynder EL. Reproducibility of food frequency measurements and inferences from a case-control study. Epidemiology 1990; 1:305-10.

7. Browson RD, Jackson-Thompson J, Wilkerson JD, et al. Reliability of information on chronic disease risk factors collected in the Missouri Behavioral Risk Factor Surveillance System. Epidemiology 1994; 5: 545-9.
8. Stein AD, Courval JM, Lederman RI, et al. Reproducibility of responses to telephone interviews: demographic predictors of discordance in risk factor status. Am J Epidemiol 1995; 141: 1097-106.
9. Browson RC, Elyer AA, King AC, et al. Reliability of information on physical activity and other chronic disease risk factors among US women aged 40 years or older. Am J Epidemiol 1999; 149: 379-91.
10. Shea S, Stein AD, Lantigua R, et al. Reliability of the Behavioral Risk Factor Survey in a triethnic population. Am J Epidemiol 1991; 133: 489-500.
11. Stein AD, Lederman RI, Shea S. The Behavioral Risk Factor Surveillance System questionnaire: its reliability in a statewide sample. Am J Public Health 1993; 83: 1768-72.

Indicator:	**High School Completion (B1c)**
Domain:	Social Determinants of Health
Sub-domain	Education
Demographic group:	Women who had a fetal/infant death.
Data resource:	L.A. HOPE http://publichealth.lacounty.gov/mch/LAHOPE/LAHOPE.html
Data availability:	2007-2009
Numerator:	Women having a fetal/infant death in LA County in 2007-2009 who reported completing the 12th grade or receiving GED including those who completed one or more years of college (excluding unknowns and refusals).
Denominator:	All women having a fetal/infant death in LA County in 2007-2009 (except non-respondents).
Measures of frequency:	Crude annual prevalence and by selected maternal demographic characteristics, weighted to account for unequal probabilities of selection, and adjusted for non-response and mail/telephone non-coverage.
Period of case definition:	At the most recent delivery (in case of infant death) or at fetal death.
Significance:	Education is one of the most widely used indicators of socioeconomic status (SES) in US public health research, and it most reliably and consistently predicts health, especially for women and their children,[1]Reasons for its popularity include: ease of measurement; applicability to person not in the active labor force, stability over adult lifespan, and association with numerous health outcomes.[2] A low level of education limits a person's access to jobs and other social resources which in turn limits his/her capacity to integrate within society and increases the risk of poverty.[3] Having less education can lead to unhealthy behaviors, exposure to stress, and psychological reactions to stress that increase the risk of intrauterine growth retardation or preterm delivery.[3] Low maternal and paternal

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Limitations of indicator:	education were the strongest predictors of adverse reproductive outcomes in one study.[4]
Limitations of indicator:	Measuring the diverse complexity of SES with one relatively unchanging measure has its limitations. SES levels can change within a lifetime, affecting health, but the level of education generally remains stable.[2] Education is less predictive than ownership of capital assets for determining SES.[2] Therefore, education may not be a sensitive measure of the magnitude of social inequalities in health. Lastly, educational level does not have a universal meaning across populations and generations.[2] However, studies of the reliability of educational attainment in surveys showed the variance is small and the correlation is high.[5,6] Some BRFSS studies have also identified high reliability [7-,9] and two studies found correlations between 0.70-0.80.[10,11]

Related Healthy People
2010 Objective(s):   None.

2020 Objective(s):   ECBP- 6. Increase the proportion of the population that completes high school education. Target: 97.9%

References:

1. Bloomberg L, Meyers J, Braverman MT. The importance of social interaction: a new perspective on social epidemiology, social risk factors, and health. Health Educ Q 1994; 21: 447-463.
2. Krieger N, Williams DR, Moss NE. Measuring Social Class in US Public Health Research: Concepts, methodologies, and Guidelines. Annu Rev Public Health 1997; 18: 341-78.
3. Kramer MS, Seguin L, Lydon J, Goulet L. Socio-economic disparities in pregnancy outcome: why do the poor fare so poorly. Paediatr Perinat Epidemiol 2000; 14: 194-210.
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5. Folger JK, Nam CB. Education of the American population. Washington, DC: U.S. Government Printing Office, 1967.
6. Morabia A, Moore M, Wynder EL. Reproducibility of food frequency measurements and inferences from a case-control study. Epidemiology 1990; 1:305-10.

7. Browson RD, Jackson-Thompson J, Wilkerson JD, et al. Reliability of information on chronic disease risk factors collected in the Missouri Behavioral Risk Factor Surveillance System. Epidemiology 1994; 5: 545-9.

8. Stein AD, Courval JM, Lederman RI, et al. Reproducibility of responses to telephone interviews: demographic predictors of discordance in risk factor status. Am J Epidemiol 1995; 141: 1097-106.

9. Browson RC, Elyer AA, King AC, et al. Reliability of information on physical activity and other chronic disease risk factors among US women aged 40 years or older. Am J Epidemiol 1999; 149: 379-91.

10. Shea S, Stein AD, Lantigua R, et al. Reliability of the Behavioral Risk Factor Survey in a triethnic population. Am J Epidemiol 1991; 133: 489-500.

11. Stein AD, Lederman RI, Shea S. The Behavioral Risk Factor Surveillance System questionnaire: its reliability in a statewide sample. Am J Public Health 1993; 83: 1768-72.

Indicator:	**Poverty (B2)**

Domain: Social Determinants of Health

Sub-domain: Poverty

Demographic group: Women aged 18-44 years

Data resource: California Health Interview Survey (CHIS)
http://www.chis.ucla.edu/

Data availability: 2005, 2007, 2009

Numerator: Female respondents aged 18-44 years from Los Angeles County who reported annual family income below 200% of the Federal Poverty Threshold.

Denominator: Female respondents aged 18-44 years from Los Angeles County who reported annual family income and family size (excluding those with missing data).

Measures of frequency: Weighted estimates of annual prevalence and 95% confidence interval.

Period of case definition: Within the previous year.

Significance: Socioeconomic status (SES) is one of the major social determinants of health and is generally used to define social inequality. A determinant of SES is income and its comparison to poverty. In the United States poverty line is drawn at income needed for subsistence[1]. If poverty were listed as a cause of death in the U.S., in 1991 it would have ranked as the fourth leading cause of death among black women and sixth among white women.[2] Poverty's correlation to SES is self-evident. Even when confounding and/or effect modification are taken into account, low SES is generally associated with increased risks of both preterm birth and intrauterine growth retardation.[3,4]
In the United States, 200% or lower of the federal poverty level is the criterion for eligibility to many federal and state health and social programs. As part of preconception health promotion, it is recommended that providers ask all women of childbearing age about their economic status and refer the needy to agencies that can help them determine

their eligibility to federal and state funded primary and preventive health services. [5]

Limitations of indicator: Relating SES to poverty is problematic as poverty line can change from year to year and the economic measures on which it is based also change. Poverty line can also change with changes in neighborhoods and regions, such as urban rural. Changes in a family's size can change the level of its poverty, yet its SES may remain stable.

CHIS is a random-dial telephone survey. The sample was taken from the database of landline phone numbers. Hence, non response and non coverage can be a potential source of bias, especially, taking into account increasing number of cellular phone users in California. However, recently CHIS started to include cell phones in the sample as well as studied differences between cell phone only and land line users for the proper weighting of the estimates and maximal reduction of the non coverage bias[6].

Related Healthy People
2010 Objective(s): None.

2020 Objective(s): None.

References:

1. Ruggles P. Drawing the Line: Alternative Poverty Measures and Their Implications for Public Policy. Washington DD: Urban Institute Press, 1990.
2. Hahn RA, Eaker E, Barker ND, et al. Poverty and death in the U.S.—1972 and 1991. Int. J. Health Serv 1996; 26:673-90.
3. Parker JD, Schoendorf KC, Kiely JL. Associations between measures of socioeconomic status and low birth weight, small for gestational age, and premature delivery in the United States. Ann Epidemiol 1994; 4:271-278.
4. Peacock JF, Bland JM, Anderson HR. Preterm Delivery: effects of socioeconomic factors, psychological stress, smoking, alcohol and caffeine. BMJ 1995; 311: 531-535.
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