Immunization Coverage of Kindergartners in Kansas, 2010-2011

Background

Each year, the Advisory Committee on Immunization Practices (ACIP) releases a recommended immunization schedule [1]. This is done to ensure that the schedule is reflective of the current recommended uses of licensed vaccines. Additionally, this recommended schedule is used to guide daycare, pre-school and school immunization policies. Kansas requires students enrolled in public and private schools to receive certain vaccinations. During the 2010-11 academic year, kindergartners were required to receive five doses of diphtheria, tetanus and pertussis vaccine (DTaP5/4)*, four doses of polio vaccine (Polio4), three doses of measles, mumps and rubella vaccine (MMR2), two doses of varicella vaccine (Var2), and three doses of hepatitis B virus vaccine (HepB3).

A survey was conducted to assess the percentage of kindergarten children who were up-to-date for the recommended vaccines. The full report of survey results can be found at http://www.kdheks.gov/immunize/download/Kindergarten_2010-11.pdf.

Methods

The Kansas Certificates of Immunizations (KCIs) and other immunization data for children enrolled in a kindergarten class in Kansas public and private schools during the 2010-2011 school year were collected and evaluated for immunization coverage levels. The characteristics of interest, or outcome variables, were the percentages of children who were fully immunized against each individual vaccination [diphtheria, tetanus and pertussis (DTaP5)*; polio (Polio4); measles, mumps and rubella (MMR2); varicella (Var2); and hepatitis B virus (HepB3)], as well as those up to date for all of the required vaccinations [DTaP5, Polio4, MMR2, Var2, HepB3 (5-4-2-2-3)].

A stratified, cross-sectional design was utilized for this study, with each county representing a stratum. A probability sample of all children enrolled in Kansas public school kindergartens was drawn. To ensure an adequate sample size in each county and to maximize the efficiency of the sampling process, a different sampling ratio was established for each county, and a probability sample was selected using a systematic sample technique. Due to the small size of the private school population in Kansas, all records from private schools were solicited. Analyses were performed using weighted data, and the analyses accounted for the complex sample design effect due to the stratification process and differences in sampling ratios between counties. Sample weights were calculated using the number of kindergartners enrolled in a county and the number of records analyzed for that county.

Vaccination coverage levels were calculated for children at the time of school entry and 30 days following school entry because many school districts maintain a policy of a "grace period" during which a child may be vaccinated with the appropriate vaccines without being excluded from school. Children who were between the ages of five and seven years on the first day of the school year were included in the study. Two types of exemptions from school immunization requirements – medical and religious – are permitted in Kansas, and only those who were not exempt were included in the analysis.

Results

In total, there were 792 schools, 690 public and 102 private, included in the analysis. A representative sample of 14,499 children was included in this analysis, and all were between the ages of five and seven at school entry and were not exempt from immunization requirements.

At the start of the 2010-2011 school year, the immunization coverage levels for all vaccinations required for school entry (DTaP5, Polio4, MMR2, Var2, and HepB3) were above 87 percent, with HepB3 having the highest coverage of any vaccine (Figure 1). The complete series for all five required vaccinations (5-4-2-2-3) had a coverage level of 82 percent at school entry. Healthy People 2010 (HP2010) goals for kindergarten vaccination coverage levels are ≥95 percent for all vaccines required by Kansas for school entry [2]. Hepatitis B vaccine was the only immunization that reached this goal.

Figure 1. Immunization Coverage Levels of Kindergarten Students, Kansas, 2010-2011
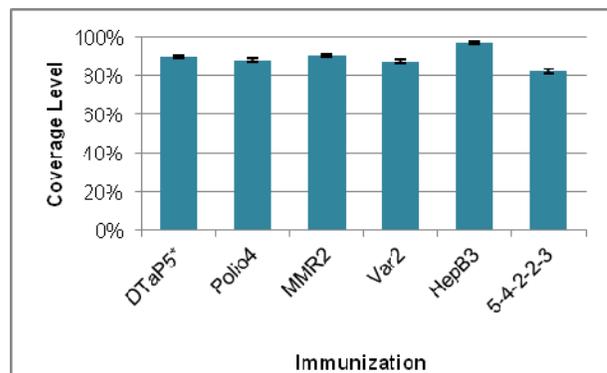
The immunization coverage levels of kindergartners were significantly greater for most required vaccinations (DTaP5, Polio4, MMR2, Var2) when comparing coverage levels from school entry to 30 days following the first day of school (Table 1). The percentages of kindergartners up-to-date for all required vaccinations [DTaP5, Polio4, MMR2, Var2, and HepB3 (5-4-2-2-3)] were significantly higher 30 days after school entry than they

were on the first day of school, except the HepB3 did not have a significantly increased coverage level.

Table 1. Immunization Coverage Levels of Kindergarten Students at School Entry and 30 Days Following School Entry, Kansas, 2010-2011

Vaccination	At School Entry % (95% CI)	30 Days After School Entry %(95% CI)
DTaP5*	89.9 (89.1 - 90.7)	92.5 (91.8 - 93.2)
Polio4	88.3 (87.5 - 89.2)	91.0 (90.2 - 91.7)
MMR2	90.5 (89.7 - 91.2)	93.0 (92.3 - 93.6)
Var2	87.7 (86.8 - 88.5)	90.4 (89.6 - 91.2)
HepB3	97.4 (97.0 - 97.8)	97.5 (97.1 - 97.9)
5-4-2-2-3	82.4 (81.4 - 83.4)	85.5 (84.6 - 86.5)

*5 doses of DTaP or 4 doses if the fourth is administered on or after the fourth birthday.

For several required vaccines, there was significant variation in the immunization coverage levels for kindergartners enrolled in public and private schools (Figure 2). For DTaP5, Polio4, HepB3, and 5-4-2-2-3, children enrolled in public school had significantly greater immunization coverage than those enrolled in private schools.

Figure 2. Immunization Coverage Levels of Public and Private School Kindergartners at School Entry, Kansas, 2010-2011
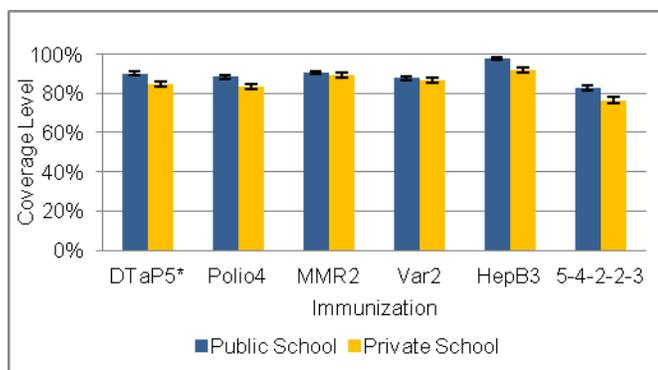
Discussion

All individual vaccinations required for school entry were above 87 percent coverage at school entry for kindergartners enrolled in Kansas schools. The only vaccine that met the HP2010 goal of at least 95 percent coverage was HepB3. DTaP5, Polio4, MMR2, and Var2 were less than 8 percentage points away from meeting the goal. For required vaccinations that did not meet the HP2010 goal, immunization levels 30 days following the start of the school year were significantly higher when compared to immunization coverage levels on the first day of school. Additionally, there was significant variation in the coverage levels of several immunizations when comparing children enrolled in public and private schools.

Vaccine coverage is of great public health importance. By having greater vaccine coverage, there is an increase in herd immunity, which leads to lower disease incidence and decreased transmission during disease outbreaks. In 2006, a widespread outbreak of mumps occurred in Kansas and across the United States. Prior to the outbreak, the incidence of mumps was at a historical low, but even with the outbreak, the mumps disease rates were still much lower than in the pre-vaccination era. Due to high vaccination coverage, tens or hundreds of thousands of cases were possibly prevented [3,4].

However, due to unvaccinated and under vaccinated individuals, the United States has seen a rise in diseases that were previously present at low levels. In 2008, the United States had

140 measles cases, more than any year since 1996, and as of May 20, 2011, the United States has documented 118 cases of measles, of which 89 percent were unvaccinated [5]. Additionally, there has been a rise in the number of pertussis cases throughout the United States, and Kansas has had several outbreaks in unvaccinated or under vaccinated populations.

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Footnotes
* 5 doses of DTaP or 4 doses if the fourth is administered on or after the fourth birthday

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Prevalence of Depression Among Kansas Adults with Selected Chronic Health Conditions

Background
Depressive disorders, including major depression, dysthymic disorder, and minor depression, are serious illnesses that may require medications, psychotherapies or other treatments [1]. Depressive disorders are common among persons with chronic medical conditions and are associated with adverse outcomes and increased health care utilization [2, 3]. Recognition and treatment of depressive disorders is an important factor in successfully managing chronic conditions such as asthma, arthritis, cardiovascular disease and diabetes.

Objective
The objective of this study is to describe the prevalence of depression among Kansas adults with arthritis, asthma, cardiovascular disease, and diabetes, and the differences in the burden of co-morbid depression by socioeconomic groups.

Methods
2010 Kansas Behavioral Risk Factor Surveillance System (BRFSS) data were analyzed. Kansas BRFSS is an annual population-based random digit-dial telephone survey, tracking health conditions and risk behaviors of non-institutionalized adults ages 18 years and older, residing in a private residence with a landline telephone. The sample size for the 2010 Kansas BRFSS survey was 8,570 respondents.

Respondents were considered to have depression if they responded "yes" to the question, "Has a doctor or other healthcare provider ever told you that you have a depressive disorder?"

Respondents were considered to have asthma if the responded "yes" to the questions, "Have you ever been told by a doctor, nurse or other health professional that you had asthma?" and "Do you still have asthma?" Respondents were considered to have arthritis if they responded "yes" to the question, "Have you ever been told by a doctor or other health professional that you have some form of arthritis, rheumatoid arthritis, gout, lupus, or fibromyalgia?" Respondents were considered to have cardiovascular disease (CVD) if they responded "yes" to one or more of the following questions, "Has a doctor, nurse of other health professional ever told you that you had a heart attack, also called a myocardial infarction?"; "Has a doctor, nurse

of other health professional ever told you that you had angina or coronary heart disease?"; and "Has a doctor, nurse of other health professional ever told you that you had a stroke?" Respondents were considered to have diabetes if they responded "yes" to the question, "Have you ever been told by a doctor that you have diabetes?" Those who were female and told only during pregnancy and who had pre-diabetes or borderline diabetes were excluded.

Weighted analysis of Kansas BRFSS data was performed using SAS 9.2 software to calculate population-based estimates for Kansas adults ages 18 years and older. Prevalence of depression among adults with asthma, arthritis, cardiovascular disease or arthritis were assessed among population subgroups with regard to gender, age, annual household income, education, and disability status.

Results

In Kansas, about 15% of adults had been told by a healthcare provider that they have some form of depression (Table 2). The prevalence of diagnosed depression was significantly higher among women (19%, 95% CI: 17.1-20.8) compared to men (10%, 95% CI: 8.4-12.0) and was higher among those 18-64 years of age (16%, 95% CI: 14.2-17.4) compared to those 65 years of age and older (11%, 95% CI: 8.7-12.4). The prevalence of depression was higher among those with an annual household income less than $35,000 (21%, 95% CI: 18.4-23.9) compared to those with an annual household income of $35,000 or more (13%, 95% CI: 10.9-14.1). There was no significant difference in depression prevalence by level of education.

In general, the prevalence of diagnosed depression was higher among persons with chronic medical conditions (Figure 3). The prevalence of depression was higher among persons with asthma (30%, 95% CI: 24.1-35.9) compared to those without asthma (13%, 95% CI: 11.9-14.6), higher among those with arthritis (22%, CI: 19.3-24.5) compared to those without arthritis (12%, 95% CI: 10.5-13.5) and higher among persons with cardiovascular disease (22%, 95% CI: 17.1-27.3) compared to those without cardiovascular disease (14%, 95% CI: 12.6-15.2). The prevalence of depression among persons with diabetes (17%, 95% CI: 12.5-20.8) was not significantly different from those without diabetes (14%, 95% CI: 13.0-15.7).

Figure 3. Prevalence of Depressive Disorder Among Kansas Adults with Selected Chronic Health Conditions, 2010 Kansas BRFSS.
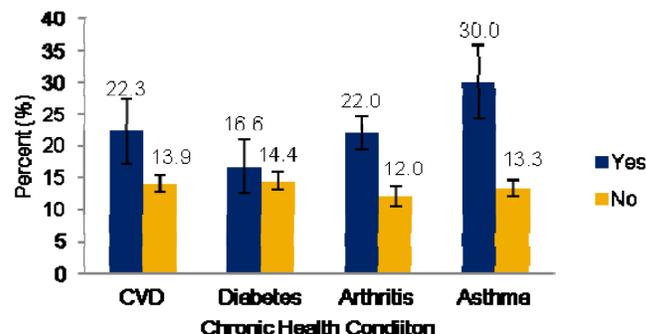

Table 2. Percentage of Kansas Adults Ever Diagnosed with a Depressive Disorder by Selected Demographics, Risk Factors, and Selected Chronic Health Conditions, 2010 Kansas BRFSS.

	Prevalence of Depressive Disorder Among Kansas Adults (%, 95% CI*)	Prevalence of Depressive Disorder Among Adults with Asthma (%, 95% CI*)	Prevalence of Depressive Disorder Among Adults with Arthritis (%, 95% CI*)	Prevalence of Depressive Disorder Among Adults with CVD (%, 95% CI*)	Prevalence of Depressive Disorder Among Adults with Diabetes (%, 95% CI*)
Total	14.7 (13.4-16.0)	30.0 (24.1-35.9)	22.0 (19.3-24.5)	22.3 (17.1-27.3)	16.6 (12.5-20.8)
Gender					
Male	10.2 (8.4-12.0)	9.8 (8.0-11.6)	14.1 (10.7-17.5)	18.8 (12.1-25.4)	9.0 (3.0-15.1)
Female	19.0 (17.1-20.8)‡	16.7 (14.9-18.6)	27.6 (24.0-31.1)‡	27.6 (20.3-34.9)	24.6 (19.1-30.1)‡
Age					
18-64	15.8 (14.2-17.4)‡	14.3 (12.7-15.9)	27.7 (23.8-31.6)‡	32.0 (23.2-40.7)‡	21.3 (14.7-30.0)
65 +	10.6 (8.7-12.4)	9.3 (7.5-11.1)	14.1 (11.3-17.0)	14.1 (9.2-19.0)	11.1 (7.3-14.9)
Income					
Less than $35,000	21.2 (18.4-23.9)‡	18.7 (15.9-21.5)	30.2 (25.5-34.9)‡	29.7 (22.4-36.9)‡	21.6 (15.7-27.4)
$35,000 +	12.5 (10.9-14.1)	11.7 (10.1-13.4)	17.4 (14.1-20.7)	14.1 (7.0-21.2)	13.8 (6.9-20.7)
Education†					
H.S. or less	15.3 (12.9-17.7)	13.3 (11.0-15.7)	22.0 (17.7-26.3)	29.5 (21.1-37.8)	21.1 (13.4-28.7)
College or college grad	14.3 (12.8-15.9)	13.2 (11.6-14.7)	21.9 (18.7-25.1)	15.8 (10.4-21.1)	13.6 (9.2-17.9)
Disability Status					
Living with a disability	28.6 (25.4-31.8)‡	25.2 (21.8-28.5)	19.0 (16.1-21.9)	17.7 (12.0-23.3)	12.6 (8.3-16.8)
Not living with a disability	10.1 (8.8-11.4)	9.7 (8.3-11.0)	27.4 (22.5-32.3)	29.4 (20.7-38.0)	23.6 (15.5-31.7)
Leisure time Physical Activity					
Yes	12.7 (11.3-14.1)	11.8 (10.4-13.3)	19.2 (14.5-24.0)	19.4 (10.8-30.0)	7.5 (1.2-13.8)
No	20.9 (17.9-23.9)‡	17.9 (14.8-20.9)	22.6 (19.5-25.7)	21.7 (16.0-27.4)	18.6 (13.7-23.4)
Weight Status					
Normal Weight	11.1 (9.3-13.0)	10.0 (8.2-11.8)	35.5 (27.5-43.6)	41.3 (26.8-55.9)	38.0 (20.7-55.8)
Overweight or Obese	16.4 (14.6-18.1)‡	14.8 (13.0-16.6)	19.7 (17.0-22.4)	17.1 (12.6-21.7)	13.0 (9.7-16.3)
Current Smoker					
Yes	23.1 (18.9-27.3)‡	20.4 (16.1-24.7)	30.8 (26.8-34.9)	31.2 (24.2-38.1)	25.6 (18.9-32.4)
No	13.1 (11.7-14.4)	12.0 (10.6-13.3)	12.9 (10.0-15.8)	11.7 (5.2-18.3)	7.8 (3.4-12.0)

*CI=Confidence interval
†Education: H.S. or less=high school education or less; College or college grad=some college, college graduate or graduate school
‡Significant differences within group

Among subpopulation groups, prevalence of depression was significantly higher among women with asthma (17%, 95% CI: 14.9-18.6), arthritis (28% 95% CI: 24.0-31.1%) or diabetes (25%, 95% CI: 19.1-30.1) compared to men with asthma (10%, 95% CI: 8.0-11.6), arthritis (14%, 95% CI: 10.7-17.5) or diabetes (9%, 95% CI: 19.1-30.1). Prevalence of depression was higher among adults 18-64 years of age with asthma (15%, 95% CI: 12.7-15.9), arthritis (28%, 95% CI: 23.8-31.6) or CVD (32%, 95% CI: 23.2-40.7) compared to those 65 years of age and older with asthma (9%, 95% CI: 7.5-11.1), arthritis (14%, 95% CI: 11.3-17.0), or CVD (14%, 95% CI: 9.2-19.0). This trend was also true for those with a high school education or less with asthma (19%, 95% CI: 15.9-21.5), arthritis (30%, 95% CI: 25.5-34.9) or CVD (30%, 95% CI: 22.4-36.9) compared to those with at least some college education. Prevalence of depression was significantly higher for adults living with a disability as compared to those not living with a disability for persons with asthma (25%, 95% CI: 21.8-28.5 vs 10%, 95% CI: 8.3-11.0), arthritis (31%, 95% CI: 26.8-34.9 vs 13%, 95% CI: 10.0-15.8), CVD (20%, 95% CI: 17.9-21.7 vs 4.5%, 95% CI: 4.0-5.0) or diabetes (26%, 95% CI: 18.9-32.4 vs 8%, 95% CI: 3.4-12.0).

Discussion

About 15 percent of Kansas adults had diagnosed depression. Depression prevalence was higher among persons with asthma, arthritis and cardiovascular disease. The prevalence of depression was higher among women, adults 18-64 years of age and among those with lower annual household incomes. Similar patterns of depression prevalence among population subgroups were observed for persons with asthma, arthritis, or cardiovascular disease (see Table 2). Depression prevalence among persons with diabetes was significantly higher among women and persons living with a disability.

Although a significantly higher depression prevalence among persons with diabetes compared to those without diabetes was not observed, other studies have demonstrated this association [4]. Furthermore, previous studies in Kansas [5] have shown that the prevalence of current depression as assessed using the eight-item Patient Health Questionnaire (PHQ-8) regarding depression symptoms experienced in the previous 2 weeks (not equivalent to depression diagnosed by a doctor, nurse or other health care professional as reported here) was higher among Kansas adults with diabetes compared to those without diabetes. Further examination of these potentially discrepant findings is warranted.

This study is subject to a few limitations. Doctor-diagnosed depressive disorders, asthma, arthritis, CVD and diabetes are self-reported in BRFSS; however, self-reports have been shown to be valid for surveillance purposes [6]. In addition, the findings in this report do not account for persons with undiagnosed depression, asthma, arthritis, CVD or diabetes.

The results presented here support efforts to increase awareness of depression. The treatment of depressive disorders as a part of chronic disease management could improve quality of care and outcomes for patients with chronic medical conditions and co-morbid depression.

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Pregnancy Check Boxes on Death Certificates—Are They Effective in Identifying Pregnancy-Associated Deaths?

(Editor's Note: This article is reprinted from *Member-to-Member*, published by the National Association for Public Health Statistics and Information Systems (NAPHSIS) of which Kansas is a member. Kansas implemented the revised U.S. Birth Certificate in 2005, expanding the amount of information collected on pregnancy-associated mortality. Maryland has had expanded reporting for 10 years.)

Although deaths associated with pregnancy have declined dramatically over the past century in the U.S., maternal mortality rates have shown no improvement in recent years. Maternal deaths, which generally occur among young and apparently healthy women, are often preventable and represent only the tip of the iceberg of maternal morbidity. Therefore, pregnancy mortality remains a public health concern.

In recent years, there has been an effort to focus on "pregnancy-associated" mortality, rather than on the more narrowly defined maternal mortality. A pregnancy-associated death is defined as a death from any cause during pregnancy or within one calendar year of delivery or pregnancy termination, regardless of the duration or anatomical site of the pregnancy. Pregnancy-associated deaths include maternal deaths resulting from causes such hemorrhage, pregnancy-induced hypertension, and embolism, as well as deaths not traditionally considered to be related to pregnancy, such as homicide, suicide, and accidental deaths.

In response to the well-documented problem of underreporting of pregnancy-associated mortality information on death records, the U.S. Standard Certificate of Death was revised in 2003 to include the addition of a question on pregnancy status in the year preceding death. Since a number of jurisdictions have not yet adopted the 2003 revised death certificate, there is no national data on the effectiveness of the pregnancy check box in identifying pregnancy-associated deaths. However, the availability of comprehensive pregnancy-associated data collected from multiple sources in Maryland provided the opportunity to study the effectiveness of the check box in one state. Maryland has had a program in place for enhanced surveillance of pregnancy-associated deaths since 1993, and has been identifying these deaths from numerous sources, including:

- Death records on which a complication of pregnancy is listed as an underlying or contributing cause of death, or the pregnancy check box is marked;
- Linkage of death records of reproductive-age women with corresponding birth and fetal death records;

- Review of medical examiner records for evidence of pregnancy at the time of death, or evidence of a recent pregnancy;
- News articles and obituaries; and
- Reports from local health departments.

Maryland has been collecting detailed pregnancy status on its death certificate since 2001. In addition to a check box asking if a decedent was pregnant in the year preceding death, the certificate includes questions on the outcome of pregnancy and the date of delivery.

Maryland data have shown that even with the inclusion of a check box on the death record, over a third of pregnancy-associated deaths remain unidentified using only the information provided on the death record. Nearly all of these unidentified deaths are among women who died from non-maternal causes (e.g., homicide, suicide, accidental causes, etc.). While the good news is that at least in Maryland, nearly all maternal deaths are now being reported on death records, findings suggest that comprehensive identification of all pregnancy-associated deaths is likely to continue to require the use of additional data sources [1].

A survey conducted by NAPHSIS several years ago indicated that fewer than half of the responding jurisdictions were using additional surveillance techniques to identify pregnancy-associated deaths. In addition, a number of jurisdictions were collecting check box information only on deaths occurring during a shorter postpartum period, rather than for the standard one-year period. Therefore, the reporting of pregnancy-associated deaths by many, if not most jurisdictions, is likely to be incomplete.

What does this say about national data? Two centers within the CDC collect pregnancy mortality data—the National Center for Health Statistics (NCHS), which publishes maternal mortality data, and the National Center for Chronic Disease Prevention and Health Promotion (NCCDPHP) which attempts to obtain a broader range of pregnancy mortality data by asking states to send them copies of all pregnancy-associated death records. The completeness of the maternal mortality data reported by NCHS should improve substantially once all states adopt the revised death certificate. However, similar improvement in the data reported by NCCDPHP is unlikely. Since a large proportion of pregnancy-associated deaths from non-maternal causes cannot be identified through death records alone, and since most states do not have enhanced surveillance methods in place to supplement the information provided on death records, the completeness of the data published by NCCDPHP is not likely to improve substantially even after all jurisdictions adopt the revised certificate. Since at least in Maryland three of the four leading causes of pregnancy-associated death (homicide, accidental death, and substance abuse) are due to non-maternal causes, the accuracy of data published by NCCDPHP is a serious concern.

Pregnancy-associated mortality is still a significant problem in the U.S., and the causes of death are broader than previously believed. Published reports using incomplete national data have led to misconceptions regarding not only the leading causes of death and the magnitude of the problem, but also the timing of death, and the groups at highest risk. While the pregnancy check box is part of the solution to improving the completeness of reporting, data sources in addition to the death record are still needed to identify all deaths. In addition to adopting the revised certificate, jurisdictions should consider implementing enhanced surveillance methods to improve the identification of deaths, such as linkage of records, review of medical examiner data, and review of hospital discharge data. The CDC should continue efforts to improve the collection of pregnancy-associated death data, and care should be taken in forming conclusions based on incomplete data.

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Reference

1. Horon IL and Cheng D. Effectiveness of Pregnancy Check Boxes on Death Certificates in Identifying Pregnancy-Associated Mortality. Public Health Reports 2011:126:195-200.

Kansas Health Matters

The Kansas Partnership for Improving Community Health (KanPICH) plans to launch Kansas Health Matters (www.KansasHealthMatters.org) in January, 2012, culminating two years of work to identify the best approach to support hospital, county health department, and regional community health assessment and community health improvement. KanPICH members include KDHE, Kansas Health Institute, Kansas Hospital Association, Kansas Association for the Medically Underserved, and Kansas Association of Local Health Departments, with funding support from the Kansas Health Foundation and involvement of the University of Kansas and Kansas State University.

Public health agencies in Kansas are in the early stages of preparing for accreditation, a process that evaluates whether the agency can carry out the 10 essential services of public health. Hospitals are required to conduct community health needs assessments under provisions of the Affordable Care Act. While there are some differences between accreditation and hospital needs assessment processes, enough similarities exist that the partnership approach was adopted.

One of KDHE's primary roles in Kansas Health Matters is to provide Kansas public health data. The data will be presented in an entirely new manner for Kansans, dashboards. Dashboards are seen as an efficient way to visually characterize performance and engage an audience in improving performance.

Dashboard information made available to hospitals and health departments will include almost 100 indicators of public health or social determinants. Over 30 social determinants will be made available from national data aggregated to the county level. Over 60 indicators will be comprised of Kansas public health data ranging from death, birth, and Behavioral Risk Factor Surveillance System, to sexually transmitted diseases.

The Kansas public health indicators are considered core public health indicators from a subset of 300 indicators. Core public health indicators should not be considered the definitive list, but rather an over-arching cross section of measures that provides a snapshot of a community's health. After looking at the health indicators, a community may chose to "drill-down" into the public health status by seeking additional information on health or social determinants.

Because of that potential need to "drill-down" into the information, KDHE will continue to maintain existing statistical tools and products. Kansas Information for Communities (KIC), a query tool enabling detailed exploration of health statistics, will be moved to a new platform. KIC FastStats and other features will be continued. Reports and publications, like the Kansas Annual Summary of Vital Statistics, will continue to be prepared. What readers will begin to see is a convergence of statistical products to focus on the core health indicators.

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Announcements

2010 Annual Summary Released

The 2010 Kansas Annual Summary of Vital Statistics is the latest edition of a report released by the Kansas Department of Health and Environment. The report serves as the baseline document used to assess the health of Kansans.

This year's annual summary contains five new tables, and omits one table included in the summaries for previous years:

- Table 26, Live Births by Trimester Prenatal Care Began by Population Group reports the number and percent of women who began prenatal care in each trimester for each population group.
- Table 27, Live Births by Population Group of Mother by Birth Weight in Grams reports the distribution of birth weights (grouped by 500 gram increments) for each population group.
- Table 28, Live Births by Population Group of Mother by Final Route of Delivery reports the number and percent of women delivering vaginally or by cesarean section for each population group.
- Table 39, Total Reported Abortions by Age-Group of Patient by Selected Characteristics, Kansas Residents has the same categories of data as Table 38, but includes only abortions performed for Kansas residents.
- Table 65, External Cause of Death by Injury Matrix Intent and Cause Group Categories
  The Most Popular Baby Names table has been dropped.

Please see the Technical Notes for more details on the new tables.

The report highlights a number of items of interest for 2010:

- Kansas increased in population from 2,818,747 residents in 2009 to 2,853,118 residents in 2010. Since 2010 was a U.S. Census year, the population reported for 2010 was an actual count, while the population reported for 2009 was a U.S. Census Bureau estimate.
- Population changes for the population-density Peer Groups were larger than in previous years, largely because nine Kansas counties were moved to different Peer Groups based on the official population counts in U.S. Census 2010.
- In the past 20 years, population increases of 70.6 percent in residents 45-54 years of age and 61.5 percent in residents 55-64 years of age reflected the aging of the baby boomers.
- In 2010, there were 40,439 live births to Kansas residents, 949 fewer than in 2009.
- Seven (7.1) percent of infants born to Kansas mothers in 2010 had low birth-weights (under 2,500 grams). Low birth-weights were more common for Black non-Hispanic infants (13.5%) than for White non-Hispanic (6.5 %) or for Hispanic (6.3%) infants.
- The percent of Kansas mothers receiving inadequate prenatal care in 2010 (14.2) decreased 4.7 percent from 2009.
- There were 253 infant deaths to Kansas residents in 2010, a decrease of 12.8 percent from 290 infant deaths in 2009.
- The disparity in the infant, neonatal and post neonatal death rates between White non-Hispanics and Black non-Hispanics continues to be a public health concern. The Black non-Hispanic infant death rate in 2010 (11.9 deaths per 1,000 live births) was 2.4 times higher than the rate for White non-Hispanics (4.9).
- Out-of-wedlock births increased slightly, from 37.6 percent in 2009 to 37.7 percent in 2010.

- The Kansas 2010 teen pregnancy rate (23.1 pregnancies per 1,000 female teens) decreased 13.8 percent from 26.8 in 2009.
- Almost half of the abortions performed in Kansas in 2010 were for non-Kansans. The abortion ratio for Kansas residents in 2010 was 104.4 abortions per 1,000 live births, a decrease of 9.6 percent from 115.5 in 2009.
- Heart disease displaced cancer as the leading cause of death in Kansas in 2010, returning to their relative importance before 2009.
- Unintentional injuries were the leading cause of death in 2010 for each of the age groups under 45 years of age. For each of the age groups between 45 and 84, the leading cause of death was cancer; and for ages 85 and above, the leading cause of death was heart disease.

The tables and charts contained in this report represent only a glimpse of the insight that can be gained from the data reported on live births, deaths, stillbirths, marriages, marriage dissolutions (divorce and annulment), and abortions recorded annually. It can be found at http://www.kdheks.gov/bephi/. To obtain more details from the wealth of information about Kansas vital events, please visit Kansas Information for Communities, the Division of Health tool to create specific analyses, at http://kic.kdhe.state.ks.us/kic/. Persons needing additional data can call (785) 296-8627.

Discharge Data Analysis Available for Health Assessment

The Kansas Department of Health and Environment (KDHE) Bureau of Epidemiology and Public Health Informatics (BEPHI) has released its latest report on the most frequent hospital admissions. The report is based on an analysis of community hospital discharge data provided to the state of Kansas by the Kansas Hospital Association.

Knowledge about the most frequent health conditions for which Kansans are discharged from Kansas community hospitals identifies priority populations to inform the initiation of community health assessment activities, design public health programs and develop public health policy. Community health assessment is a process many local health departments and all non-profit hospitals are starting as part of either national health department accreditation or hospitals meeting federal requirements.

As health departments and hospitals start the health assessment process, the report will serve as important data on the 20 most frequently treated conditions, excluding maternity, for the state and for each county. Data comparisons by county can help determine how hospital discharges vary by location. Demographic breakdowns are presented by age group, sex, and race.

Some state level findings include:

- The older the age group, the higher the rate of hospital discharge.
- Females (99.2/1,000 population) have a slightly higher hospitalization rates than males (81.6/1,000 population).
- The three most frequent conditions for which Kansans were discharged from the hospital include psychoses, major joint

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replacement or reattachment of lower extremity and simple pneumonia and pleurisy age 17 or greater with complications.

County level rankings show:

- The three counties with the greatest number of hospital discharges per 1,000 population are Graham (294), Trego (289) and Morton (249) counties.
- The three counties with the highest hospital mean length of stay per 1,000 population are Ness (20.78 days), Edwards, (7.28 days) and Ottawa (6.27 days).
- The three counties with the highest mean age are Decatur (age 73.47), Cheyenne (age 73.46) and Wallace (age 73.44).

The report uses Diagnostic Related Groups (DRGs) and Major Diagnostic Categories (MDCs) to summarize information on causes of hospitalization. DRGs (Version 24) are summary groupings used to determine how much the Centers for Medicare and Medicaid Services pays the hospital for Medicare-covered individual patient care. These groupings are based on primary and other accompanying diagnoses and procedure codes, age, sex, discharge status and the presence of health related complications. MDCs combine DRG summary groupings into more general health categories.

The full report, entitled "Most Frequent Conditions Treated in Kansas Community Hospitals, Excluding - Maternity, The State of Kansas and the Counties, 2007-2009." is available at http://kic.kdhe.state.ks.us/kic/OHA/hcdgb.html.

Questions can be directed to Kanas.Health.Statistics@kdheks.gov or by calling 785-296-8627.

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Census Survey Indicates Kansas Uninsured Rate at Highest Level

Health Policy and Research Solutions (HPRS), a private health policy research company in Kansas, reports recent U.S. Census Bureau's Current Population Survey (CPS) has reached its highest level of the decade while the uninsured rate for children has shown a decline. HPRS, citing CPS data in its recent newsletter, noted that in 2009-2010 the percentage of Kansans without health insurance increased to 13%, the highest rate of the decade, 2000-2010. This percentage climbed from 11.3% in 2005-2006 and 12.7% in 2008-2009. Additional observations on the CPS findings are available in the September 2011 newsletter. HPRS newsletters are available at http://hprsolutionsllc.com/index.html .

Health Policy and Research Solutions