

# Prevention in the Prairies: Tobacco Prevention and Sodium Reduction Initiatives in Kansas

---

Masters of Public Health Field Experience  
Kansas State University

Jacqueline Garvey  
October 9<sup>th</sup>, 2012

# Acknowledgements

- Kansas State University Committee Members
  - Dr. David Renter
  - Dr. Robert Larson
  - Dr. Justin Kastner
- Drs. Brad White, Natalia Cernicchiaro, and David Amrine
- Kansas Department of Health and Environment
  - Dr. Ghazala Perveen

# Outline

- Introduction to Public Health Impacts
- Overview of Tobacco Use around the Country
- Kansas Department of Health and Environment Tobacco Prevention and Cessation Grant
- Overview of Sodium Consumption
- Kansas Department of Health and Environment Sodium Reduction Grant
- Conclusion





# Introduction to Public Health Methods

- Health
  - An ever changing variable in life
- Public Health
  - Examines population as a whole
  - Social Ecological Model (SEM)
- Organizations Working Towards Health
  - World Health Organization (WHO)
  - Centers for Disease Control and Prevention (CDC)
  - Kansas Department of Health and Environment (KDHE)

# Introduction to Public Health Methods

- SEM
  - Also known as the McLeroy's Ecological Model of Health Behavior
  - Health and behavior are influenced by outside factors
  - Multi-disciplinary values
  - Examines various levels at which an individual's health may be impacted
  - Levels include:
    - Intrapersonal
    - Interpersonal
    - Institutional
    - Community
    - Social

# Introduction to Public Health Methods

- WHO
  - Global level
  - Researches all impacts of health
  - Defines health as:

“the state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity”
  - Focusing on joining public health with sustainable development
  - “A healthy environment is a prerequisite for good health”



# Introduction to Public Health Methods

- CDC
  - National Level
  - Funds programs across the country to lower the impact of disease and illness on Americans
    - Arthritis awareness,
    - Overdose prevention,
    - Tobacco control and prevention,
    - And sodium reduction
  - Implemented a National Tobacco Control Program (NTCP) in many states, including Kansas

# Introduction to Public Health Methods

- KDHE
  - Bureau of Health Promotion (BHP)
  - State level
  - Promotes the health of its residents while protecting them from disease, illness, and injury
  - Separates environmental factors from health factors to better concentrate efforts on health
  - The BHP “collects, analyzes and publishes information on many aspects of the health status of Kansas residents. Assessment includes examining trends in health, disease and injury.”



# Introduction to Public Health Methods

- Field Experience
  - Epidemiologist intern
  - Researched and compiled data for two prevention grants: tobacco prevention and cessation, and sodium reduction
  - Both grants exemplify the SEM
  - Tobacco Prevention and Cessation
    - Funded by the Department of Health and Human Services
    - Statewide initiative to prevent new smokers and educate current smokers on ways to quit
  - Sodium Reduction
    - Funded by the CDC
    - Cross-sectional study
    - Baseline sodium consumption in Shawnee County

# Tobacco Prevention and Cessation

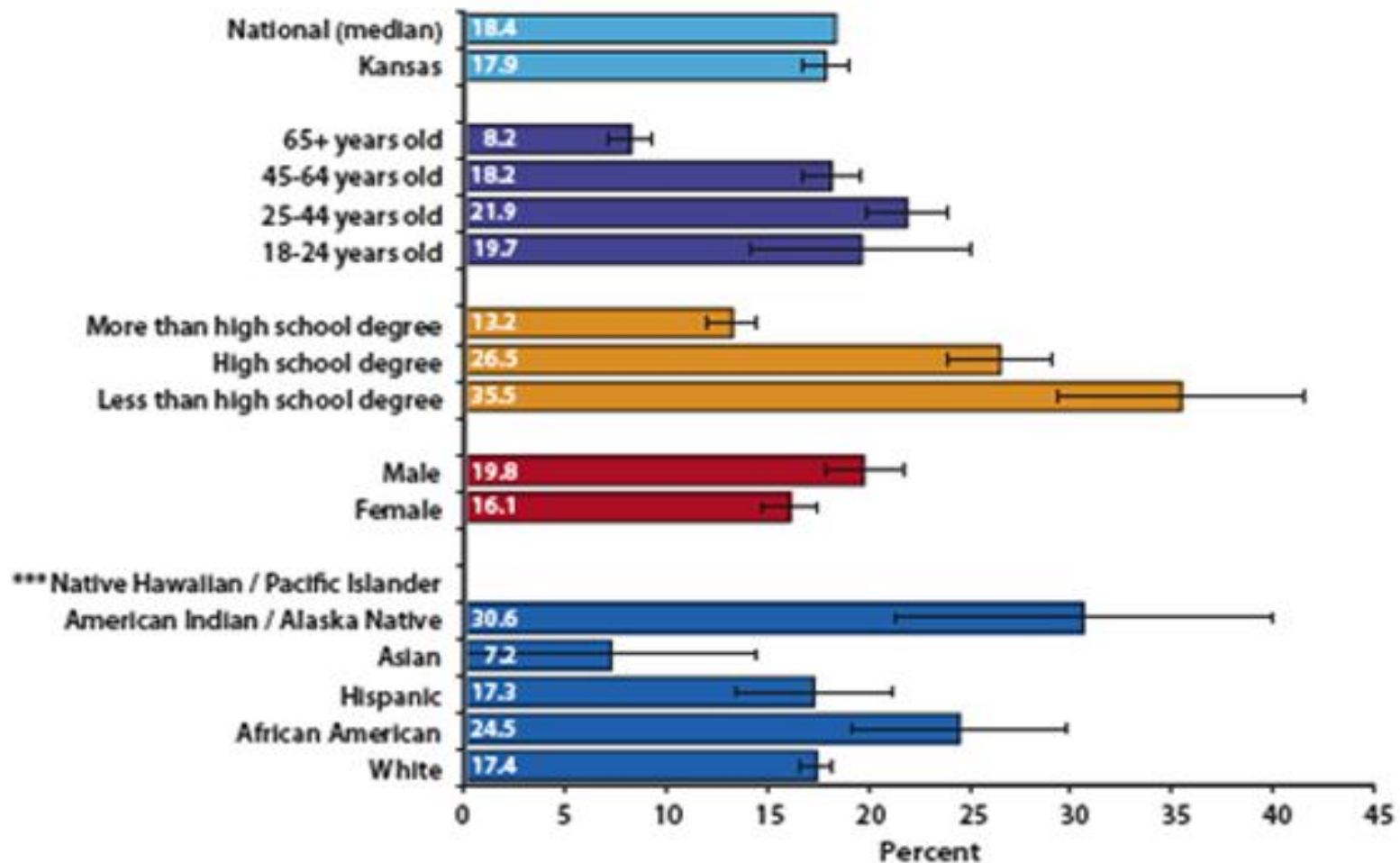
- Introduction

- Leading cause of disease and illness
- Most preventable cause of death
- All age groups are affected by tobacco in some form
- A recreational drug that is the root of many diseases

- Statistics

- Related healthcare costs exceed \$96 billion each year
- Secondhand smoke causes 1 in 5 deaths
- In Kansas, 18% of the adult population are smokers and 12% of the youth population are smokers

# Current Smoking Prevalence Among Adults by Demographic Characteristics



\*\*\* Data not shown because sample size is less than 50.

Source: BRFSS, 2007-2008



# Tobacco Prevention and Cessation

- National Tobacco Control Program
  - Conducted by the CDC
  - Across all fifty states and eight territories
  - Encompasses four goals:
    1. “To eliminate exposure to secondhand smoke,
    2. To promote quitting among adults and young people,
    3. To prevent initiation among youth,
    4. And to identify and eliminate disparities among populations

# Tobacco Prevention and Cessation

- Prevention Programs
  - In Oregon, the state health department is focusing on prevention in lower income individuals and the mentally disabled
    - People with lower income and lower education are three times more likely to smoke, in the state
    - Now focusing efforts on lower income school districts
    - Enforced three new policy changes regarding tobacco use in mental health facilities; few policies were already in place

# Tobacco Prevention and Cessation

- Chronic Disease Risk Reduction (CDRR) in the KDHE
  - Provides funding and technical assistance to Kansas communities
  - From June 2010 to July 2011, the CDRR worked to reduce chronic disease through evidence-based strategies that impact tobacco use
  - Each county or group of counties proposed initiatives to reduce tobacco use in their own community
  - Promotes community progress in three stages:
    1. Planning
    2. Capacity Building
    3. Sustainability and maintenance



# Tobacco Prevention and Cessation

- CDRR in the KDHE
  - In the state fiscal year, Kansas was given \$1,277,752 in federal grants to be used on tobacco control
  - Grantees were required to provide at least 25% of matching funds
  - Grantees raised \$544,077; producing a total of \$1,821,829
  - Thirty-seven approved grantee applications
  - Produced 96 initiatives in the state
  - My responsibility was to compile the grantee reviews, write the final report, and contact grantees

# Tobacco Prevention and Cessation

- Media, Access, Point of Purchase, Price, and Social Services (MAPPS) Strategy
  - CDC evidence-based strategies
  - Each grantee used these strategies within their own initiatives
  - Grantees were allowed to propose more than one initiative

# Tobacco Prevention and Cessation

- First Stage: “Planning”
  - Grantees formed functioning, sector-diversified coalitions
  - Provided a snapshot of the community needs
  - Initiatives were compliant with CDC’s Community Health and Group Evaluation (CHANGE) tool
  - Kansas is a leader in the CHANGE program
  - Vital to accomplish a successful planning stage in order to advance to next steps



# Change Tool Status of Grantees in Kansas

County	Phase	Steps 1-3 *	Steps 4-6*	Steps 7 & 8 *
Allen	Capacity			X
Cherokee	Planning		X	
Cheyenne	Planning			X
Cowley	Planning	X		
Crawford	Planning		X	
Douglas	Capacity			X
Edwards	Capacity		X	
Ellsworth	Planning	X		
Finney	Implementation		X	
Ford/Gray	Capacity			X
Geary	Planning		X	
Grant	Planning	X		
Harvey	Capacity		X	
Jewell	Planning	X		
Johnson	Implementation		X	
Lane	Planning		X	
Lyons	Capacity		X	
Meade	Planning		X	
Miami	Capacity	X		
Mitchell	Capacity		X	
NEK	Implementation		X	
Norton	Capacity		X	
Ottawa	Capacity	X		
Pottawatomie	Capacity		X	
Reno	Capacity	X		
Republic	Planning		X	
Rooks	Planning			X
Russell	Planning		X	
Saline	Implementation	X		
Seward	Planning		X	
Sherman	Planning	X		
Shawnee	Planning	X		
Thomas	Capacity			X
Washington	Planning	X		

Source: BRFSS,  
2010-2011

# Tobacco Prevention and Cessation

- Second Stage: “Capacity Building”
  - Grantees must progress through planning stage
  - Focuses on community-based prevention programs
  - Grantees may choose one of three categories:
    1. Prevent smoking among young people
    2. Eliminate nonsmoker’s exposure to secondhand smoke
    3. Promote quitting

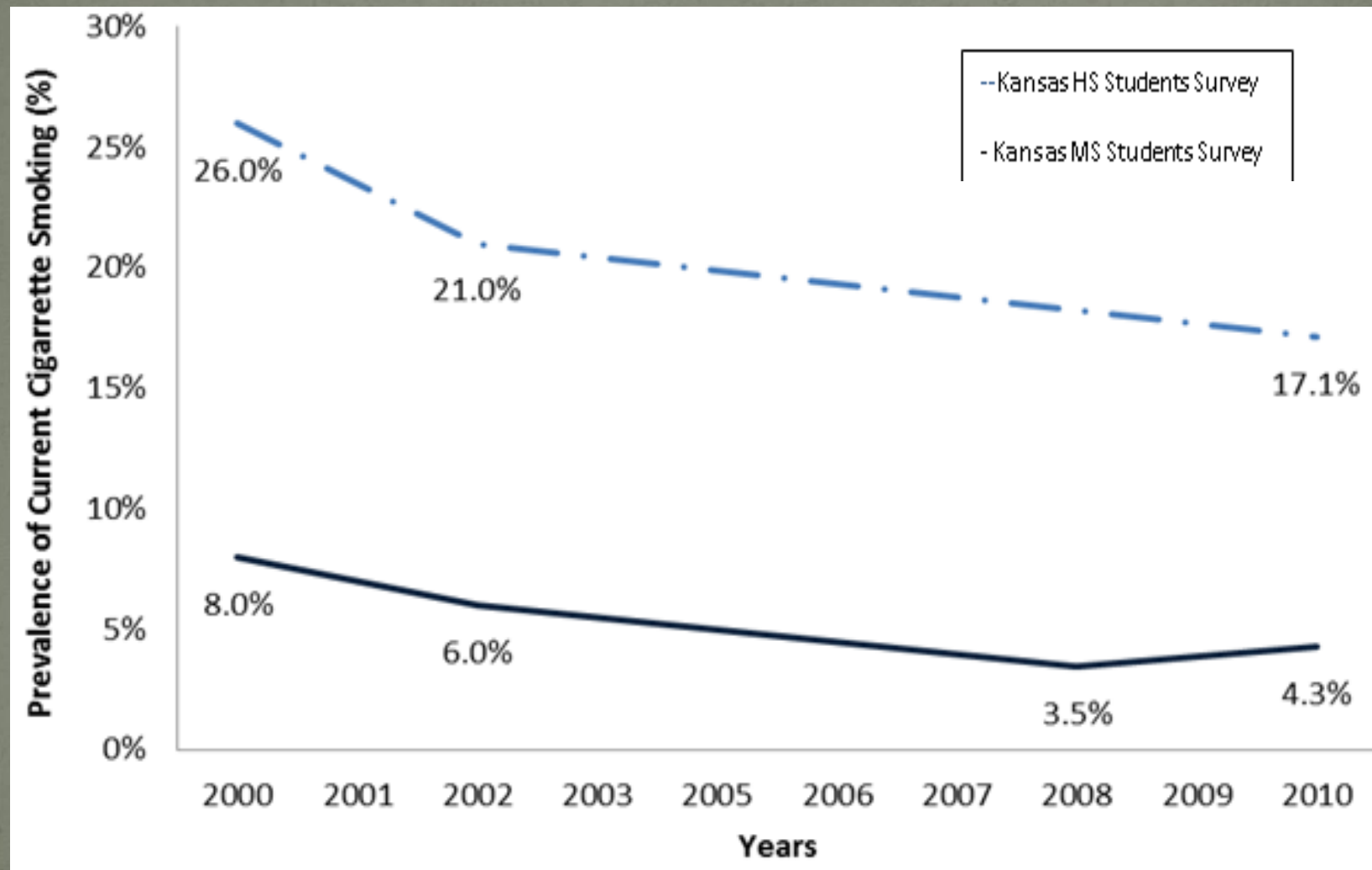
# Tobacco Prevention and Cessation

- Successful Programs

- In Osage County, grantees utilized the Respect Thy Neighbor toolkit
  - Example of grassroots connections
- In Northeast Region, seven school districts and one community college became tobacco-free
- In Cowley County, grantees reported a 93% tobacco-free compliance rate among retailers
- In Ottawa County, 33% of schools have implemented a curriculum change to increase awareness of devastating effects of tobacco



# Smoking Prevalence Among Kansas High School and Middle School Students, A Youth Tobacco Survey



Source: BRFSS, 2010-2011

# Tobacco Prevention and Cessation

- Kansas Indoor Clean Air Act
  - Prohibited smoking in restaurants, bars, taxicabs, lobbies, and places of employment
  - Purpose to “protect the public health by reducing the exposure to secondhand smoke in public places and places of employment”
  - Prime example of capacity building phase; grantees influencing lawmakers

# Tobacco Prevention and Cessation

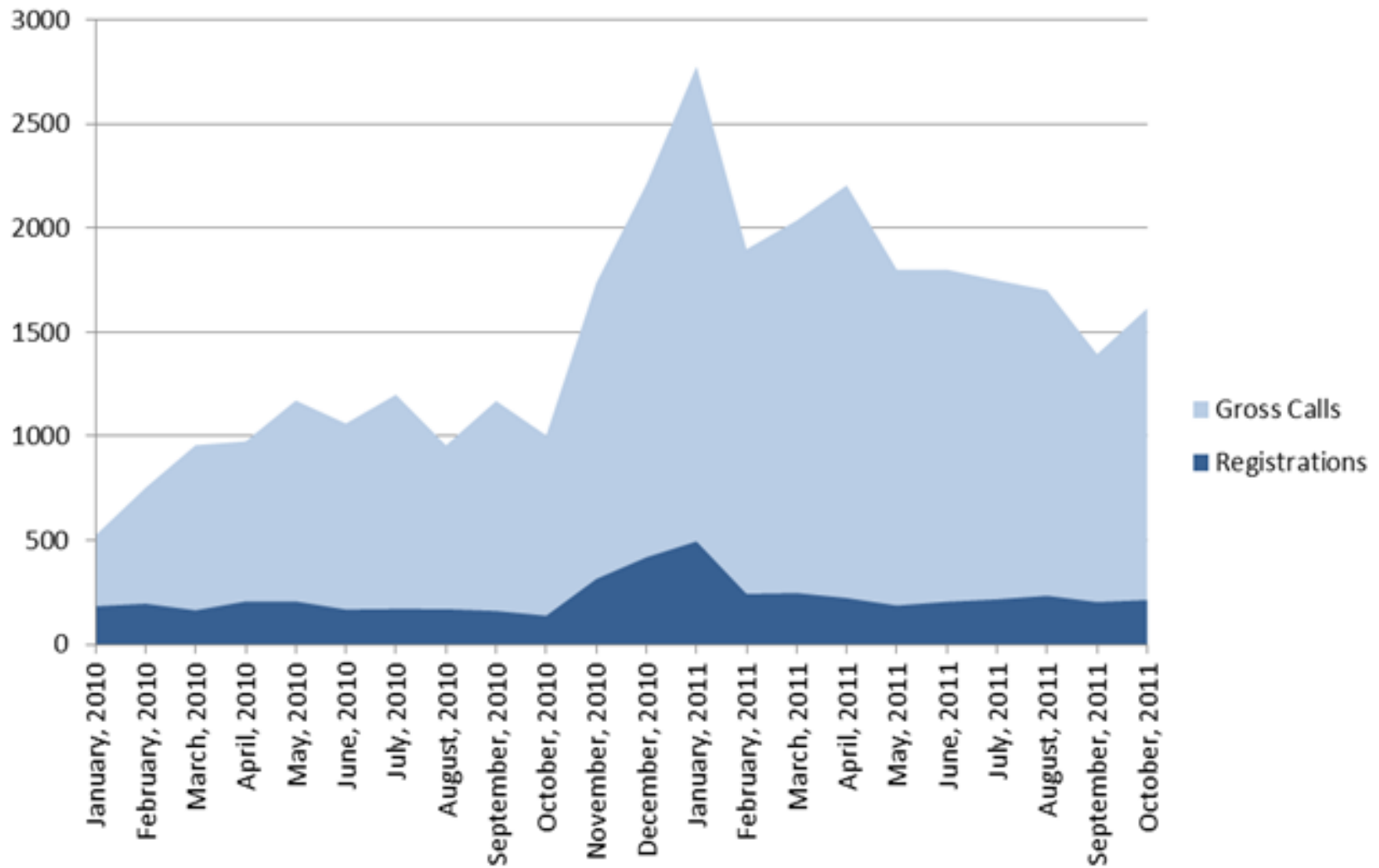
- Final Stage: “Sustainability and Maintenance”
  - Focuses on reducing current tobacco use and using cessation programs
  - Keep previous users from relapsing
  - Sustain tobacco-free communities



# Tobacco Prevention and Cessation

- Successful Programs
  - Adding tobacco cessation programs to insurance benefits
    - Grantees educated business owners on the benefits of adding tobacco cessation programs
  - Physician participation
  - Kansas Quitline
    - Many grantees used this approach to reach many individuals
  - Walgreens “Take Care” Program
    - Promoted cessation and referred to Quitline
    - Reached individuals who might not have insurance

# Kansas Tobacco Quitline Gross Calls and Registration by Month, Jan. 2010- Oct. 2011



Source: BRFSS, 2010-2011

# Tobacco Prevention and Cessation

- Concluding Thoughts
  - Overall, a very successful grant
  - Advantageous to allow each grantee to propose their own initiatives
  - Imperative to continue tobacco-free education of young people
  - Need to continue to reduce secondhand smoke
  - Emphasize quitting programs
  - Tobacco is a major issue in the state; initiatives need to continue



# Tobacco Prevention and Cessation

- My Contribution
  - Contact grantees that had yet to submit final outcomes
  - Compile all grantee reports
  - Consult with state epidemiologists on outcomes
  - Compose final report for KDHE



# Sodium Reduction

- Introduction
  - Sodium Chloride
    - Commonly known as table salt
  - Can be used as a:
    - Preservative,
    - Flavor enhancer,
    - Additive to medications



# Sodium Reduction

- Statistics
  - The Institute of Medicine advises that the maximum intake of a healthy individual should not exceed 2,300 mg
    - The minimum amount needed is between 180-500 mg
  - Recommended daily intake is 1,500 mg
    - Half of all Americans should adhere to this recommendation
  - Up to 75% of sodium intake can be attributed to processed foods
  - Directly related to heart disease



# Sodium Reduction

- Current Sodium Amounts in Diets
  - Due to versatility, sodium can be found in many products
  - Average sodium consumption is well above the maximum amount of 2,300 mg
  - Individuals with a suppressed immune system should be cautious of high levels
  - The following groups should adamantly adhere to lowered intake levels:
    - African Americans
    - Diabetics
    - Individuals over the age of 51
    - Chronic kidney disease sufferers

# Sodium Reduction

- “While nearly everyone benefits from reducing their sodium intake, the blood pressure of individuals, most at risk, tends to be even more responsive to the blood pressure-raising effects of sodium than others; therefore, they should reduce their intake to 1,500 mg per day.”

# Sodium Reduction

- Steps Towards Reduction
  - National Milk Producers Federation (NMPF)
  - School cafeteria lunches
  - “2011 Sodium Reduction in Communities –Shawnee County Survey”



# Sodium Reduction

- NMPF
  - Started in New York
  - Began with reduction of salt in cheese and cheese products
  - Researching ways to reduce salt levels in dairy without compromising taste
- School Cafeterias
  - Sodium reduction at a young age can produce a drastic reduction in future use
  - Vermont and Alabama have enacted initiatives regarding sodium reduction in lunch meals and vending machines
    - Both states are requiring less than 350 mg in school meals
  - More states should follow suit

# Sodium Reduction

- “2011 Sodium Reduction in Communities –Shawnee County Survey”
  - CDC funded program
  - Health risk study to better understand individual consumption of sodium of 800 participants
  - Provided a snapshot of sodium consumption in county
  - Program sought to achieve:
    1. Sodium intake calculations within the county
    2. Education of participants regarding the hazards of high sodium consumption
    3. Lifestyle change recommendations

# Sodium Reduction

- “2011 Sodium Reduction in Communities –Shawnee County Survey”
  - Consisted of three steps:
    1. Dietary and health questionnaire,
    2. Minor physical,
    3. And a 24-hour dietary recall
- Dietary recall program automatically calculated sodium intake of each participant
  - Program did not account for added table salt
- Participants were then given information of the health risks of high sodium intake and information on reducing it



# Sodium Reduction

- Health Risks Due to High Sodium Consumption
  - High blood pressure
    - Nation's leading cause of death
  - Hypertension
    - Effects 1 in 3 Americans
  - Diabetes
  - Obesity
  - Kidney Issues

# Sodium Reduction

- Dose-Dependent Relationship
  - Reduce the average amount to sodium, prevent 16 million cases of high blood pressure in the country
    - Save \$26 million in healthcare costs

# Sodium Reduction

- Concluding Thoughts
  - Necessary evil
    - Not looking to extinguish sodium from diets
  - Education is key
    - Consumers need to be aware of its presence
  - Producers need to make major steps in reducing amounts in prepackaged foods
  - A gradual cut back of sodium is needed
  - Health risks due to sodium are devastating
  - Public health officials need to acknowledge this threat



# Sodium Reduction

- My Contributions
  - Researched similar programs
  - Contacted and interviewed participants
  - Performed dietary recalls
  - Taught others to use program



# Conclusion and Summary

- Reducing Illness of Any Kind is the Main Goal
  - Tobacco and sodium initiatives are two examples of ways to encourage a healthy way of life
  - Education is key for both initiatives
- Tobacco Prevention and Cessation
  - Great strides have been made in the past 50 years to reduce tobacco use
  - Public bans on smoking are leading to a reduction of tobacco related illnesses
  - Continued education on secondhand smoke and smokeless tobacco needs to be provided
  - Kansas is one of the leading states in tobacco awareness and should continue to be an example

# Conclusion and Summary

- Sodium Reduction
  - A conscious reduction of sodium needs to be made
  - Initial steps towards reduction need to be continued
  - Local and state governments should influence producers to reduce sodium levels in food
  - More surveys similar to Shawnee County's need to be performed



# Conclusion and Summary

- Field Experience
  - Real world experience
  - Experience with CDC funded grants
  - Taught by state health epidemiologists
  - Learned how to propose both prevention and reduction programs
  - Able to experience the chronic disease aspect of public health

# Questions?

- Thank you for your time.

# References

- Drach LL, Morris D, Cushing C, Romoli C, Harris RL. Promoting smoke-free environments and tobacco cessation in residential treatment facilities for mental health and addictions, Oregon, 2010. [Erratum appears in Prev Chronic Dis 2012;9. [http://www.cdc.gov/pcd/issues/2012/12\\_0052.htm](http://www.cdc.gov/pcd/issues/2012/12_0052.htm).] Prev Chronic Dis 2012;9:110080.
- He FJ, MacGregor GA. A comprehensive review on salt and health and current experience of worldwide salt reduction programmes. J Hum Hypertens 2008. Page 3
- Heron MP, Hoyert DL, Murphy SL, Xu JQ, Kochanek KD, Tejada-Vera B. Deaths: Final data for 2006. National vital statistics reports; Vol 57 No 14. Hyattsville, MD:
- National Center for Health Statistics; 2009, Page 5
- Gunn, J., N. Blair, M. Cogswell, R. Merritt, D. Labarthe, C. Curtis, J. Fasano, A. Neuwelt, and T. Popovic. 2012. CDC Grand Rounds: Dietary Sodium Reduction - Time for Choice. MMWR. Morbidity and Mortality Weekly Report February 10, 89-91. <http://www.proquest.com.er.lib.k-state.edu/>
- Law MR, Frost CD, Wald NJ. By how much does dietary salt reduction lower blood pressure? I—Analysis of observation data among populations. BMJ 1991;302:811-5.
- Mattes RD, Donnelly, D. Relative contributions of dietary-sodium sources. J Am Coll Nutr.1991 Aug;10(4):383-93.
- McLeroy, K.R., Bibeau, D., Steckler, A., & Glanz, K. (1988). An ecological perspective on health promotion programs. Health Education Quarterly, 15(4), 351-377. doi: 10.1177/109019818801500401
- Moshfegh, A., J. Holden, M. Cogswell, E. Kuklina, S. Patel, J. Gunn, C. Gillespie, Y. Hong, R. Merritt, and D. Galuska. 2012. Vital Signs: Food Categories Contributing the Most to Sodium Consumption - United States, 2007-2008. MMWR. Morbidity and Mortality Weekly Report February 10, 92-98. <http://www.proquest.com.er.lib.k-state.edu/> (accessed February 29, 2012).
- Praveen, G et al., “2011 Sodium Reduction in Communities—Shawnee County Survey,” Centers for Disease Control Health Risk Survey. 2011



# References

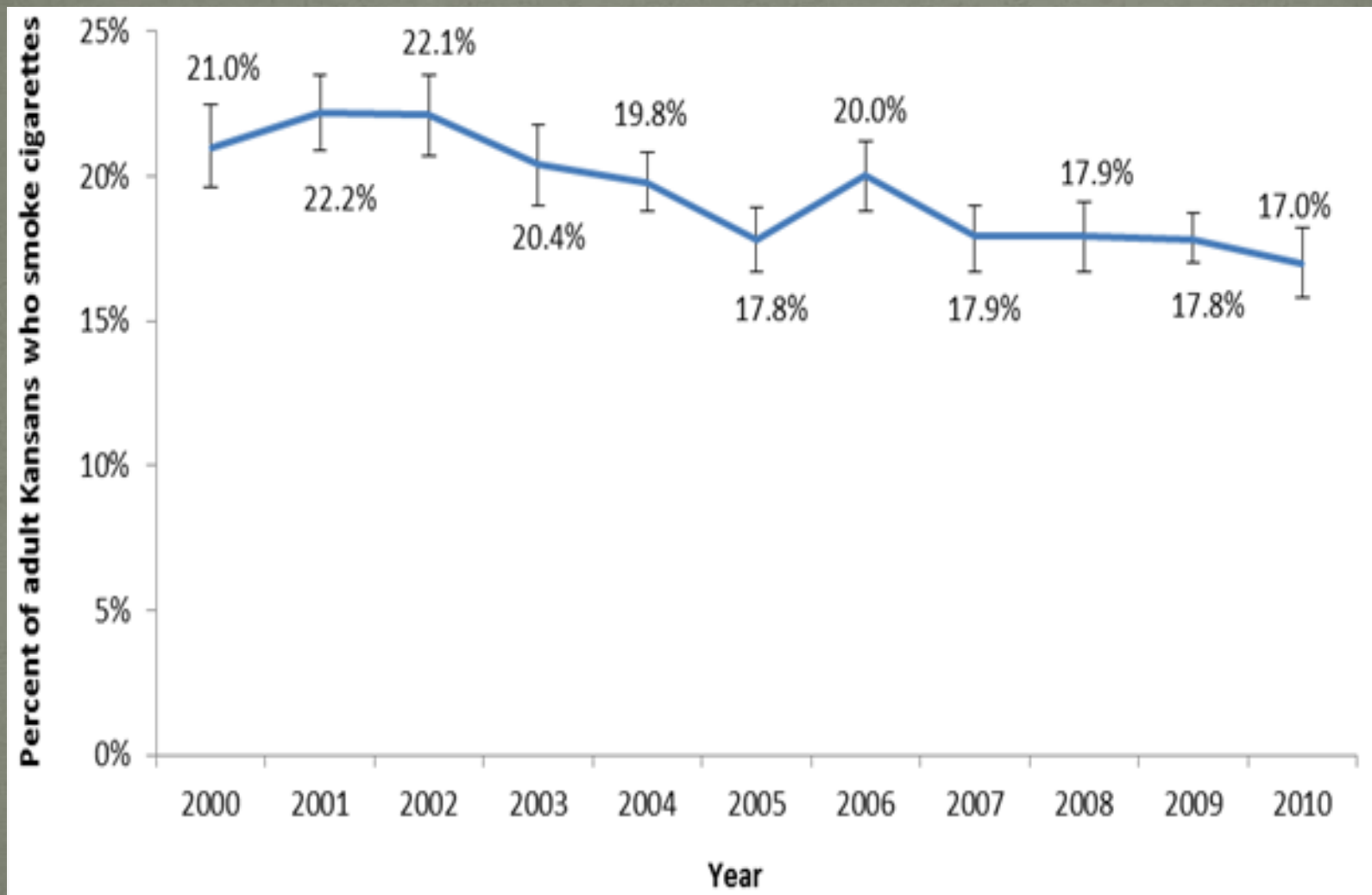
- Stumbo, P., R. Weiss, Newman, J. Pennington, K. Tucker, P. Wiesenfeld, A. Illner, D. Klurfeld, and J. Kaput. 2010. Web-Enabled and Improved Software Tools and Data Are Needed to Measure Nutrient Intakes and Physical Activity for Personalized Health Research. *The Journal of Nutrition* 140, no. 12, (December 1): 2104-15. <http://www.proquest.com.er.lib.k-state.edu/> (accessed March 12, 2012).
- \_\_\_\_\_. "CDC Awards \$1.9 Million for State and Local Sodium Reduction Initiatives." Centers for Disease Control and Prevention. Accessed July 02, 2012. <http://www.cdc.gov/media/pressrel/2010/r101001.html>.
- \_\_\_\_\_. Centers for Disease Control and Prevention. Centers for Disease Control and Prevention, 10 Apr. 2012. Web. 02 July 2012. <[http://www.cdc.gov/tobacco/basic\\_information/index.htm](http://www.cdc.gov/tobacco/basic_information/index.htm)>.
- \_\_\_\_\_. "Chronic Disease Risk Reduction." Kansas Department of Health and Environment: Aid to Local Agencies Document Library. N.p., n.d. Web. 02 July 2012. <[http://www.kdheks.gov/doc\\_lib/ChronicDiseaseRiskReduction.html](http://www.kdheks.gov/doc_lib/ChronicDiseaseRiskReduction.html)>.
- \_\_\_\_\_. "Community Health Assessment AND Group Evaluation (CHANGE): Building a Foundation of Knowledge to Prioritize Community Needs." Centers for Disease Control and Prevention. February 07, 2012. Accessed July 02, 2012. <http://www.cdc.gov/healthycommunitiesprogram/tools/change.htm>.
- \_\_\_\_\_. "Economic Facts About U.S. Tobacco Production and Use." Centers for Disease Control and Prevention. Centers for Disease Control and Prevention, 25 Apr. 2012. Web. 17 July 2012. <[http://www.cdc.gov/tobacco/data\\_statistics/fact\\_sheets/economics/econ\\_facts/index.htm](http://www.cdc.gov/tobacco/data_statistics/fact_sheets/economics/econ_facts/index.htm)>.
- \_\_\_\_\_. Institute of Medicine. Dietary reference intakes for water, potassium, sodium chloride, and sulfate. Washington, DC: National Academies Press; 2004, page 1
- \_\_\_\_\_. "Kansas State Highlights." Centers for Disease Control and Prevention. Centers for Disease Control and Prevention, 24 Feb. 2011. Web. 02 July 2012. <[http://www.cdc.gov/tobacco/data\\_statistics/state\\_data/state\\_highlights/2010/states/kansas/index.htm](http://www.cdc.gov/tobacco/data_statistics/state_data/state_highlights/2010/states/kansas/index.htm)>.
- \_\_\_\_\_. "Kansas Smoke-Free: Frequently Asked Questions." Kansas Smoke-Free: Frequently Asked Questions. N.p., n.d. Web. 18 June 2012. <http://www.ksstrokefree.org/FAQ.html>
- \_\_\_\_\_. National Milk Producers Federation. "Sodium Reduction Initiatives." Accessed July 02, 2012. [http://nmpf.org/washington\\_watch/nutrition/sodium](http://nmpf.org/washington_watch/nutrition/sodium).
- \_\_\_\_\_. "National Tobacco Control Program." Centers for Disease Control and Prevention. Centers for Disease Control and Prevention, 15 Mar. 2012. Web. 02 July 2012
- \_\_\_\_\_. NHANES 2003-2006

# References

- \_\_\_\_\_ NINE IN 10 U.S. ADULTS GET TOO MUCH SODIUM EVERY DAY. 2012. US Fed News Service, Including US State News, February 8, <http://www.proquest.com.er.lib.k-state.edu/> (accessed February 29, 2012), 2-5
- \_\_\_\_\_ Nutrition Standards in the National School Lunch and School Breakfast Programs. 2012. The Federal Register / FIND January 26, 4088. <http://www.proquest.com.er.lib.k-state.edu/> (accessed March 1, 2012), 1-3
- \_\_\_\_\_ "Our Mission." Kansas Department of Health & Environment: Division of Public Health -. N.p., n.d. Web. 02 July 2012. [https://www.kdheks.gov/health/our\\_mission.html](https://www.kdheks.gov/health/our_mission.html)
- \_\_\_\_\_ Preamble to the Constitution of the World Health Organization as adopted by the International Health Conference, New York, 19-22 June, 1946; signed on 22 July 1946 by the representatives of 61 States (Official Records of the World Health Organization, no. 2, p. 100) and entered into force on 7 April 1948
- \_\_\_\_\_ "Sodium (Salt or Sodium Chloride)." Sodium (Salt or Sodium Chloride). N.p., n.d. Web. 02 July 2012. <[http://www.heart.org/HEARTORG/GettingHealthy/NutritionCenter/HealthyDietGoals/Sodium-Salt-or-Sodium-Chloride\\_UCM\\_303290\\_Article.jsp](http://www.heart.org/HEARTORG/GettingHealthy/NutritionCenter/HealthyDietGoals/Sodium-Salt-or-Sodium-Chloride_UCM_303290_Article.jsp)>.
- \_\_\_\_\_ "Sodium Reduction." Centers for Disease Control and Prevention. April 13, 2012. Accessed July 02, 2012. [http://www.cdc.gov/phlp/winnable/sodium\\_reduction.html](http://www.cdc.gov/phlp/winnable/sodium_reduction.html).
- \_\_\_\_\_ "The Future We Want: A Healthier Planet." WHO. N.p., 19 June 2012. Web. 01 July 2012. <[http://www.who.int/mediacentre/news/statements/2012/r1020\\_20120619/en/index.html](http://www.who.int/mediacentre/news/statements/2012/r1020_20120619/en/index.html)>.
- \_\_\_\_\_ "THE KANSAS YOUTH TOBACCO SURVEY DATA HIGHLIGHTS." Kansas Tobacco Use Prevention Program. Accessed July 02, 2012. [http://www.kdheks.gov/tobacco/download/YTS2010\\_FactSheet.pdf](http://www.kdheks.gov/tobacco/download/YTS2010_FactSheet.pdf)
- \_\_\_\_\_ Title 3--The President - American Heart Month, 2011 - By the President of the United States of America. 2011. Federal Government Documents and Publications February 3, Page 2 <http://www.proquest.com.er.lib.k-state.edu/> (accessed March 6, 2012).
- \_\_\_\_\_ "Tobacco Control Integration Project (TCIP) | Tobacco Prevention." Tobacco Control Integration Project (TCIP) | Tobacco Prevention. N.p., n.d. Web. 02 July 2012. <http://public.health.oregon.gov/PreventionWellness/TobaccoPrevention/Pages/tcip.asp>.
- DOI: <http://dx.doi.org/10.5888/pcd9.u0089>
- \_\_\_\_\_ U.S. Department of Agriculture and U.S. Department of Health and Human Services. Dietary Guidelines for Americans 2010. 7th edition. Washington DC: U.S. Government Printing Office. 2010, pages 21-24
- \_\_\_\_\_ Vital signs: prevalence, treatment, and control of hypertension - United States, 1999-2002 and 2005-2008. Centers for Disease Control and Prevention MMWR 2011;60:103-8



# Percent of Adult Kansans Who Currently Smoke Cigarettes



Source: BRFSS, 2007-2008