

**Medical College of Wisconsin Master of Public Health Program
PUBLIC HEALTH STUDENT WRITING TUTORIAL**

SAMPLE INTRODUCTION #1

The purpose of this paper is to examine the demographics of dental service providers and their relationship to the rural and underserved populations on a state and national level. The 2000 Surgeon General's *Report on America's Oral Health* states that while dental health for most Americans has improved significantly since the 1960's, access to care for many segments of the population is a serious problem. According to the report, tooth decay is the single most common chronic childhood disease as well as the most preventable.¹ Although the prevalence of tooth decay has declined, it is still a problem among the low income and ethnic minority groups. Nearly 80% of dental caries occur among 25% of children, most of whom are from lower income families.² The CDC's Division of Oral Health and the Association of State and Territorial Dental Directors have developed the National Oral Health Surveillance System to monitor oral disease, water fluoridation, and the delivery of oral health care on a national and state level. With the assistance of the Council of State and Territorial Epidemiologists and Chronic Disease Directors a list of surveillance indicators for oral health was determined.³ These indicators allow for standardized reporting and monitoring of dental conditions for equal comparisons of data. A report from the General Accounting Office (GAO) shows that key dental health indicators of untreated tooth decay, reduced work hours due to dental pain, and tooth loss are significantly higher in the low income and rural populations.⁴ The incidence of caries and untreated decay varies among selected populations of children in the United States, ranging from 72% untreated

¹ Oral Health in America: A Report of the Surgeon General. Department of Health and Human Services, Washington, DC, 2000. Available at www.surgeongeneral.gov/library/oralhealth.

² Ibid.

³ National Oral Health Surveillance System. Available at www.cdc.gov/nohss/about.htm.

⁴ United States General Accounting Office. Oral Health – Factors Contributing to Low Use of Dental Services by Low-Income Populations. Available at: dhs.wisconsin.gov/health/Oral_Health/taskforce/pdf/gaoaccessstudy.pdf.

decay in the American Indian population to 39% in the African American population, as compared to 21% in the white population. (See appendix 1.) The adult population demonstrates the same disparity in untreated dental caries as the children but at a much higher rate. (See appendix 2.) For all age groups, the individuals from poor families are more likely to have untreated caries than those living above the poverty level. People living in rural areas also have a higher oral disease burden because of difficulties in accessing preventive and treatment services.⁵ Figures from 1996 show 28% of the rural population having a dental visit compared to 56% in the higher income groups.⁶

The data available shows access to oral health care in the State of Wisconsin is better than the national averages.⁷ Wisconsin is predominantly a rural state with a population of approximately 5.3 million people. The estimated poverty rate is 9.2% for all ages and 14.3 percent for children 0-17 as compared to a national average of 19.9%.⁸ In a report published by the Wisconsin Dental Association *Supply and Demand for Dental Services: Wisconsin, 2010-2020*, the population statistics show that the smaller rural counties are poorer, have a much larger percentage of people who are Medicaid eligible, have a much lower cost of living and are in poor oral health relative to people in the larger counties.⁹ A 2009 Wisconsin Department of Health Services survey for the Head Start program indicates that of the children enrolled in the program, 36% had previous tooth decay, 26% had untreated decay, and 27% needed urgent dental care.¹⁰

⁵ Centers for Disease Control and Prevention. *The Burden of Oral Disease: Tool for Creating State Documents*. Atlanta: U.S. Department of Health and Human Services; 2005. Available at: <http://www.cdc.gov/oralhealth/library/burdenbook/>.

⁶ GAO, *opcit.*

⁷ Oral Health resources. National Center for Disease Prevention and Health Promotion. Retrieved 2/10/10 at <http://apps.nccd.cdc.gov/synopses/NatTrendTableV.asp>.

⁸ WI DHFS-DPH, MCH Title V Block Grant Application 2003, SD5.6-13. Available at: www.dhs.wis.gov/publication.

⁹ Beazoglou, Tryfon, Bailit, Howard, et al. Report to the Wisconsin Dental Association – *Supply and Demand for Dental Services: Wisconsin 2010-2020*. Available at: www.wda.org.

¹⁰ Healthy Smiles for a Healthy Head Start Survey. Wisconsin Department of Health Services, Madison, WI, 2009.

The Northern counties in Wisconsin have higher rates of oral disease than other parts of the state with 46.1% of children screened in Northern Wisconsin having untreated decay – a significantly higher percentage than any other region.¹¹

The State of Wisconsin is progressive when it comes to programs promoting access to dental care. Risk surveillance programs targeted for pregnant women, early childhood, school screenings, sealant placement, fluoridation, and an active Medical Assistance (MA) program for dental insurance coverage would seem to reduce the disparities that exist in dental health delivery. While Wisconsin statistics show that 98% of the children 19 years and younger below the federal poverty level are covered for dental insurance, they also show that fewer than one in four saw a dentist in 2007, leaving more than 300,000 insurance covered children at risk.¹² New initiatives to eliminate disparities will be explored along with factors associated with increased access to dental care.

¹¹ Wisconsin Department of Health and Family Services, Overview of Children's Health in Wisconsin, Data Collection Report, 2002. Retrieved 2/10/10 at: <http://dhs.wisconsin.gov/publications/P4/P40002.pdf>.

¹² CDC NOHSS. State Oral Health Profile – Wisconsin. Available at:<http://apps.nccd.cdc.gov/nohss/bystate.asp?stateid=55>.

**Medical College of Wisconsin Master of Public Health Program
PUBLIC HEALTH STUDENT WRITING TUTORIAL**

SAMPLE INTRODUCTION #2

Hepatitis B remains a significant public health problem. Although the US prevalence is estimated at less than one percent, an estimate of infected individuals in the US ranges from 1.25 to 2 million people, with the highest rates of infection occurring in young adults ranging in age from 25 to 39 years.ⁱ Approximately 43,000 new infections occur annually. Additionally, 3,000 deaths occur on a yearly basis as a result of disease associated with chronic hepatitis B infection.ⁱⁱ

Medical personnel are commonly exposed to bodily fluids that are capable of carrying the hepatitis virus; these workers can be at risk for infection from this accidental exposure, and 5-10% of these exposed workers become chronically infected.^{iii,iv,v} The hepatitis B vaccine first became available in 1981. However, it was not widely used until the introduction of the recombinant form in 1986. This vaccine offers a significant opportunity to reduce the risk of transmission to healthcare workers, and in fact has led to a marked reduction in new disease in this population since its introduction, with the number of occupational hepatitis B infections in the United States falling from 10,000 in 1983 to only 400 in 2002.^{vi}

The hepatitis B vaccine immune response lasts for many years, even if a titer obtained by routine laboratory methods is no longer measurable. No infection has ever been documented in known exposures for persons with a history of immunity even if current measures do not document such immunity. For this reason, a post-immunization titer should be drawn to determine if an immune

response has been elicited. This knowledge will help guide the clinical management in an attempt to obtain an immune response as well as in the event of a future exposure.^{vii}

Additionally, this information will help avoid unnecessary post-exposure treatment or testing.

The introduction of antibody testing for hepatitis B and the subsequent availability of vaccination for the disease has created the opportunity to eliminate the risk of occupational illness resulting from accidental exposure to this virus. The introduction of the OSHA Bloodborne Pathogens Standard in 1991 led to a reduction in the risk of exposures to workers in the health care industry, in general.^{viii} Additional measures added in 2001 as a response to the Needlestick Safety and Prevention Act have led to further reductions, with the medical field having a significant decrease in new occupational hepatitis B infections. The American Dental Association and the Centers for Disease Control and Prevention developed similar guidelines specifically for the dental industry in 1993, with updated recommendations published in 2003.^{ix,x} Many of these recommendations and tools for implementing them are available online at the CDC and ADA websites as well as through many state dental association websites, such as that of the California Dental Association. The OSHA and state regulations attempting to address this risk have met with variable success.

The number of exposures has successfully declined by requiring that the vaccine be offered to at-risk workers and requiring engineering controls to reduce the number of needle sticks that may transmit the disease.^{xi} The majority of medical workers in the United States are affiliated with a hospital, and hospitals have the administrative infrastructure in place to assure appropriate training and to offer the hepatitis B vaccine. As a result, most of these workers have received the

hepatitis B vaccine and are presumed to be immune.

Workers in dentistry, however, are usually located in smaller offices, and they are not closely affiliated with any particular centralized medical system. Therefore, without the direct institutional oversight enjoyed by many medical workers, dentists and oral surgeons have the highest hepatitis B infection rate among health care workers.^{xii,xiii} Although dental schools in California have been required to offer the hepatitis B vaccine to all students (dentists and dental assistants) since 1992 under the Cal OSHA Bloodborne Pathogens Standard,^{xiv} there are many current workers who either declined the vaccine at the time it was offered (approximately 5% in a local hospital^{xv}) or were in school prior to the requirement and remain susceptible to an accidental exposure.^{xvi}

Many physicians working in occupational medicine clinics have treated workers from dentists' offices who have had needlestick injuries. Many of these dental workers have not known their hepatitis B immune status and may not have been aware that preventive measures were available or important. Treating these individuals is complicated by the lack of immune status information, which has sometimes required administration of Hepatitis B Immune Globulin (HBIG) to the exposed worker. HBIG is expensive and is not always readily available; it has a much greater risk of adverse effects than does the hepatitis B vaccine. The purpose of this paper is to determine the level of awareness of hepatitis B preventive measures in San Francisco dental offices, with the goal of determining potential methods to improve awareness and promote prevention practices.

ⁱ Cohen C, Evans A, London WT, Block J, Conti M, Block T. Underestimation of chronic

-
- hepatitis B virus infection in the United States of America. *J Viral Hepat.* 2008 January; 15(1): 12–13.
- ii Daniels D, Grytdal S, Wasley A; Centers for Disease Control and Prevention (CDC). Surveillance for acute viral hepatitis - United States, 2007. *MMWR Surveill Summ.* 2009 May 22; 58(3):1-27.
- iii Panlilio AL, Orelie JG, Srivastava PU, Jagger J, Cohn RD, Cardo DM, the NaSH Surveillance Group; the EPINet Data Sharing Network. Estimate of the Annual Number of Percutaneous Injuries Among Hospital- Based Healthcare Workers in the United States, 1997–1998. *Infection Control and Hospital Epidemiology.* 2004 25:7, 556-562.
- iv Araujo MW, Andreana S. Risk and prevention of transmission of infectious diseases in dentistry. *Quintessence Int.* 2002 May;33(5):376-82.
- v CDC. Immunization of Health-Care Workers: Recommendations of the Advisory Committee on Immunization Practices (ACIP) and the Hospital Infection Control Practices Advisory Committee (HICPAC). *MMWR: Morbidity and Mortality Weekly Report.* 1997; 46:1–42.
- vi FitzSimons DF, Francois G, De Carli G, Shouval D, Pruss-Ustun A, Puro V, Williams I, Lavanchy D, De Schryver A, Kopka A, Ncube F, Ippolito G, Van Damme P. Hepatitis B virus, hepatitis C virus and other blood-borne infections in healthcare workers: guidelines for prevention and management in industrialized countries. *Occupational & Environmental Medicine.* 2008 Jul; 65(7):446-51.
- vii Centers for Disease Control and Prevention: A comprehensive immunization strategy to eliminate transmission of hepatitis B virus infection in the United States. Recommendations of the Advisory Committee on Immunization Practices (ACIP) part II: immunization of adults. *MMWR Morb Mortal Wkly Rep.* 55 (16) : 1-25.2006.
- viii Agerton TB, Mahoney FJ, Polish LB, Shapiro CN. Impact of the Bloodborne Pathogens Standard on Vaccination of Healthcare Workers with Hepatitis B Vaccine. *Infect Control Hosp Epidemiol.* 1995 May;16 (5) :287-91.
- ix Centers for Disease Control and Prevention. Recommended infection-control practices for dentistry, 1993. *MWMMR.* 1993; 42 (No. RR-8)
- x Kohn WG, Collins AS, Cleveland JL, Harte JA, Eklund KJ, Malvitz DM, Centers for Disease Control and Prevention (CDC). Guidelines for infection control in dental health-care settings--2003. *MMWR Recomm Rep.* 2003 Dec 19; 52(RR-17):1-61.
- xi Wilburn SQ. Needlestick and sharps injury prevention. *Online J Issues Nurs.* 2004 Sep 30; 9(3):5.
- xii Cleveland JL, Barker LK, Cuny EJ, Panlilio AL. Preventing percutaneous injuries among

dental health care personnel. *J Am Dent Assoc.* 2007 Feb;138 (2) :169-78.

- xiii Gillcrist JA. Hepatitis Viruses A, B, C, D, E AND G: Implications For Dental Personnel. *J Am Dent Assoc.* 130 (4): 509-520.
- xiv California Code of Regulations. Cal. Admin. Code tit. 8, § 5193. Available from <http://www.dir.ca.gov/Title8/5193.html>. [cited 2010 April 1].
- xv Personal communication. Michael Amodeo NP, Laurel Montgomery NP. Employee and Occupational Health, San Francisco General Hospital. March 4, 2010
- xvi Alavian SM, Akbari H, Ahmadzad-Asl M, Kazem M, Davoudi A, Tavangar H. Concerns regarding dentists' compliance in hepatitis B vaccination and infection control. *Am J Infect Control.* 2005 Sep; 33(7):428-9