

Lloyd Mancl, Ph.D.  
By Debby Nagusky

Lloyd Mancl's role in public health research and teaching is different from that of many working in the field. As a biostatistician, he works behind the scenes to strengthen the design and analysis of studies by ensuring data are collected and analyzed using sound research methods. He imparts these research methods to Extended MPH Degree Program students in a two-part biostatistics course. In his words, "Research in general needs to be data-driven and evidence-based, using well-designed and well-analyzed studies. I help students understand the analytical methods commonly used in public health research so they can better apply results to their work, as well as critique studies that have been done." Currently, Lloyd applies this statistical rigor to dental health studies, perhaps not an area that first comes to mind when we think about public health.

The objective of one study Lloyd is involved in is to determine the effectiveness of fluoride varnish applications in reducing dental caries in toddlers aged six months to 36 months. These varnishes are applied to the teeth of toddlers at high risk for dental caries during well-child visits and, if shown to be effective, could lead to prevention programs that would reduce oral health disparities between different populations in the United States. As the biostatistician of the study, Lloyd's primary responsibilities are to determine the necessary number of toddlers needed for the study (also known as a study's *power* or ability to detect a difference if one truly exists); to ensure that the study design and protocol rigorously conform to the standards of a randomized clinical trial; and to develop the analytical methods that will be used to evaluate the effectiveness of the fluoride varnish intervention.

Lloyd is also involved in studies focusing on the causes and treatment of temporomandibular disorders. Two of these studies are looking into why women are one and a half to two times more likely than men to develop the disorder—is there a hormonal link? One study, led by a psychologist, evaluates the effectiveness of pain management using two cognitive-behavioral self-management interventions and oral contraceptives. The second study assesses the relationship of facial pain to levels of reproductive hormones and psychological stress across the menstrual cycle.

Lloyd is also involved in Northwest Precedent, a practice-based research network that is administered through the University of Washington and Oregon Health and Science University dental schools. The network encompasses oral health research in diverse practice settings in Idaho, Montana, Oregon, Utah, and Washington. It is one of three such networks (the others are based in Alabama and New York State) that received funding from the National Institute of Dental and Craniofacial Research, part of the National Institutes of Health. The goal of Northwest Precedent is to conduct 15 to 20 dental health studies over the next seven years that cover a wide range of topics, from treatment of dental fears, to assessing factors and

quality of life outcomes associated with wisdom teeth extraction, to testing saliva for predicting risk of dental caries.

In Lloyd's view, "Public health research is a worthy cause and a fascinating area for a biostatistician because when you deal with people, things are complicated. Everyone is unique, but we're trying to come up with solutions or answers that apply or generalize to more than one person." He plans to keep working in his current capacity for quite awhile, always staying connected to public health.

**What is Required for a Student to be Successful in this Course:**

**The assignments and readings are from a previous Quarter listed. They are subject to change – use as an example ONLY.**

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| <b>Class Participation</b>                   | Required onsite summer session (3 weeks)<br>In class discussion of articles                    |
| <b>Types of Assignments</b>                  | Readings from Text, journal articles<br>Quizzes<br>Homework questions<br>Data Analysis Project |
| <b>Technology needed to access materials</b> | Adobe Acrobat Reader<br>SPSS<br>Microsoft Office Applications                                  |

**Registered students please go here for the most recent syllabus, readings and assignments:**

<http://courses.washington.edu/b503/>