Early Childhood Caries and Rheumatic Heart Disease (RDH)

Two Diseases with Increased Prevalence and Severity in American Indian/Alaska Native Children
Infectious Diseases in AI/AN Children

• Occur at a younger age

• Occur with increased incidence

• Increased rate of disease mediated by:
  – Poverty
  – Household Crowding
  – Lack of Running Water
Etiology

• ECC requires Strep mutans
  Earlier acquisition of S mutans leads to increased incidence and severity of ECC

• RHD requires infection with Group A Beta Hemolytic Strep (GABHS)
  Repeated infections with GABHS increase severity of Rheumatic Heart Disease (RHD) and risk of heart failure
Percent ECC Experience in Children
Ages 2 - 5 Years

- Africa: 75%
- AIAN: 70%
- Aboriginal: 70%
- White: 11%
Rheumatic Heart Disease Prevalence in Children 5 - 15 Years of Age

- **Africa**: High prevalence
- **AI/AN**: Moderate prevalence
- **Aboriginals**: Intermediate prevalence
- **US white**: Low prevalence
Mean dmfs matches Crowding
Rx of Rheumatic Heart Disease

• Monthly prophylaxis with penicillin during period of greatest risk can prevent progression of RHD to heart failure by preventing recurrent GABHS

• Period of greatest risk is 5 years after onset

• Prevent recurrent Infection and you will prevent severe RHD
Prevention of ECC Progression

• Is the proven secondary prevention strategy for RHD a possible model for ECC?

• Early and effective treatment (secondary prevention) to arrest caries and disease progression to the need for FMDR