GLOBAL HEALTH STARTER KIT FOR DENTAL EDUCATION

Module 4: Social Determinants and Risks

Authors:
Brittany Seymour, DDS, MPH
Assistant Professor
Oral Health Policy and Epidemiology
Office of Global and Community Health
Harvard School of Dental Medicine

Karen Sokal-Gutierrez MD, MPH
Clinical Professor
Pediatrics
UC Berkeley-UCSF Joint
 Medical Program

Jennifer Kasper, MD, MPH
Assistant Professor
Department of Social Medicine
Harvard Medical School
Chair, Global and Community Health Committee
HMS Scholars in Medicine

This module introduces concepts of social and societal determinants of health, vulnerable populations, the Bottom Billion, and the sociocultural and biomedical models for health.

While there are numerous resources and references available about these topics, for the purpose of this module, we have curated a small sample of high quality resources to support the learning outcomes. We encourage learners (and educators) to explore the literature further, beyond what is contained in this module.

This module is designed to be presented in approximately one hour. To extend the learning experience, **OPTIONAL IN-CLASS ACTIVITIES** have been inserted along the way. These learning activities allow for approximately one additional hour of active learning during the module.

Competencies:

1.2.1. Identify and describe common risk factors of oral diseases.

1.2.2. Identify and describe common (social) determinants of oral disease.

2.1.2. Understand and apply health promotion and risk reduction strategies (such as health eating, cessation of tobacco, and reduction of harmful alcohol use).

2.1.5. Identify patient populations at increased risk for oral diseases and ensure regular attendance through oral health professionals.

2.2.3. Identify barriers to access and use of health and oral health services (e.g., affordability, lack of insurance or providers, cultural and geographic issues); facilitate solutions to overcome them.

2.3.1. Advocate for relevant strategies to prevent and reduce risk factors based on an advocacy strategy to identify, mobilize, and connect relevant stakeholders/actors.

This module is related to the above competencies. While these competencies cannot be met through a single teaching module, this module is working toward competency-based best practices in global health for dental education.

From:
Benzian, H., Greenspan, J.S., Barrow, J., Hutter, J.W., Loomer, P.M., Stauf, N. and Perry, D.A., 2015. A competency matrix for global oral health. Journal of dental education, 79(4), pp.353-361

Seymour B, Shick E, Chaffee B, Benzian H. Going global: toward competency-based best practices for global health in dental education. J. Dent. Educ. 2017;18(6):707-15.

Learning Objectives

By the end of this module, students should be able to do the following:

- Define the social determinants of health
- Describe the social gradient in health
- Explain the concept of the 'bottom billion,' their indicators and characteristics
- Define the Biomedical Model and Sociocultural Model for health and discuss the advantages and disadvantages of each

What causes a cavity?

Students are likely familiar with the famous formula for a cavity: Bacteria + Sugar + Susceptible Tooth + Time= Cavity.

Reference:
*Cawson, R. A., and E. W. Odell. *Essentials of Oral Pathology and Oral Medicine*. 9th ed. New York: Churchill Livingstone, 2017.

*Note: There are various versions of this formula taught in dental education. The purpose of reviewing this formula is not to teach the formula itself, which is outside the scope of this module, but rather to expand on the concept of a 'susceptible tooth' by acknowledging the role of the social determinant of health in susceptibility.
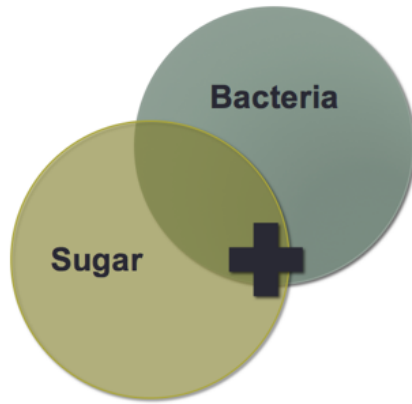
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Cawson, R. A., and E. W. Odell. *Essentials of Oral Pathology and Oral Medicine*. 9th ed. New York: Churchill Livingstone, 2017.

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Cawson, R. A., and E. W. Odell. *Essentials of Oral Pathology and Oral Medicine*. 9th ed. New York: Churchill Livingstone, 2017.
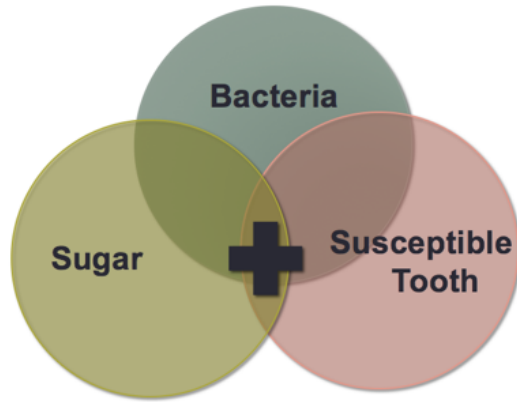
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Cawson, R. A., and E. W. Odell. *Essentials of Oral Pathology and Oral Medicine*. 9th ed. New York: Churchill Livingstone, 2017.
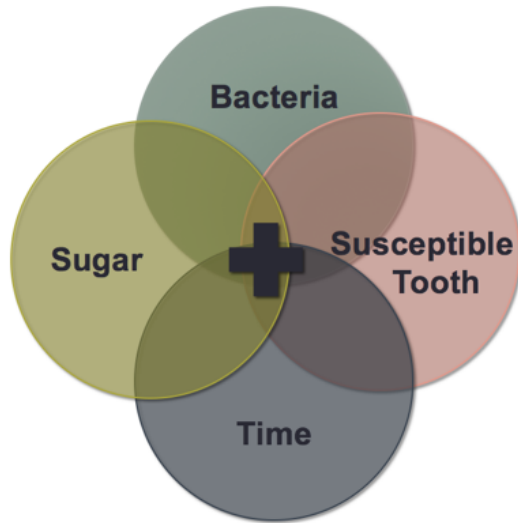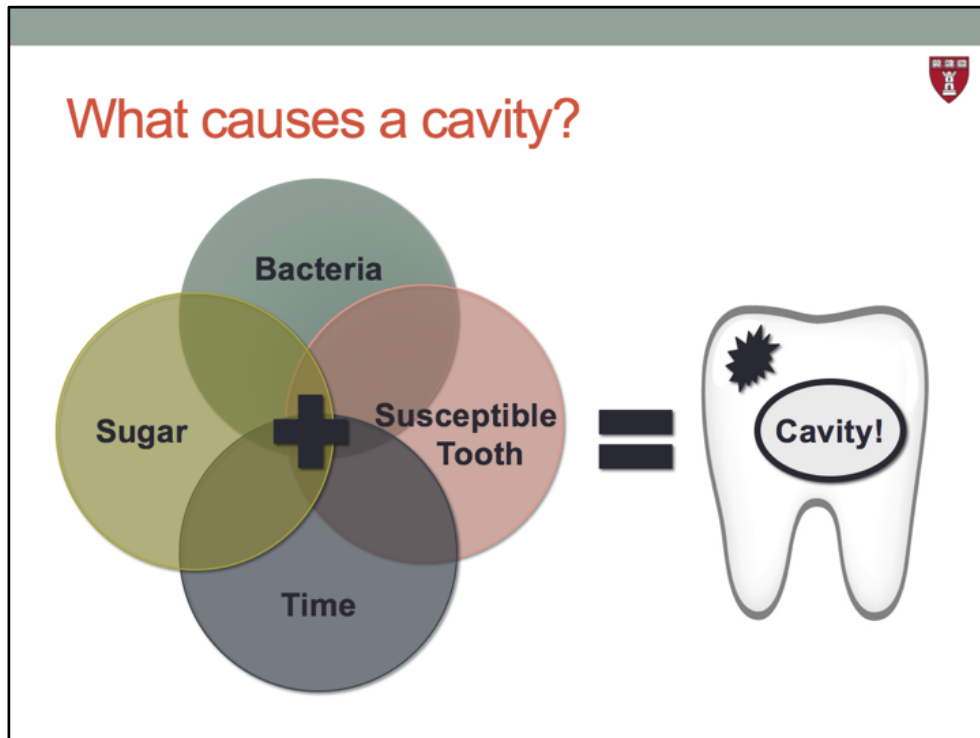
Students are likely familiar with the famous formula for a cavity: Bacteria + Sugar + Susceptible Tooth + Time= Cavity.

Reference:
Cawson, R. A., and E. W. Odell. *Essentials of Oral Pathology and Oral Medicine*. 9th ed. New York: Churchill Livingstone, 2017.

What causes a cavity?

Bacteria + Sugar + Susceptible Tooth + Time = Cavity!

Students are likely familiar with the famous formula for a cavity: Bacteria+ Sugar + Susceptible Tooth + Time= Cavity. In the classic definition, a susceptible tooth is defined as a tooth without any protective factors in place, such as community water fluoridation or sealants for example. Other examples could also be a tooth with a poorly contoured restoration or open margins, or unusual anatomical features that can become plaque traps.
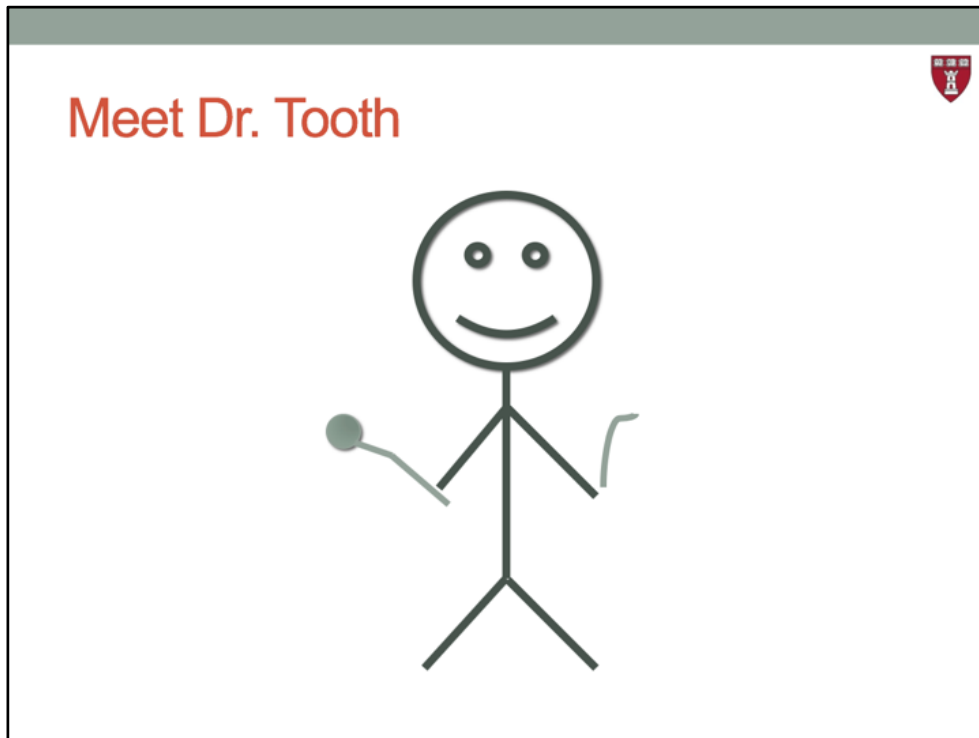
Reference:
Cawson, R. A., and E. W. Odell. *Essentials of Oral Pathology and Oral Medicine*. 9th ed. New York: Churchill Livingstone, 2017.
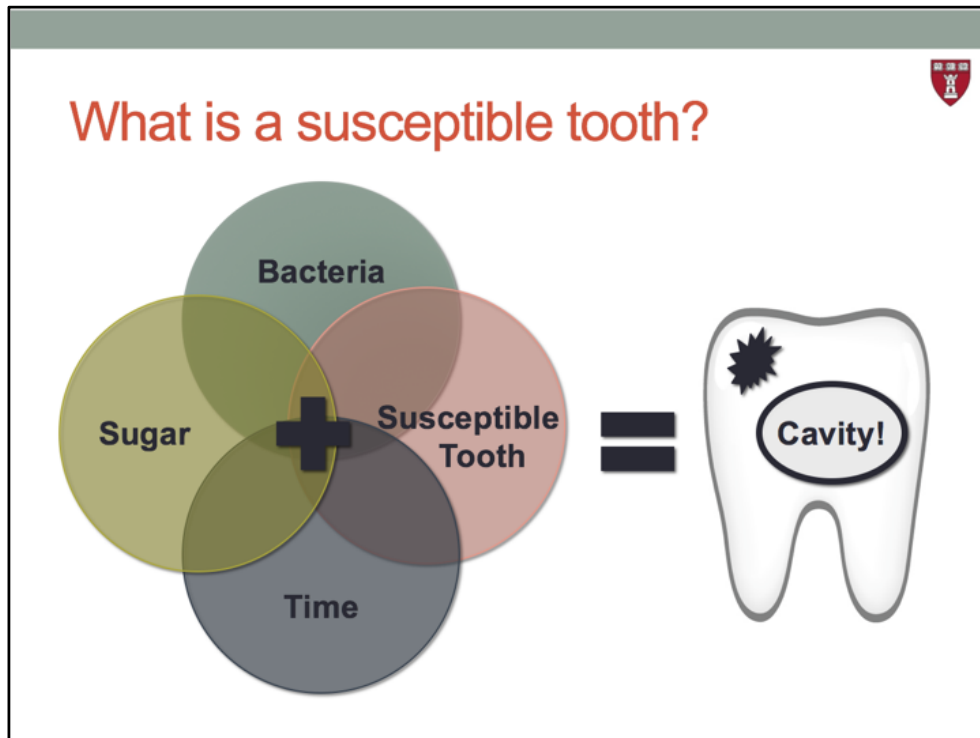
In this module, we are going to expand the answer to the question, "What is a susceptible tooth?"

Reference:
Cawson, R. A., and E. W. Odell. *Essentials of Oral Pathology and Oral Medicine*. 9th ed. New York: Churchill Livingstone, 2017.

Meet Dr. Tooth

We met Dr. Tooth in Module 2. During an interactive activity, we explored all the components of the health system needed for Dr. Tooth to be able to practice dentistry and treat the patients who need care.

Refresher:
Components of a health system:
- Leadership and governance
    - Regulation, licensure, scope of practice, oral health policies (e.g. not just anyone can provide dental care, but Dr. Tooth can under a legal license to practice)
- Health information
    - Disease burden and health needs
    - Patient/provider ratios
    - Health information technology
- Health financing and payment
    - Funding for provider education and training
    - Funding for health care services, supplies, and equipment
    - Insurance for citizens, including financing
    - Payment for health care services, supplies, and equipment
- Health care workforce
    - Providers and staff, adequately trained
    - Norms and values for delivering care

- • Coordination between providers, payers, and patients
- Supplies, equipment, and technology
  - • Dental supplies and equipment
  - • Office/clinic space
  - • Dental records
  - • Supply delivery system
  - • Prescription medicines
- Service delivery
  - • Patient access to care
  - • Quality of care, ethical care

This activity is adapted from the following:
WHO Key Components of a Well Functioning Health System, May 2010
Accessed on January 22, 2018 at:
http://www.who.int/healthsystems/EN_HSSkeycomponents.pdf?ua=1

In this module, we are going to meet a person from the community.

Meet Joe. Joe can be anyone, any gender, any age, any income level, living anywhere in the world. (Note: the way each class thinking about Joe will impact the exercise; challenge students to consider characteristics they may not mention initially.)

This warm-up activity is based on the article about the "Three Delays" when examining maternal mortality in Haiti. The three delays are as follows: 1) Deciding to seek appropriate care, 2) Reaching an appropriate facility, and 3) Receiving appropriate, adequate care.

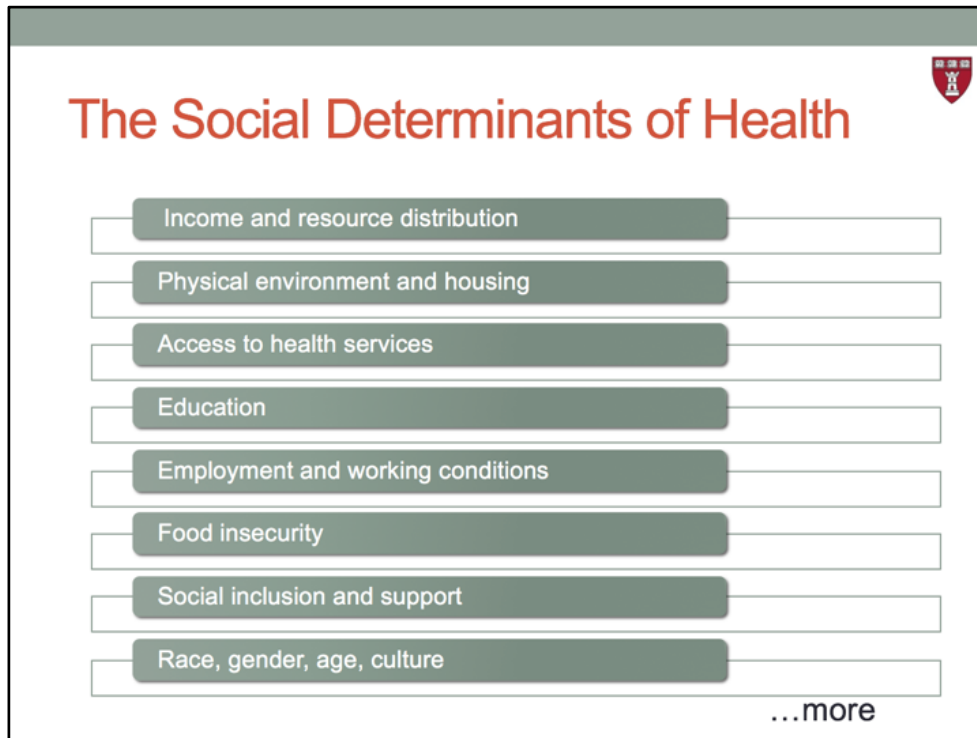On one end of the board, draw Joe and state, "Joe has a toothache (a susceptible tooth). What should Joe do?"

Most students respond, "Go to the dentist!" On the opposite end of the board, draw a dental office. Use probing questions, "What needs to happen before Joe goes to the dentist?" (Answer: Joe needs to *decide* to go; discuss all the factors that influence Joe's decision.) Begin to fill in the board in three chronological sections, one for each delay:
1) Deciding to seek appropriate care
- Cultural beliefs
- Health/oral health literacy
- Ability to take time off to go
- Recognizing a need to go
- Other pressing priorities
- Finances
2) Reaching an appropriate facility
- Rural, no facility nearby

- Inadequate roads,
- No transportation
- Bad weather
- Can't get an appointment
- Finances

3) Receiving appropriate care
- No provider available or lack of a competent provider
- Language barriers
- Inadequate supplies/equipment
- Can't pay for care

References:

Barnes-Josiah D, et al. The "Three Delays" as a framework for examining maternal mortality in Haiti. Socl Sci. Med. 1998; (46)8; pp. 981.993.

The Social Determinants of Health

- Income and resource distribution
- Physical environment and housing
- Access to health services
- Education
- Employment and working conditions
- Food insecurity
- Social inclusion and support
- Race, gender, age, culture

…more

Individuals, children, and families can have dramatically different health outcomes, such as life expectancies, depending on where they live in the world. Children born in Japan might live to be 84 years or older, where children born in Sierra Leone have a life expectancy of only 46 years. These drastic differences are attributed to things like where a person lives, their social, physical, employment, and economic circumstances, and their access to basic needs and services. These factors are known as the social determinants of health. These determinants affect oral health as well. Many of the obstacles to oral care Joe experiences in the previous exercise are linked, either directly or indirectly, to the social determinants of health.

References:
Watt RG. Social determinants of oral health inequalities: implications for action. Community Dent Oral Epidemiol 2012; 40 (Suppl. 2): 44–48.

World Health Organization. Closing the gap in a generation: health equity through action on the social determinants of health. Commission on Social Determinants of Health Final Report. 2008. Accessed on January 29, 2018 at:
http://apps.who.int/iris/bitstream/10665/43943/1/9789241563703_eng.pdf

The Social Gradient
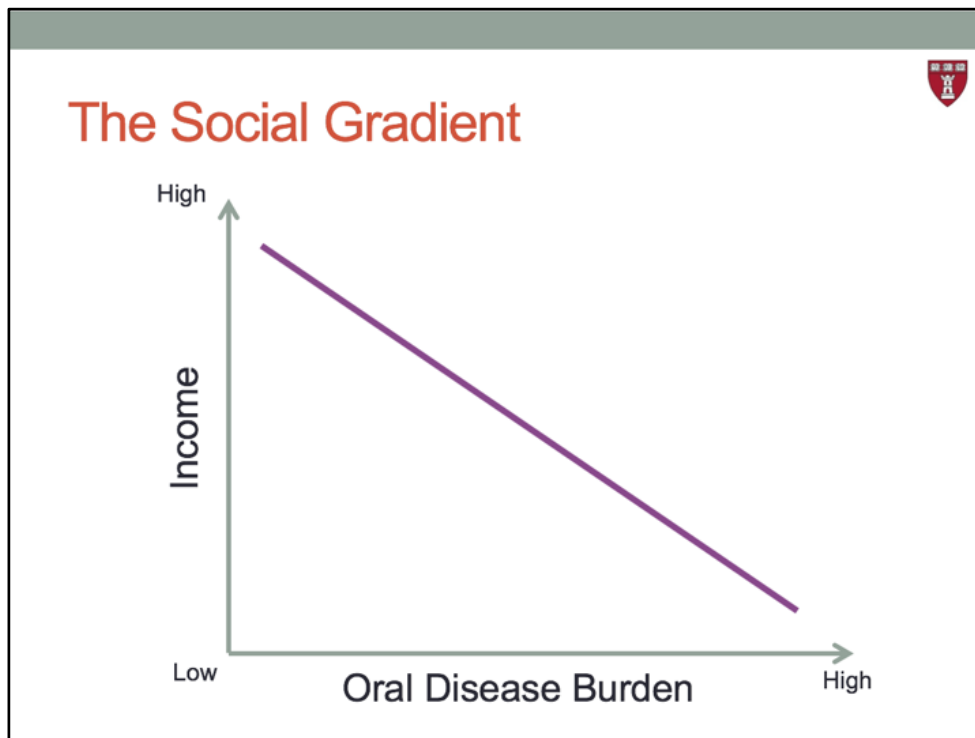
One of the strongest predictor of health outcomes, including oral health outcomes, is poverty. As a person's income rises, oral disease burden falls. This is known as the social gradient in health.

(This graphic is a simple visual to demonstrate the social gradient. It should be noted that this gradient exists on an individual level, but may not hold true at the community or population level. For example, some low income countries have a lower oral disease burden on average than some middle income countries- this may be in part because middle income countries have the largest proportion of people living in extreme poverty today [see next slides]. Studies have also shown a negative relationship between income and oral health due to a number of factors such as geography and access to junk food. The details and nuance of this relationship are out of the scope of this module. The take home message for this slide is that one of the strongest predictors of poor oral health outcomes in general is poverty.)

Reference:
Watt RG. Social determinants of oral health inequalities: implications for action. Community Dent Oral Epidemiol 2012; 40 (Suppl. 2): 44–48.

The Bottom Billion

Average life expectancy: 50 yrs. (vs. 67)

Proportion of children who die before their 1st birthday is 14% (vs. 4%)

Proportion of children with symptoms of chronic malnutrition is 36% (vs. 20%)

Small countries (58 countries with combined populations smaller than India or China)

In September 2000, world leaders convened for the United Nations Millennium Summit at the UN headquarters in New York City. The resulting document, the Millennium Declaration, resolved that leading into the new millennium, a major challenge for global development was the needs of developing countries and emerging economies. It declared that we have a collective responsibility to uphold human dignity, equity, and equality. The declaration set forth concrete measurable objectives for achieving those outcomes, with a strong focus on reducing poverty. These became the Millennium Development Goals (MDG). The Millennium Development Goals led to dramatic improvements in health around the world. These goals are discussed in more detail in Module 2.

As the world began to make significant progress in achieving the MDGs, a problematic observation was made: Of the roughly 6.5 billion people in the world during that time, most were experiencing at least some benefits of global progress in some form, except for the poorest billion people in the world. We were not seeing the expected improvements in this population. They became known as the bottom billion, the billion people in the world living in extreme poverty and not experiencing the same rates of progress as the rest of the world's population. Health indicators of the 'bottom billion' were significantly worse than global averages.

Reference:
United Nations. Past conference. Millennium Summit (6-8 September 2000).
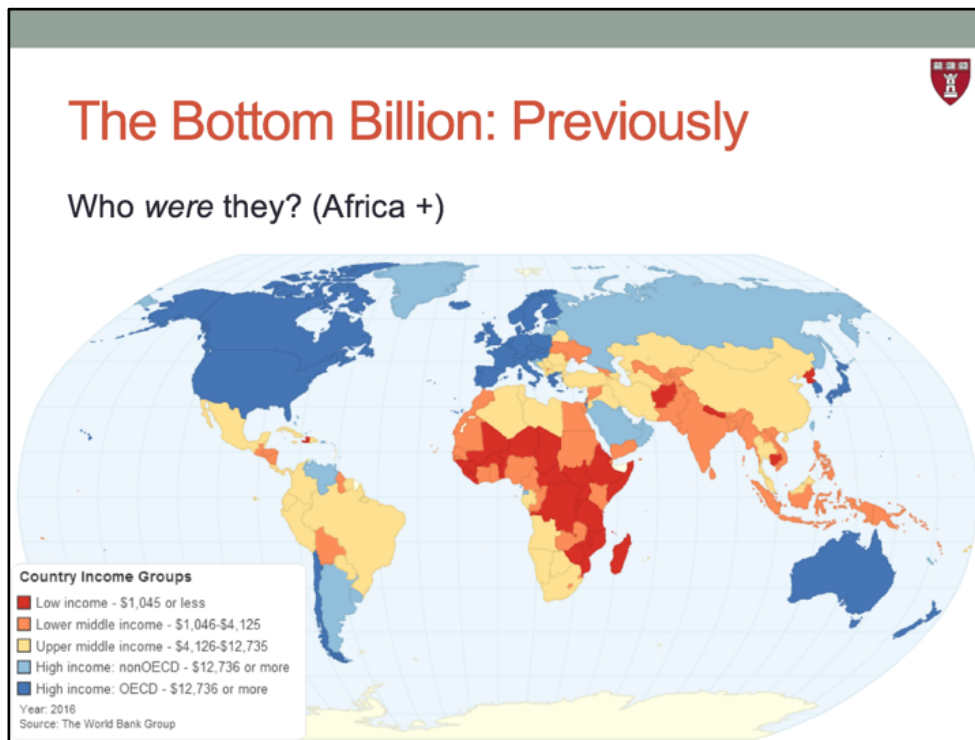
Accessed on January 22, 2018 at:
http://www.un.org/en/events/pastevents/millennium_summit.shtml

United Nations General Assembly. United Nations Millennium Declaration. Resolution A/RES/55/2. New York: United Nations, September 8, 2000.
Accessed on January 22, 2018 at:
http://www.un.org/en/ga/search/view_doc.asp?symbol=A/RES/55/2

Collier, Paul. *The bottom billion: why the poorest countries are failing and what can be done about it*. Oxford University Press: Oxford, 2007

The Bottom Billion: Previously

Who *were* they? (Africa +)

Country Income Groups
- Low income - $1,045 or less
- Lower middle income - $1,046-$4,125
- Upper middle income - $4,126-$12,735
- High income: nonOECD - $12,736 or more
- High income: OECD - $12,736 or more

Year: 2016
Source: The World Bank Group

In the early 2000s, over 90% of the 'bottom billion' were in low income countries, most in the continent of Africa, which is why they were often referred to as "Africa+."

(Extreme poverty was defined by the World Bank as less than $1USD per day in 1990, then $1.25 in 2005, now $1.90 today.)

References:
Sumner A. Global Poverty and the New Bottom Billion: What if Three-Quarters of the World's Poor Live in Middle-Income Countries? Institute of Developmental Studies. September 2010;1-43.

Institute of Developmental Studies. The new bottom billion and the MDGs- A plan of action. IDS In Focus Policy Briefing. October 2010.
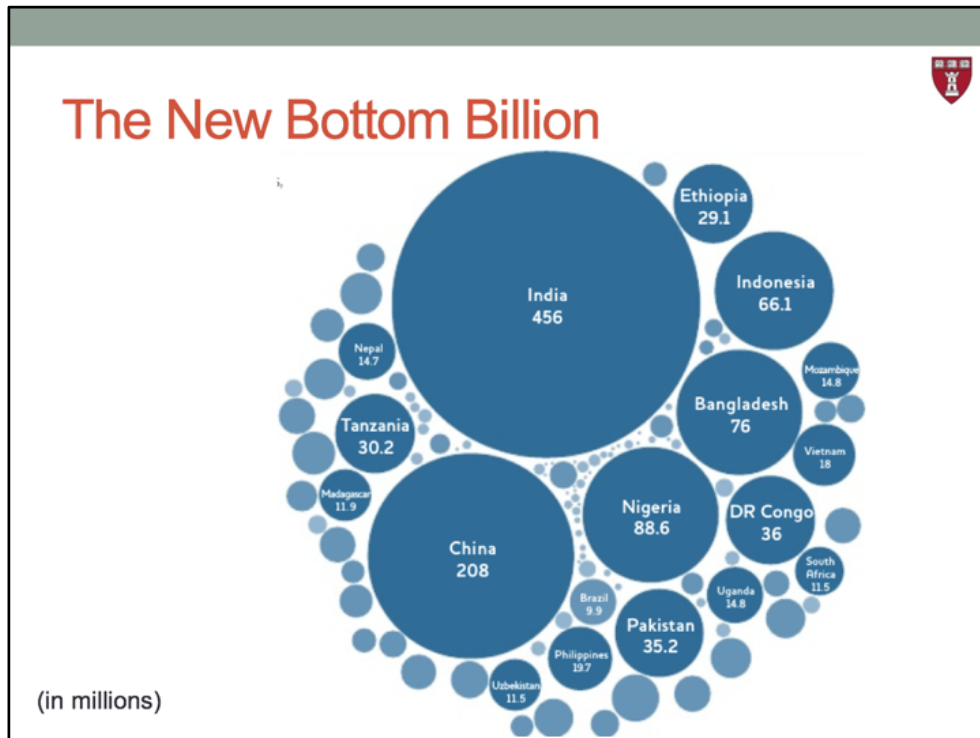
World bank blog: http://blogs.worldbank.org/developmenttalk/international-poverty-line-has-just-been-raised-190-day-global-poverty-basically-unchanged-how-even

Collier, Paul. *The bottom billion: why the poorest countries are failing and what can be done about it*. Oxford University Press: Oxford, 2007

Graphic source:
ChartsBin statistics collector team 2016, *Country Income Groups (World Bank*

Classification), ChartsBin.com, viewed 8th February, 2018, <http://chartsbin.com/view/2438>.

The New Bottom Billion

(in millions)

India 456
Ethiopia 29.1
Indonesia 66.1
Nepal 14.7
Mozambique 14.8
Tanzania 30.2
Bangladesh 76
Vietnam 18
Madagascar 11.9
Nigeria 88.6
DR Congo 36
China 208
South Africa 11.5
Brazil 9.9
Uganda 14.8
Philippines 19.7
Pakistan 35.2
Uzbekistan 11.5

With continued focus on the world's poorest regions, we began to see an interesting shift in the bottom billion. Today, ¾ of them now live in middle income countries. These changes have implications for aid to developing countries, where many funders and programs continue to focus on the lowest income countries. Questions have arisen about how to address the disparities within countries, many of which have significant proportions of people living in extreme poverty but are also growing economically and are becoming donor countries themselves. What does this mean for resource distribution, health equity, and oversees development assistance?

Reference:
Sumner A. Global Poverty and the New Bottom Billion: What if Three-Quarters of the World's Poor Live in Middle-Income Countries? Institute of Developmental Studies. September 2010;1-43.

Graphic Source:
Institute of Developmental Studies. The new bottom billion and the MDGs- A plan of action. IDS In Focus Policy Briefing. October 2010. (Graphic in the report courtesy *The Guardian* www.guardian.co.uk/global-development).

The New Bottom Billion

A renewed focus on PEOPLE instead of LOCATIONS

It is becoming apparent that focusing on lower income countries alone will no longer address global poverty, particularly extreme poverty. Thus, there has been a call to action to shift this focus from places to people.
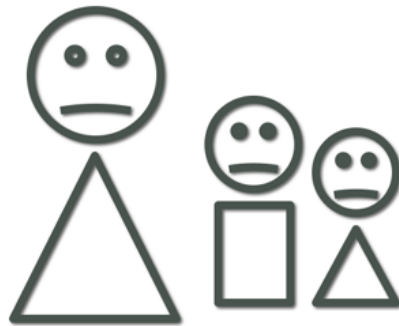
Reference:
Sumner A. Global Poverty and the New Bottom Billion: What if Three-Quarters of the World's Poor Live in Middle-Income Countries? Institute of Developmental Studies. September 2010;1-43.
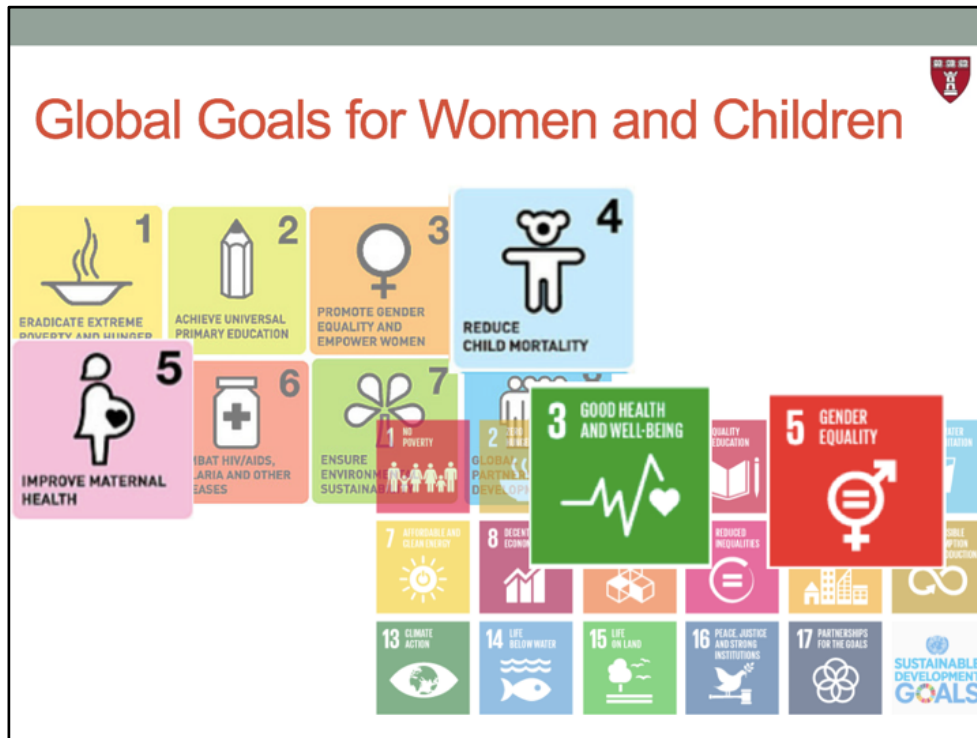
Additionally, the majority of the bottom billion are women and children.

Reference:
Olinto, P., Beegle, K., Sobrado, C. and Uematsu, H. (2013) *The State of the Poor: Where Are The Poor, Where Is Extreme Poverty Harder to End, and What Is the Current Profile of the World's Poor?* Economic Premise No. 125. Washington, DC: Poverty Reduction and Economic Management Unit, World Bank.

The particular vulnerabilities of women and children globally have been a focus of the development agenda for decades, and they are included in the Millennium Development Goals and the Sustainable Development Goals. The Sustainable Development Goals originated in September, 2015, when world leaders convened at the UN headquarters in New York City for the UN Sustainable Development Summit. This year marked the conclusion of the MDG era (2000-2015). Here, they adopted the 2030 Agenda for Sustainable Development. This resolution agenda stated that all countries and stakeholders will work together in collaboration toward continued progress for the eradication of poverty, with a focus on people, planet, and prosperity. A new set of global goals emerged, designed to carry forward the global development agenda as it moved from the MDG era into the sustainable era (2015-2030). These are known as the Sustainable Development Goals.

The global goals are discussed in more detail in Module 2. The goals, and their rationale, underscore the ways that gender influences health, including oral health:
- Access to nutrition, education and family services
- Access to resources for health promotion and prevention, diagnosis and treatment
- Health-related behaviors and decision-making capacity
- Responses of the health system
- Ability to take paid time off for specific health-related needs individually or for children
- Experience and implications of ill health

- Severity and consequences of illnesses
- Risks of mortality and morbidity
- Mother's education level is a determinant of her child's health

References:
UN New Centre. Sustainable Development Goals kick off with start of the new year. News, Secretary-General, Sustainable Development Agenda. Published December 30, 2015. Accessed January 23, 2018 at: http://www.un.org/sustainabledevelopment/blog/2015/12/sustainable-development-goals-kick-off-with-start-of-new-year/.

United Nations General Assembly. Political declaration of the high-level meeting of the General Assembly on the adoption of the outcome document of the United Nations summit of the post-2015 development agenda: Transforming our world: the 2030 Agenda for Sustainable Development. Resolution A/RES/70/1. New York: United Nations, September 25, 2015. Accessed on January 22, 2018 at: http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E

Langer A, Frenk J, Horton R. Lancet. Women and Health Initiative: integrating needs and response. 2012 Aug 18;380(9842):631-2.

Quick J, Jay J, Langer A. Improving women's health through universal health coverage. PLoS Med. 2014 Jan;11(1):e1001580.

Graphic sources:
Green, D. Have the MDGs affected developing country policies and spending? Findings of new 50 country study. World Bank- Public Sphere blog. August 20, 2015. Accessed on January 22, 2018 at: https://blogs.worldbank.org/publicsphere/have-mdgs-affected-developing-country-policies-and-spending-findings-new-50-country-study.

UN New Centre. Sustainable Development Goals kick off with start of the new year. News, Secretary-General, Sustainable Development Agenda. Published December 30, 2015.
Accessed January 23, 2018 at: http://www.un.org/sustainabledevelopment/blog/2015/12/sustainable-development-goals-kick-off-with-start-of-new-year/

Example: Climate Change

- Women farmers account for up to 80% of all food production in developing countries

- 90% of the female labor force in many African countries are engaged in agricultural work

- Natural disasters, climate change, and other environmental insults negatively impact women in greater numbers
  - Food insecurity
  - Land rights
  - Migration
  - Access to resources (water)
  - Loss of income (drought and harvest)

Some of the negative effects of climate change, for example, impact women disproportionately. Women account for a large percentage of the agricultural workforce in particular regions of the world. Changing weather patterns and more severe natural disasters due to climate change harm the agricultural industry, which in turn negatively affects women.

Reference:
Women, Gender Equality and Climate Change. UN Women's Watch Fact Sheet. 2009. Accessed on February 10, 2018 at: http://www.un.org/womenwatch/feature/climate_change/downloads/Women_and_Climate_Change_Factsheet.pdf
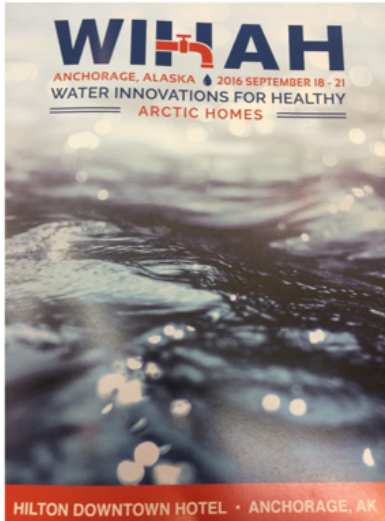
Women and their families in Alaska's remote Arctic and sub-Arctic tribal communities are experiencing emerging water related challenges due to climate change. The Water Innovations for Healthy Arctic Homes (WIHAH) conference held in September 2016 brought together Alaskan, U.S., and international engineers, health experts, climate change researchers, rural community members, and policymakers to discuss health benefits, challenges and innovations associated with making running water and sanitation in remote tribes and communities safe, affordable and sustainable. Due to the global burden of both communicable and non-communicable diseases and their common risk factors, the conference had a special focus on interdisciplinary strategies for disease prevention and health promotion, including improving access to water and sanitation and reducing sugar consumption. Alaskan rural communities are battling waterborne and water washed diseases. Water washed diseases occur when the quality and quantity of water is not adequate to maintain proper hygiene, resulting in acute infections such as bacterial skin infections, pneumonia, respiratory syncytial virus, and severe dental caries. For example, 40% of rural Alaskan children by the age of five have been hospitalized for full mouth rehabilitation under sedation due to dental infections, representing some of the worst oral health outcomes in the United States. Water insecurity is influencing dependence on cheap sugar substrates and sugar-sweetened beverages in place of safe and palatable water. Although women can be disproportionately affected by climate change in some parts of the world, all members of the rural arctic communities in Alaska are impacted.

Reference:

Thomas T. Alaska Native Tribal Health Consortium Clinical and Research Services Report. August 12, 2016.

Example: Child marriage

- Child marriage is a worldwide problem

- From 2000-2010, 38 U.S. states allowed children under the age of 18 to marry; the minors were primarily girls, some as young as 12

- Of those who were girls, most male partners were older than 18; some had age gaps of 13 years or more

- In total, its estimated that nearly 250,000 children were married in that time period in the United States

Child marriage is a global problem. Poverty is a leading risk factor for child marriage, and child marriage perpetuates the cycle of poverty, particularly for girls. Other risk factors include low education rates, limited employment opportunities, reproductive burden, social isolation and depression, and family violence. Poverty relates to all of these additional factors as well. Even in a high income country such as the United States, child marriage remains a problem.

References:
Anjali Tsui, Dan Nolan and Chris Amico. Child marriage in America by the numbers. PBS Frontline. July 6, 2017. Accessed on February 10, 2018 at:
http://apps.frontline.org/child-marriage-by-the-numbers/?utm_source=facebook&utm_medium=pbsofficial&utm_campaign=frontline_2017#

Renate van der Zee. 'It put an end to my childhood': the hidden scandal of US child marriage. The Guardian. Tue 6 Feb 2018. Accessed on February 10, 2018 at:
https://www.theguardian.com/inequality/2018/feb/06/it-put-an-end-to-my-childhood-the-hidden-scandal-of-us-child-marriage

Video activity: According to their website, The Girl Effect is "a creative non-profit – experts in media, mobile, brand and international development – working where girls are marginalized and vulnerable. We build youth brands and mobile platforms that millions of girls and boys love and interact with. From apps that build skills, to TV dramas that explore vital issues, to magazines written and distributed by girls. Our work enables girls to express themselves, value themselves and build the relationships they need – empowering them to change their lives."

References:
The Girl Effect: https://www.girleffect.org

Video:
Published September 13, 2010 by The Girl Effect
Video Description: The girl effect is about leveraging the unique potential of adolescent girls to end poverty for themselves, their families, their communities, their countries and the world
Graphic is a screen grab of the above video.
https://www.youtube.com/watch?v=1e8xgF0JtVg

In addition to women and children, there are other vulnerable groups that experience disparities and their negative effects disproportionately. We need to continue to collect data worldwide to identify their challenges and develop targeted solutions.

When you were a child…

- What did your family believe about taking care of you when you were sick?
  - Foods that you ate when sick?
  - Causes of fever? Treatment for the flu?
  - How did you know when you were sick enough to stay home from school?
  - How did your family feel about taking you to the doctor?

The social determinants of health, such as gender and income, are important elements for disease risk. They can be equally important when considering successful treatments as well. The way a person perceives health and illness can have a significant impact on treatment processes and outcomes.

Pose these questions to the class and observe differences and similarities between student answers. As students answer, ask why. For example, if someone says they always had chicken soup, ask why they had chicken soup, have they ever thought about it? Many answers will not be based on 'science' or evidence-based medicine, but rather on family tradition or social and cultural practices.
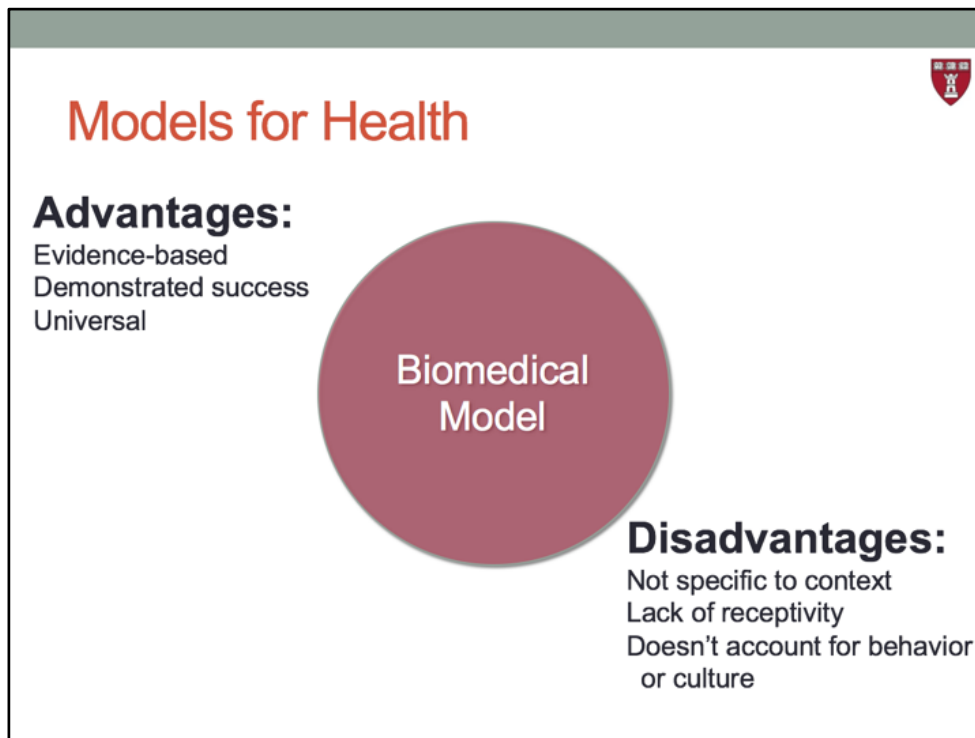
Models for Health
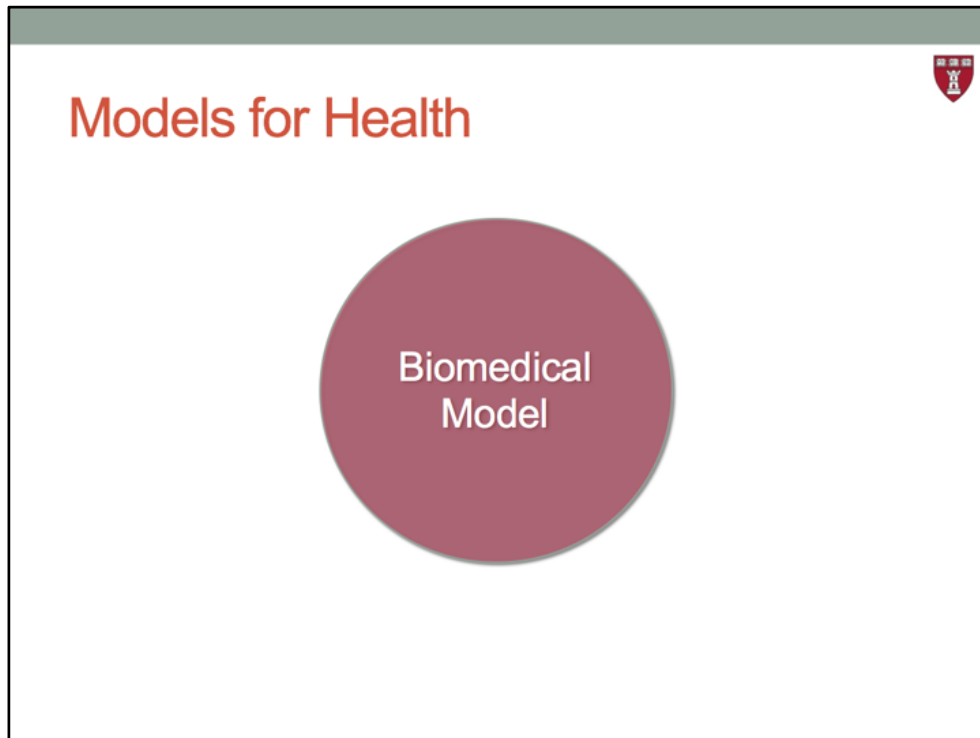
Biomedical Model

Historically, dentistry has focused on the biomedical approach for understanding etiology of disease and corresponding treatment. This disease model for health relies on the scientific process and evidence-based practices. Recovery from illness occurs due to a physiological understanding of how the body functions, what happens when a viral or bacterial invasion occurs, and how to treat it. The biomedical model isolates cause and effect and treats accordingly, or prevents it from happening in the first place.

References:
Watt RG. Social determinants of oral health inequalities: implications for action. Community Dent Oral Epidemiol 2012; 40 (Suppl. 2): 44–48.

Kleinman A. (1979) Sickness as Cultural Semantics: Issues for an Anthropological Medicine and Psychiatry. In: Ahmed P.I., Coelho G.V. (eds) Toward a New Definition of Health. Current Topics in Mental Health. Springer, Boston, MA.

Kleinman A, Eisenberg L, Good B. Culture, illness, and care: clinical lessons from anthropologic and cross-cultural research. Ann Intern Med. 1978 Feb;88(2):251-8.

Models for Health

Advantages:
Evidence-based
Demonstrated success
Universal

Biomedical Model

Disadvantages:
Not specific to context
Lack of receptivity
Doesn't account for behavior
or culture

The advantages of the biomedical model have allowed for major improvements in health worldwide through interventions such as vaccinations, water and sanitation improvements, and antiretroviral therapy for HIV/AIDS. However, this model makes it difficult to apply complex factors like human behavior and cultural beliefs. For example, in the 1970's, the World Health Organization sent a regional health team to Botswana to help manage the high rates of tuberculosis in the country. The regional health team held training workshops to teach traditional healers about tuberculosis, both causes and the available treatments and medications they brought to the country. The trainers used the biomedical model for managing tuberculosis. The workshops were initially considered a failure, with the traditional healers refusing to refer people from the community to the regional health team clinics for care. The traditional healers felt the trainers were ignorant to illness in their communities and that the clinics clearly did not understand the actual causes and remedies for the disease. The traditional healers explained that the disease affects their communities differently than a European community for example, so only they are able to adequately address the illness; the treatments sent by the WHO would be ineffective.
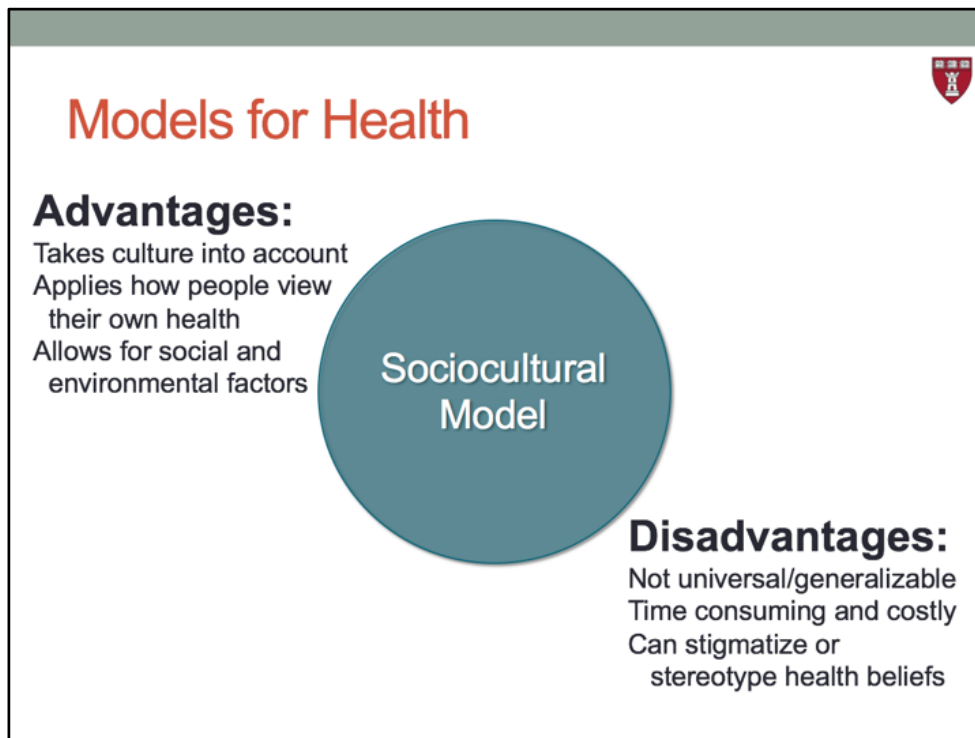
References:

Haram, L. (1991). Tswana Medicine in Interaction with Biomedicine. Social Science and Medicine, 33(2), 167-175.

Watt RG. Social determinants of oral health inequalities: implications for action. Community Dent Oral Epidemiol 2012; 40 (Suppl. 2): 44–48.

Kleinman A. (1979) Sickness as Cultural Semantics: Issues for an Anthropological Medicine and Psychiatry. In: Ahmed P.I., Coelho G.V. (eds) Toward a New Definition of Health. Current Topics in Mental Health. Springer, Boston, MA.

Kleinman A, Eisenberg L, Good B. Culture, illness, and care: clinical lessons from anthropologic and cross-cultural research. Ann Intern Med. 1978 Feb;88(2):251-8.

Models for Health

Sociocultural Model
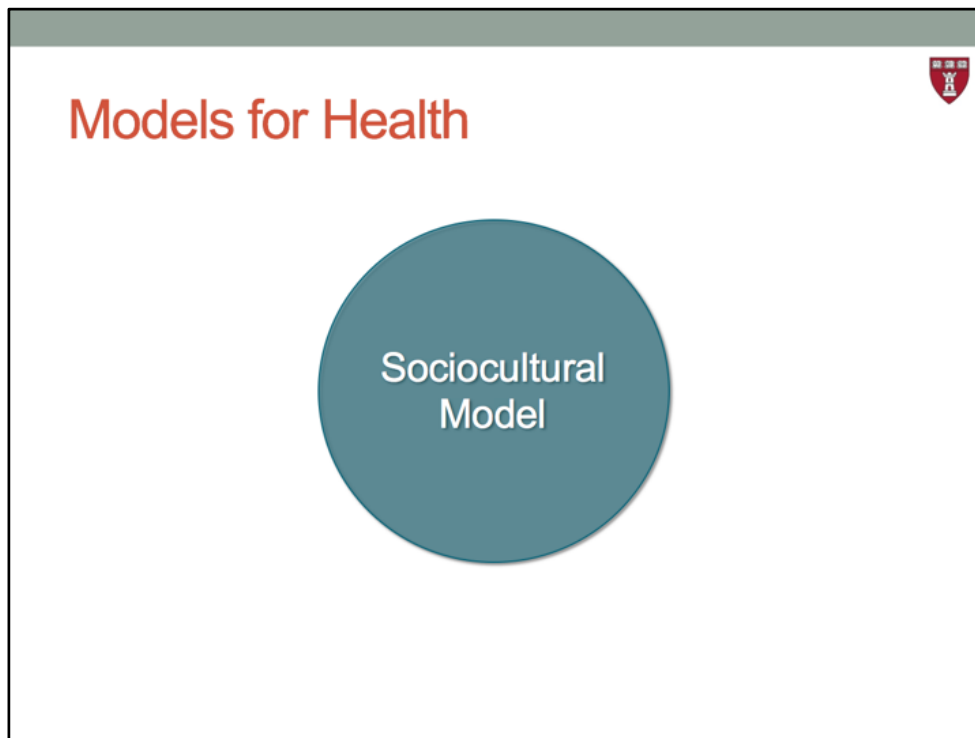
The sociocultural model examines the personal, social, community, family, and cultural influences on the experience of illness and care beyond physiology. This model considers how people define health and pursue care based on their beliefs, customs, cultural and religious practices, social networks, and evening policies and governing practices. These factors impact a person's perception and experience of illness, as well as their ability to change their own behaviors (constrained choice). Thus, the traditional healers practicing Tswana medicine created individualized approaches to treating any given patient suffering from 'The Big Cough" (their term for tuberculosis). This is in contrast to the regional health team's clinics, which offered the same treatment medication to everyone.

References:

Kleinman A. (1979) Sickness as Cultural Semantics: Issues for an Anthropological Medicine and Psychiatry. In: Ahmed P.I., Coelho G.V. (eds) Toward a New Definition of Health. Current Topics in Mental Health. Springer, Boston, MA.

Kleinman A, Eisenberg L, Good B. Culture, illness, and care: clinical lessons from anthropologic and cross-cultural research. Ann Intern Med. 1978 Feb;88(2):251-8.

Once the regional health teams began to understand the cultural beliefs and practices in Bostwana, progress became possible. They adjusted their biomedical approach and included aspects of the sociocultural model as well. Over time, the traditional healers began referring patients to the clinics, recognizing when successful outcomes are more likely through collaborative medicine, including the biomedical-based medication available at the clinics.
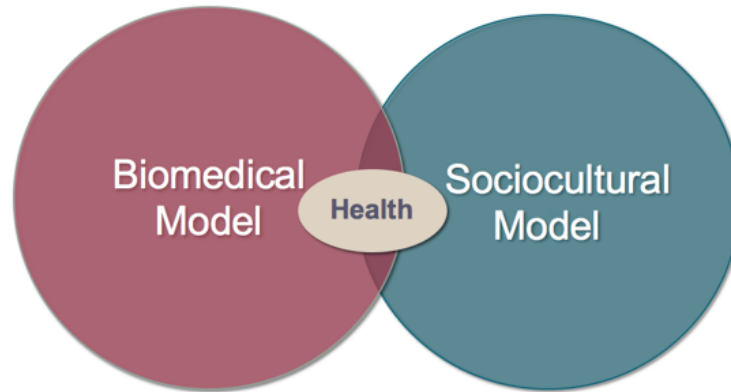
References:
Haram, L. (1991). Tswana Medicine in Interaction with Biomedicine. Social Science and Medicine, 33(2), 167-175.

Watt RG. Social determinants of oral health inequalities: implications for action. Community Dent Oral Epidemiol 2012; 40 (Suppl. 2): 44–48.

Kleinman A. (1979) Sickness as Cultural Semantics: Issues for an Anthropological Medicine and Psychiatry. In: Ahmed P.I., Coelho G.V. (eds) Toward a New Definition of Health. Current Topics in Mental Health. Springer, Boston, MA.

Kleinman A, Eisenberg L, Good B. Culture, illness, and care: clinical lessons from anthropologic and cross-cultural research. Ann Intern Med. 1978 Feb;88(2):251-8.

Models for Health

Biomedical Model

Health

Sociocultural Model

No single model is effective in isolation, particularly in a globalizing world with countries becoming melting pots of different cultures, languages, and health practices. Optimizing the strengths of both a biomedical and sociocultural model can lead to improved outcomes and better patient-provider relationships.

Reference:

Kleinman A. (1979) Sickness as Cultural Semantics: Issues for an Anthropological Medicine and Psychiatry. In: Ahmed P.I., Coelho G.V. (eds) Toward a New Definition of Health. Current Topics in Mental Health. Springer, Boston, MA.
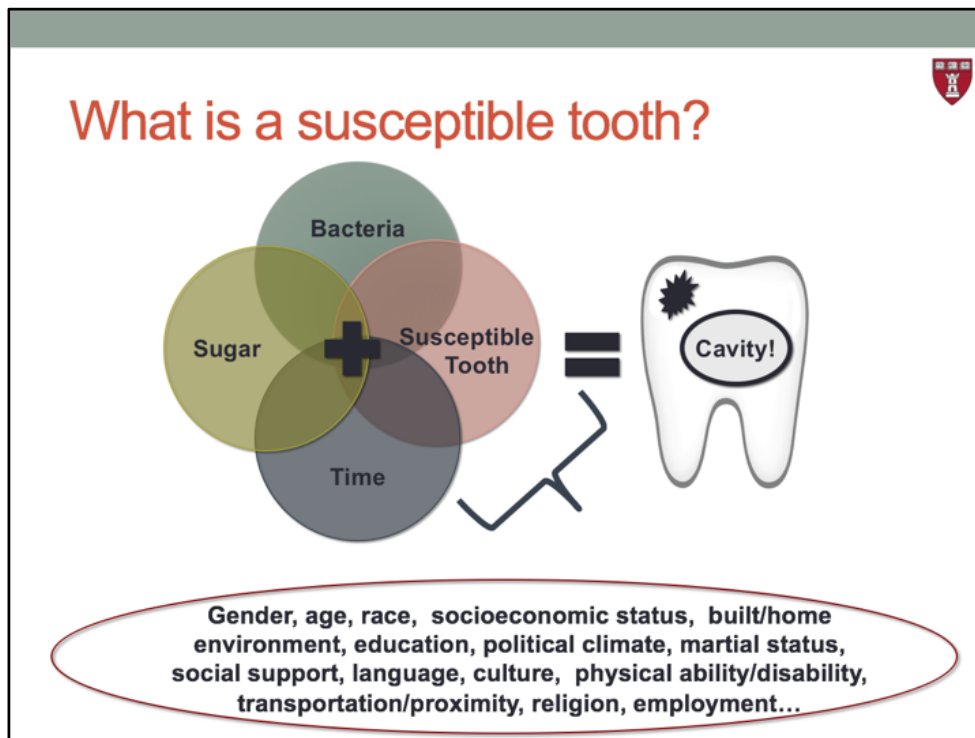
In summary, the social determinants of disease, and considering a sociocultural model of care, expand the thinking around a 'susceptible tooth,' and the most appropriate approach for treatment. Factors like gender, socioeconomic status and poverty, culture, government and policy, physical and built environment, and many other examples can make a person (and their teeth) more susceptible to cavities. All of these complex factors have direct implications for oral disease risk, as well as finding the best methods for care and how we might define the ideal and alternative treatment options, as well as disease prevention, for our patients and communities.

Further reading:
Fisher-Owens SA1, Gansky SA, Platt LJ, Weintraub JA, Soobader MJ, Bramlett MD, Newacheck PW. Influences on children's oral health: a conceptual model. Pediatrics. 2007 Sep;120(3):e510-20.
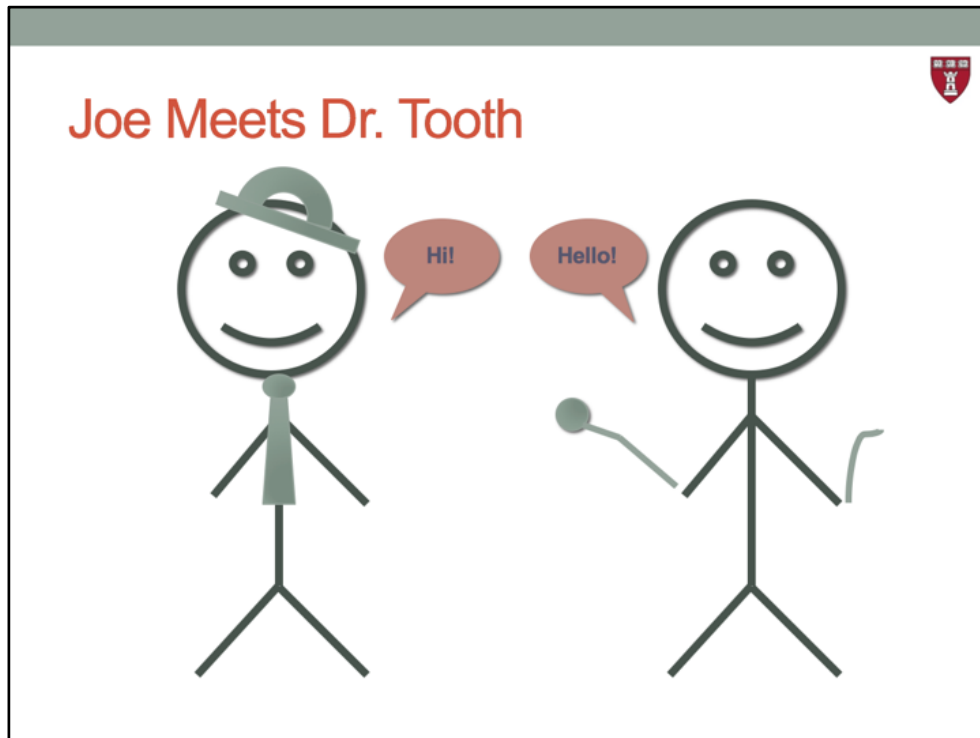
Think back to Module 2 and all the factors that must be in place for Dr. Tooth to practice in a well-functioning health system. Add to that all the potential delays and obstacles to care that Joe faces. The patient-provider relationship and experiences of sickness and care, by both patient and provider, cannot be taken for granted. When a patient and provider come together and successfully manage illness as a team, or even better, prevent illness from occurring, health becomes possible for all!

OPTIONAL IN-CLASS ACTIVITY: Game: Joe meets Dr. Tooth

Divide the students into small groups.
Rules of the game:
1) Each group must identify three obstacles Joe is facing, one from each of the three delays
2) Each group must identify three obstacles Dr. Tooth is facing within the health system that is preventing him from delivering care, based on Module 2's activity
3) Each group must develop a solution that will allow Dr. Tooth and Joe to meet so that Joe does not have a toothache
4) Each group will have 20 minutes to outline their obstacles and solution together
5) Each group will then have five minutes to present their obstacles and solution to the class
6) Groups will rate the others on how challenging the obstacles are, how innovative, cost-effective, and feasible the solution is (1-low, 5-high)

7) Numeric scores will be added for each category and the team with the highest score wins the game

Global Health Starter Kit for Dental Education