

This module introduces global disease and demographic trends and considers the health implications, including oral health. It is designed to be interactive and highly visual, encouraging students to think critically about population data and draw inferences from data visualizations and graphics.

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.



Competencies:

- 1.1.1. Explain the global burden of oral diseases with regard to prevalence, distribution, and the relationship among oral disease, population trends, and global disease patterns.
- 1.1.2. Understand the essential facts about the etiology of main oral conditions and their symptoms and signs.
- 1.1.3. Describe the impact of oral diseases on well-being and quality of life, as well as its social and economic impact.
- 1.1.4. Identify and assess relevant oral health information and make sound decisions (oral health literacy).
- 2.2.1. Understand the burden and distribution of oral and associated diseases in specific community and country.
- 2.3.2. Identify and advocate to address specific oral health needs and reduce inequities and health care system deficits.

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:

- Describe major population trends at the global level
- Discuss the relationship between the global burden of infectious/communicable, non-communicable/chronic, and oral diseases
- Predict how current global trends could be affecting oral health across the world
- Explain how the epidemiologic and demographic transition theories assist in understanding the disease patterns (including oral conditions) of and their impact on a community, country, or region

Warm up: Let's think about our world!



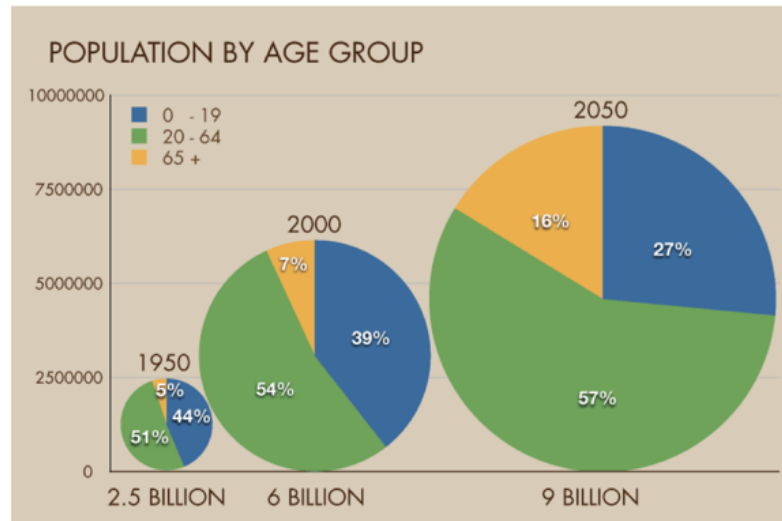
Which is more, globally:

← Older people (65+)	or	Younger people (<5)	→
← Rural people	or	Urban people	→
← Toilets	or	Cell phones	→
← Untreated cavities	or	Cancers	→

These topics (other than the third one) are covered in the module in subsequent slides. On average, globally there are more people over the age of 65 than under the age of 5, there are more people living in urban areas than rural areas, and the global prevalence of untreated caries is higher than the prevalence of all cancers combined.

*According to a UN news report released on March 21, 2013, more people in the world had a cell phone than a working toilet. Accessed on January 21, 2018 at <http://www.un.org/apps/news/story.asp?NewsID=44452#.WmSvHhRhhQc>.

Global Population Trends



What do the size of the bubbles show? (global population size in 1950, 2000, and 2050)

What do you notice happening to the size of these bubbles over time? What does this mean?

What do the different colors represent? (age groups)

Which age groups are growing the fastest over time? (older age groups)

Key messages: For the first time in human history, the number of adults aged 65 and over will outnumber children under the age of 5 globally. Overall, the global population is growing and aging. People are living longer and there are more of them.

Fun fact: The global population doubled in only 40 years, from about 3 billion in the 1960s to 6 billion by the new millennium

Graphic source:

Wan He, Daniel Goodkind, and Paul Kowal U.S. Census Bureau, International Population Reports, P95/16-1, *An Aging World: 2015*, U.S. Government Publishing Office, Washington, DC, 2016.

And

Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat, *World Population Prospects: The 2006 Revision and World Urbanization Prospects: The 2015 Revision*,

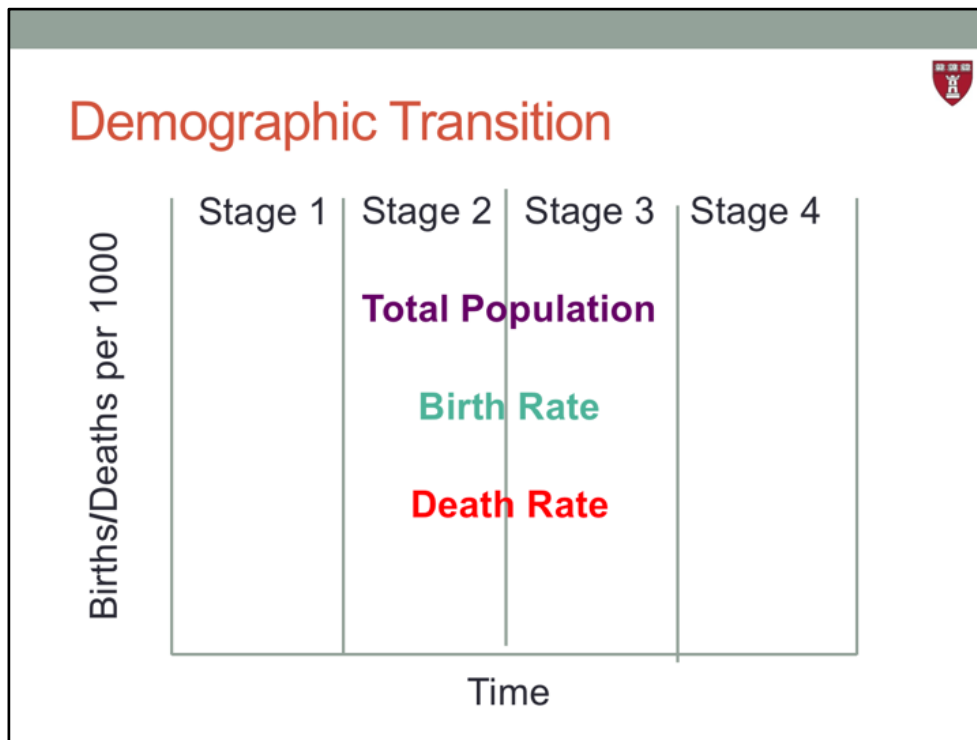
http://esa.un.org/unpd/wpp/Publications/Files/Key_Findings_WPP_2015.pdf

Reference:

Bloom, D. E., Canning, D., Sevilla J. Economic growth and the demographic transition. National Bureau of Economic Research working paper 8685, issued December 2001.

Accessed at

<https://pdfs.semanticscholar.org/b505/df708ce5eb076a51df7e9e3aed9f33d8e03c.pdf>



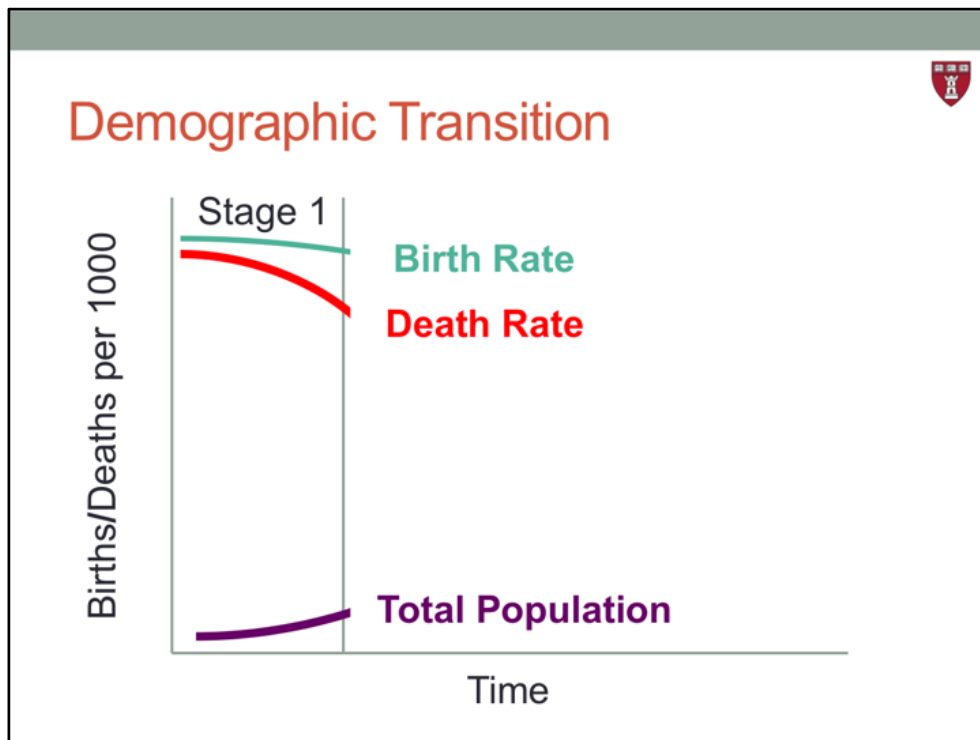
The Demographic Transition theory is a classic, general description of population trends over time as societies develop. There are four stages. For the purpose of this exercise, we will focus on the relationships between population size, birth rates, and death rates.

Reference:

Sloggett A (2015). Demography on the World Stage. In *Population Analysis for Policy and Programmes*. Paris: International Union for the Scientific Study of Population.

Available at

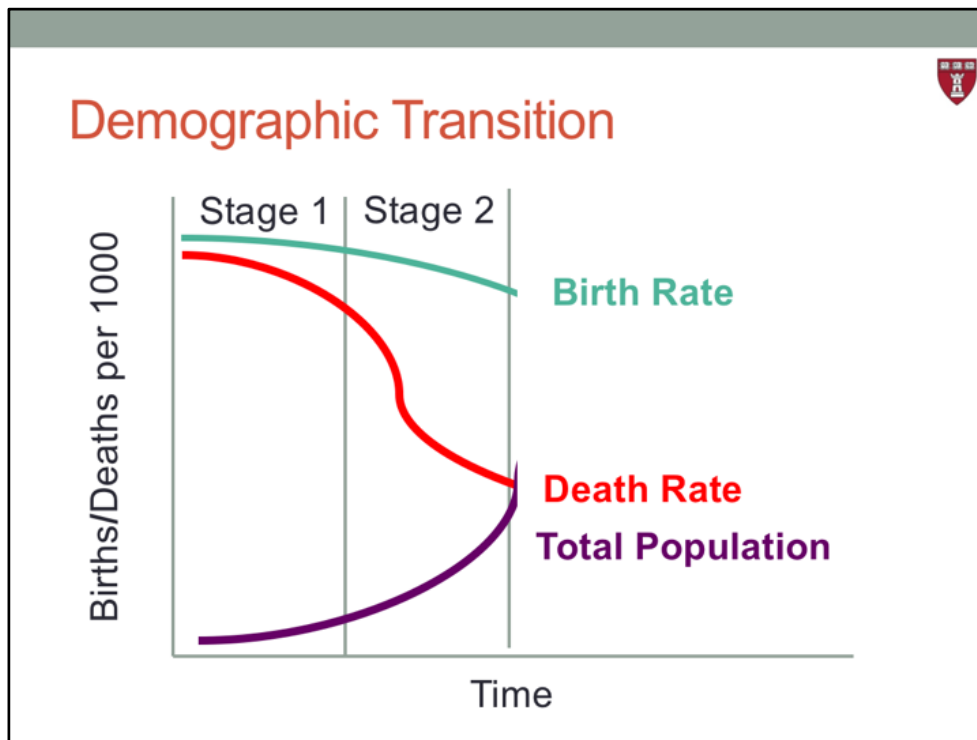
http://papp.iussp.org/sessions/papp101_s01/PAPP101_s01_010_010.html. Accessed 2018-01-16.



Stage 1 is the pre-transition stage.

- In general, what do you notice about birth rate, are they high or low?
- What about death rates?
- What does this mean for the size of the overall population? Would it be growing, shrinking, staying the same?

Stage 1 is characterized by both high birth and death rates, and the population size remains fairly stable.



Stage 2 is the early transition phase.

- What is happening to birth rates?
- What about death rates? What's the difference?
- What does this mean for the size of the population? What's happening?

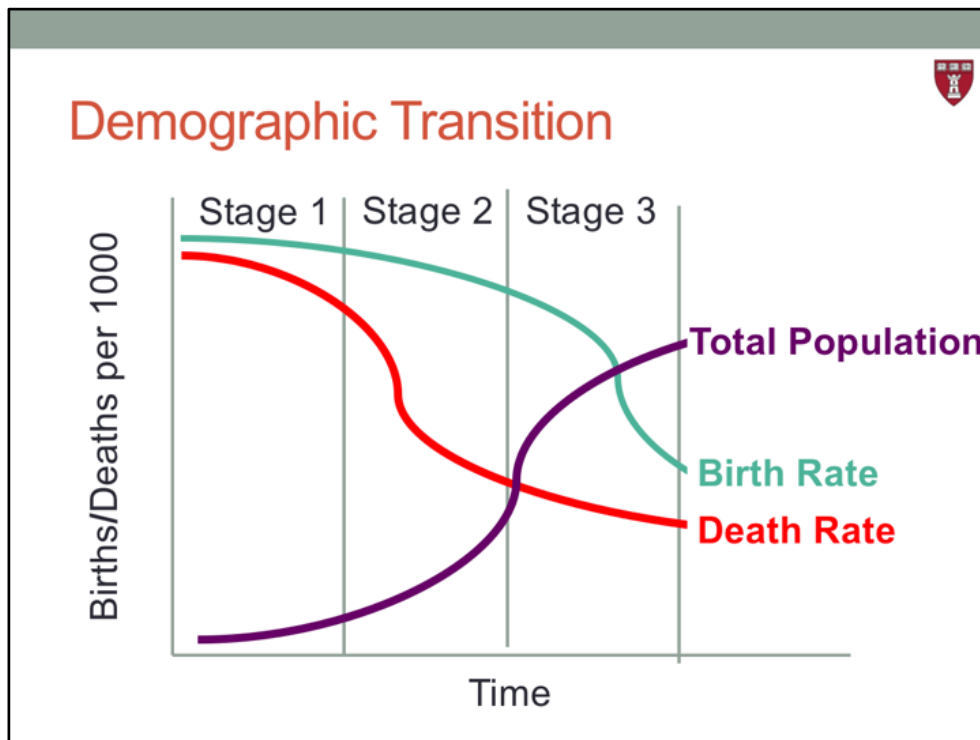
Stage 2 is characterized by falling death rates. Because birth rates remain relatively high, the population begins to grow.

Reference:

Sloggett A (2015). Demography on the World Stage. In *Population Analysis for Policy and Programmes*. Paris: International Union for the Scientific Study of Population.

Available at

http://papp.iussp.org/sessions/papp101_s01/PAPP101_s01_010_010.html. Accessed 2018-01-16.



Stage 3 is the late transition phase.

- Now what you do notice about the birth and death rates?
- What do you expect will happen to population growth?

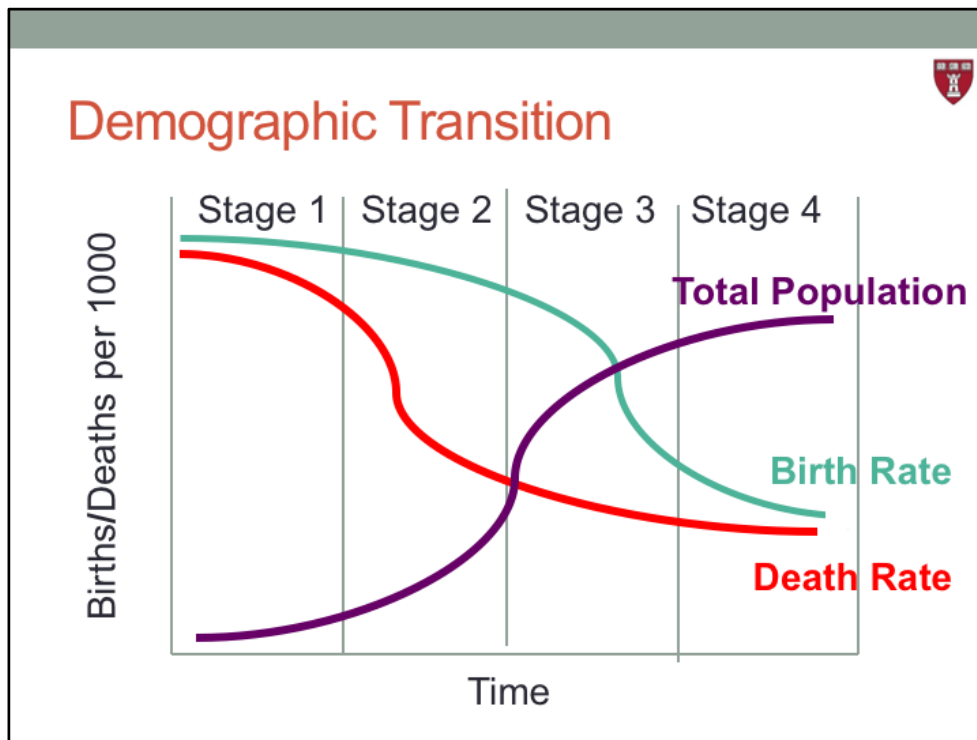
Stage 3 is characterized by falling birth rates. Death rates begin to stabilize. The population growth decelerates as a result.

Reference:

Sloggett A (2015). Demography on the World Stage. In *Population Analysis for Policy and Programmes*. Paris: International Union for the Scientific Study of Population.

Available at

http://papp.iussp.org/sessions/papp101_s01/PAPP101_s01_010_010.html. Accessed 2018-01-16.



Stage 4 is the post transition phase.

- What do you notice about birth rates and death rates?
- What's happening to the size of the population?

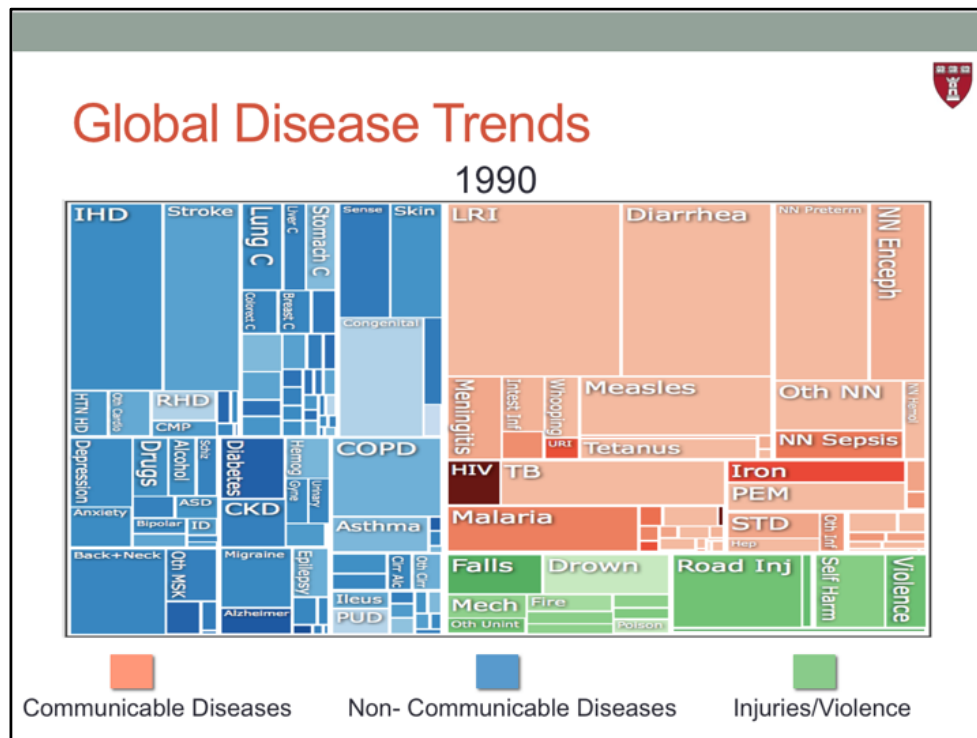
In general, both birth rates and death rates stabilize once again, but at low rates this time, and thus, population growth stabilizes as well, at a higher number this time (compared to Phase 1).

Reference:

Sloggett A (2015). Demography on the World Stage. In *Population Analysis for Policy and Programmes*. Paris: International Union for the Scientific Study of Population.

Available at

http://papp.iussp.org/sessions/papp101_s01/PAPP101_s01_010_010.html. Accessed 2018-01-16.



The first global burden of disease data date back to 1990, when data about the risks and determinants of morbidity and mortality were systematically collected across 8 regions of the world through 1990. This was the most comprehensive effort to date and introduced highly influential new disease measurements. It allowed international comparisons of morbidity and mortality rates and causes in ways that were never possible before. The study was an important collaboration between economists and health experts, emphasizing health as an economic (developmental) investment. It was a major departure from advocate-driven estimates of the burden of disease: rather than each disease-specific field calling attention to their particular area, the study attempts to assess all health conditions under the same methodology.

This graphic shows diseases and conditions classified into three categories: communicable (or infectious) diseases such as HIV/AIDS and diarrhea, non-communicable diseases (NCDs) such as cardiovascular disease, cancer, and diabetes, and violence and injuries, such as motor vehicle accidents. The size of each color represents the total burden of that category relative to the other categories.

Key message: the greatest burden is with communicable diseases.

Reference:

World Health Organization Health Statistics and Information Systems. About the Global Burden of Disease Study. ©WHO 2018.

http://www.who.int/healthinfo/global_burden_disease/about/en/

Institute for Health Metrics and Evaluation. GBD History. Accessed on January 22, 2018 at: <http://www.healthdata.org/gbd/about/history>

Graphic source:

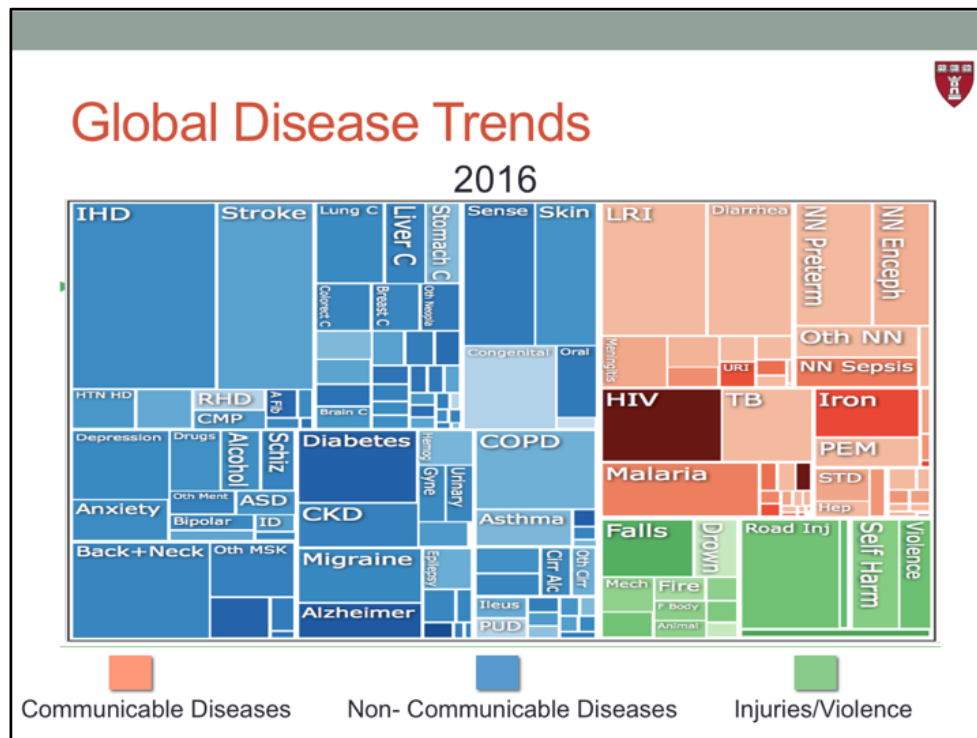
Institute for Health Metrics and Evaluation. GBD Compare. Accessed at <http://www.healthdata.org/data-visualization/gbd-compare>.

The disease burden in these illustrations is measured in DALYs, which is beyond the scope of this module. To learn more about DALYs see:

1) Murray C, Salomon J, Mathers C, Lopez A. *Summary Measures of Population Health: Concepts, Ethics, Measurement and Applications*. Geneva, Switzerland: World Health Organization; 2002.

And

2) Institute for Health Metrics and Evaluation. *The Global Burden of Disease: Generating Evidence, Guiding Policy*. Seattle, WA: IHME, 2013.



In 2010, the Institute for Health Metrics and Evaluation and other academic partners collaborated on a follow up global burden of disease study. Researchers could now compare disease rates over the years and measure trends. Data have continued to be collected and updated. Here are the latest data from 2016.

How did the colored categories change? Click back and forth between the previous slide and this one to better visualize the changes.

Key message: the greatest burden is now with NCDs. We are seeing a decline in infectious disease rates and an increase in NCD rates.

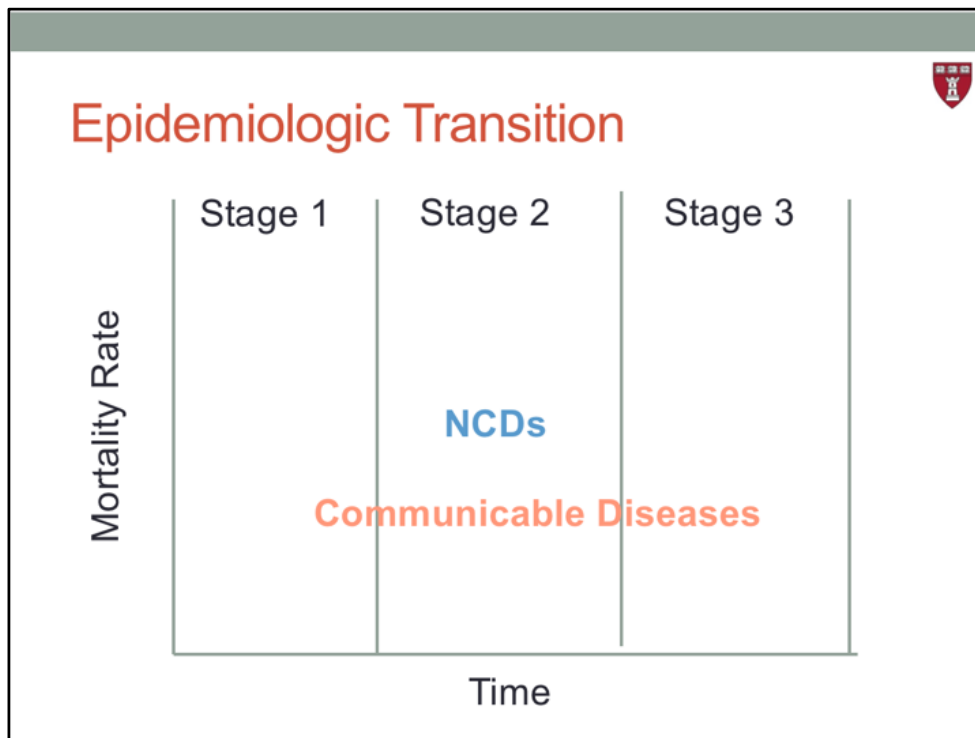
Reference:

World Health Organization Health Statistics and Information Systems. About the Global Burden of Disease Study. ©WHO 2018.

http://www.who.int/healthinfo/global_burden_disease/about/en/

Graphic source:

Institute for Health Metrics and Evaluation. GBD Compare. Accessed at <http://www.healthdata.org/data-visualization/gbd-compare>.

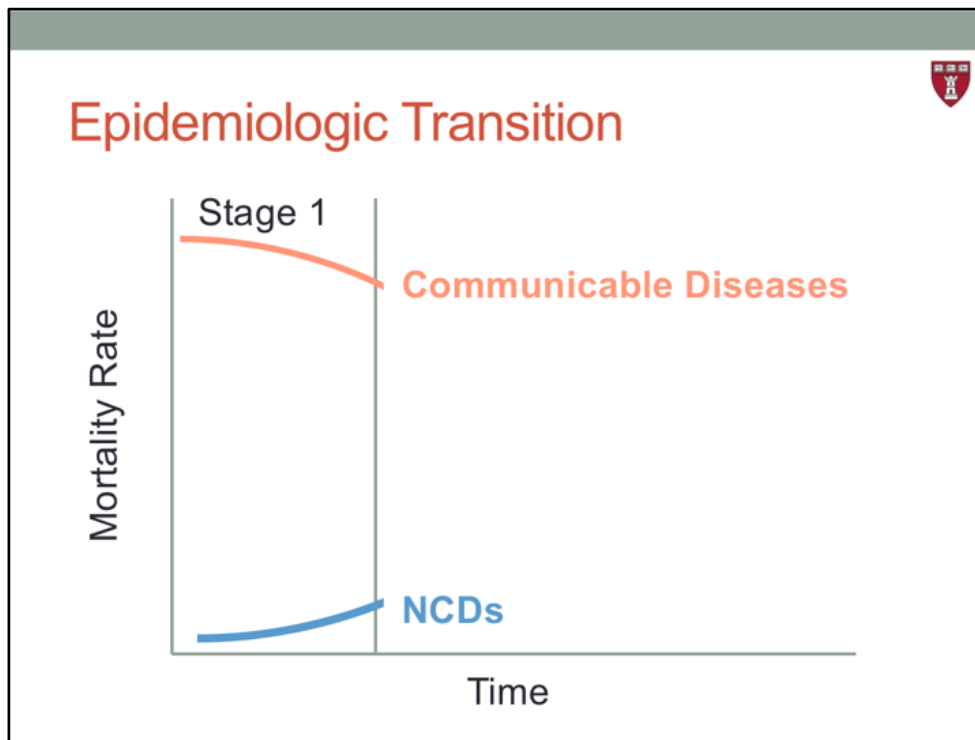


The Epidemiologic Transition theory is a general description of disease trends over time as societies develop. There are three classic stages. (Some models show four or five.) For the purpose of this exercise, we will focus on the relationships between mortality rate due to communicable and non-communicable diseases over three stages.

Reference:

Omran AR. The Epidemiologic Transition: A Theory of the Epidemiology of Population Change. *Milbank Q.* 2005 Dec; 83(4): 731–757.

Accessed <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2690264/> on 1/19/2018.



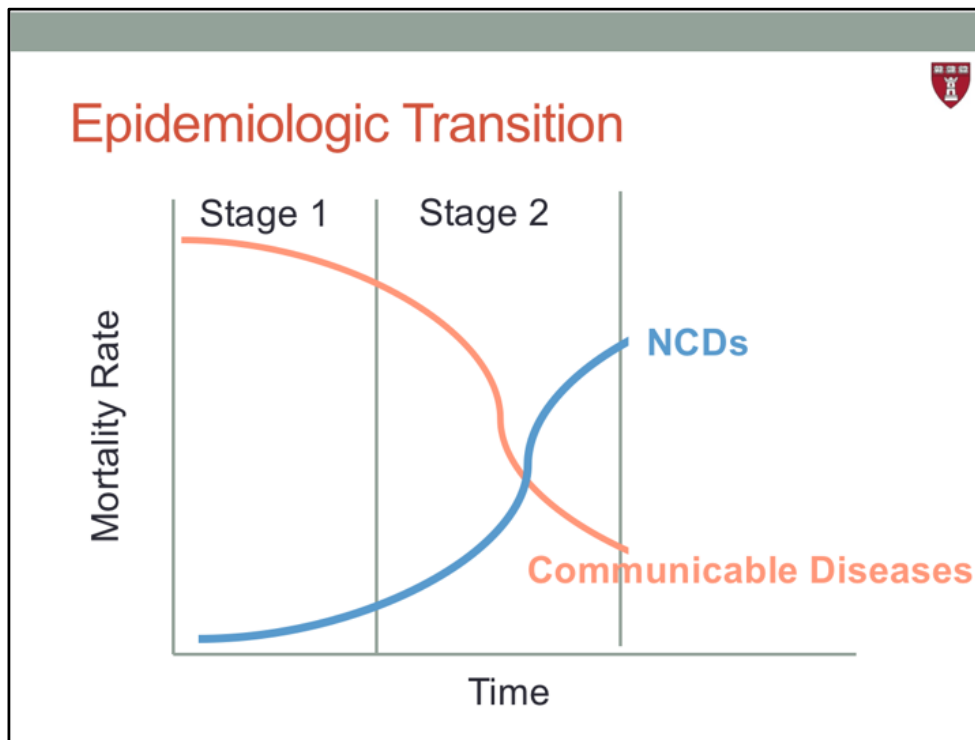
- In general, what do you notice about the mortality rate due to communicable versus non-communicable diseases?

Stage 1. Malnutrition and infections are high. Life expectancy is low. NCDs rare because people don't live long enough to develop chronic conditions and risk factors for NCDs aren't highly prevalent.

Reference:

Omran AR. The Epidemiologic Transition: A Theory of the Epidemiology of Population Change. *Milbank Q.* 2005 Dec; 83(4): 731–757.

Accessed <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2690264/> on 1/19/2018.



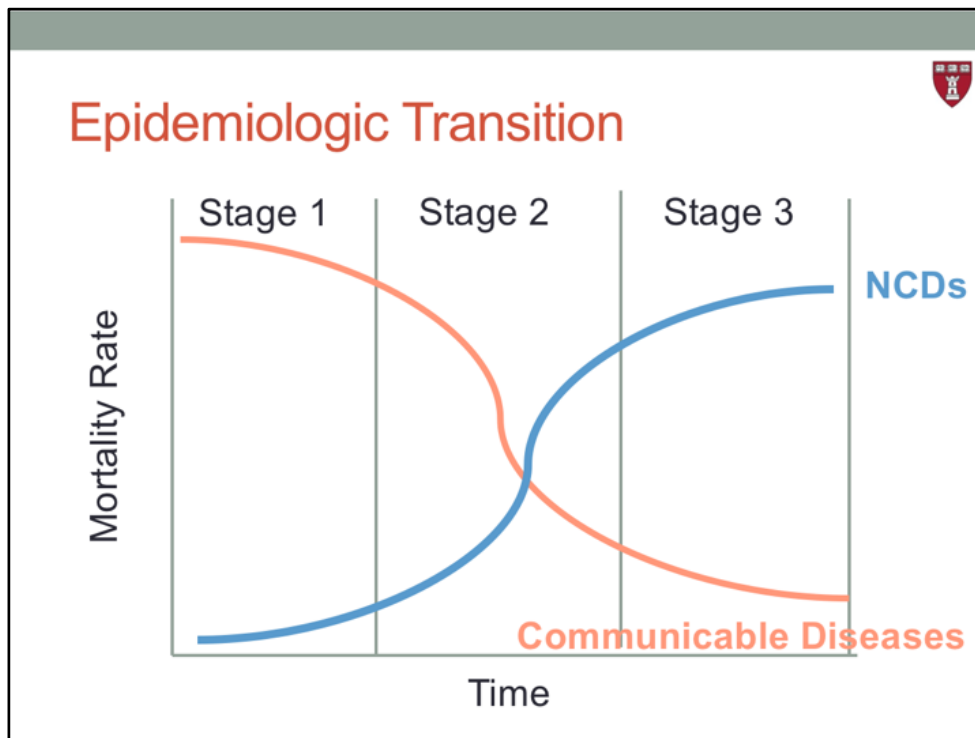
- What's happening to mortality rates in Stage 2?

Stage 2 is the Age of Receding Pandemics. Infectious and communicable disease epidemics begin to decline. Life expectancy improves; thus, NCD rates rise because people generally living longer; risk factors and disease determinants are also changing.

Reference:

Omran AR. The Epidemiologic Transition: A Theory of the Epidemiology of Population Change. *Milbank Q.* 2005 Dec; 83(4): 731–757.

Accessed <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2690264/> on 1/19/2018.



- What's happening to mortality rates due to communicable and non-communicable diseases in Stage 3?
- What happens near the end of Stage 3?

Stage 3 is the Age of Degenerative and Man-Made Diseases. Infectious and communicable disease are more rare. *Lifestyle diseases and their corresponding risk factors (diet, exercise, social habits such as tobacco and alcohol use) are major drivers or mortality rates. Near the end of Stage 3, people are remaining healthy later in life, and mortalities due to NCDs are delayed.

*(Lifestyle implies individuals have full control over their health decisions and behaviors, which is not the case. This is discussed further in Module 4- Social Determinants and Risks.)

(Stage 4 has been described in a similar way, but people remain healthy longer in life before contracting lifestyle diseases -Age of Delayed Degenerative Disease).

Many countries are experiencing the 'double-burden' of disease, both infectious and non-communicable diseases.

Reference:

Omran AR. The Epidemiologic Transition: A Theory of the Epidemiology of Population Change. *Milbank Q.* 2005 Dec; 83(4): 731–757.

Accessed <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2690264/> on 1/19/2018.

Other trends: Nutrition



The global food system is **broken**



The video hyperlinked in this slide discusses the changing global food system and its impacts on health.

Key messages: Nutrition and food patterns are changing. With increasing urbanization comes increasing access to low quality, high calorie foods. At the same time, many still don't have access to enough calories.

Source:

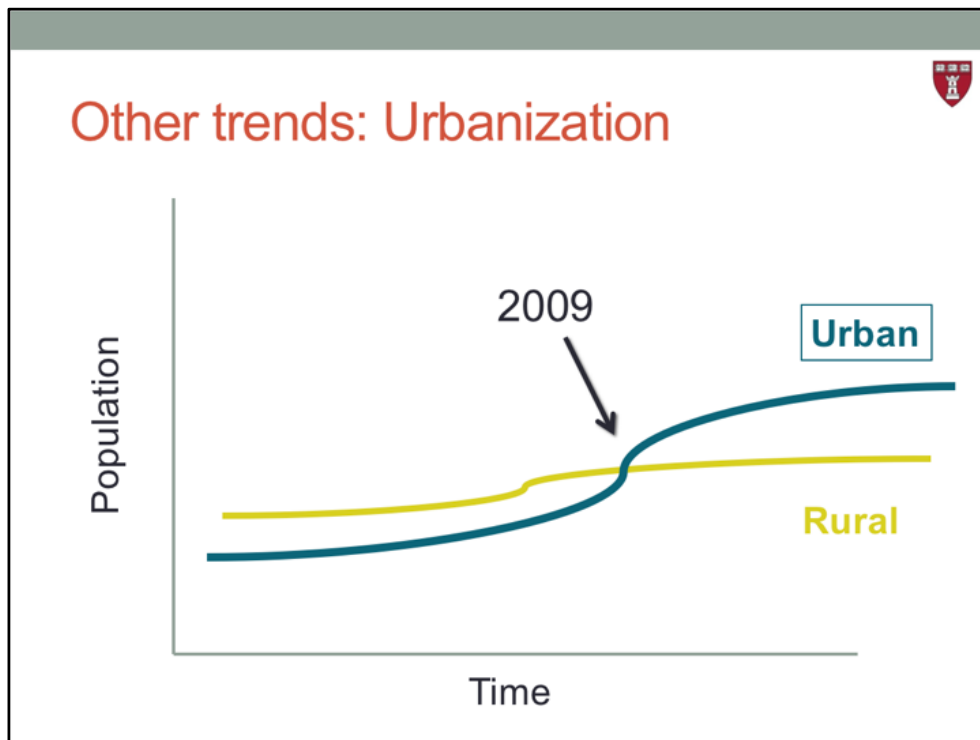
WHO Food and Agricultural Organization of the United Nations. 2nd Annual Conference on Nutrition: Better Lives, Better Nutrition.

Published December 4, 2014.

Accessed on 1/19/18 at <https://www.youtube.com/watch?v=xpr5hzhOGAM>

Additional information about the conference can be found here:

<http://www.fao.org/about/meetings/icn2/en/>.



The world is becoming more urbanized over time. By 2009, for the first time, more people were living in urban areas than rural areas globally.

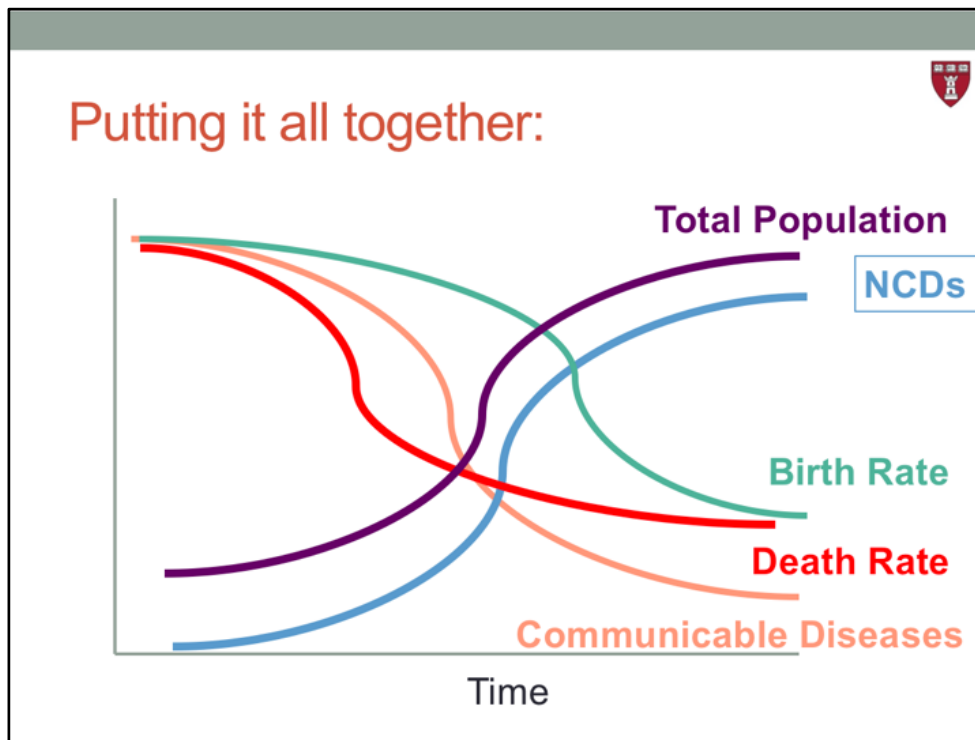
Reference:

United Nations Department of Economic and Social Affairs, Population Divisions.

Urban and Rural Areas 2009.

Accessed on 1/19/18 at

<http://www.un.org/en/development/desa/population/publications/pdf/urbanization/urbanization-wallchart2009.pdf>.



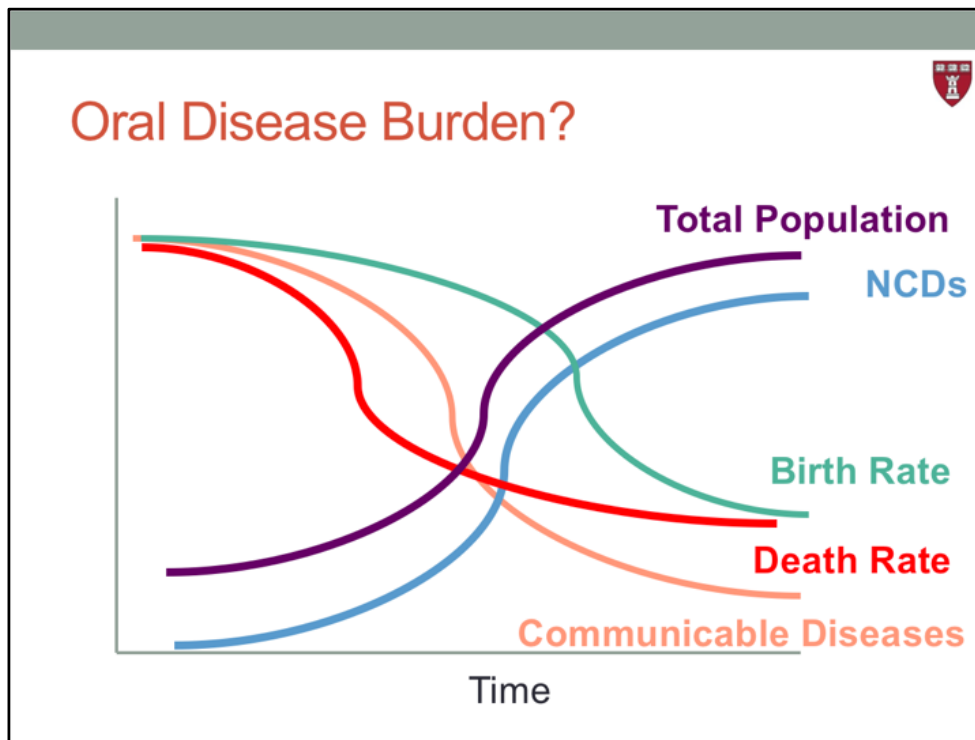
Begin to make connections between changing demographic and population patterns as they relate to health and disease patterns.

Key messages: Overall, the risk factors and determinants of health and disease are evolving as societies progress through the transitions. We see the changes listed below, including but not limited to the following:

- More industrialized and more urbanized
- Changing access to health services, housing, sanitation services, nutrition, and food sources leads to a reduction in communicable and infectious disease rates
- Mortality rates begin to decline and people begin to live longer
- Longer life spans/aging are risk factors for NCDs
- Changing lifestyles with industrialization and urbanization
- Increased consumption of high calorie, low quality foods high in fat, sugar, and salt
- Alcohol, tobacco use, and sedentary lifestyles increase risk for NDCs



What about oral health and disease?



- Do you think oral disease rates are rising? Falling? Staying the same?
- How do you think the disease burden trends impact oral diseases, if at all?
- What about changing demographic patterns like an aging population?
- How might a growing, aging population impact the dental workforce globally and its ability to meet the needs of changing populations?

OPTIONAL ACTIVITY:

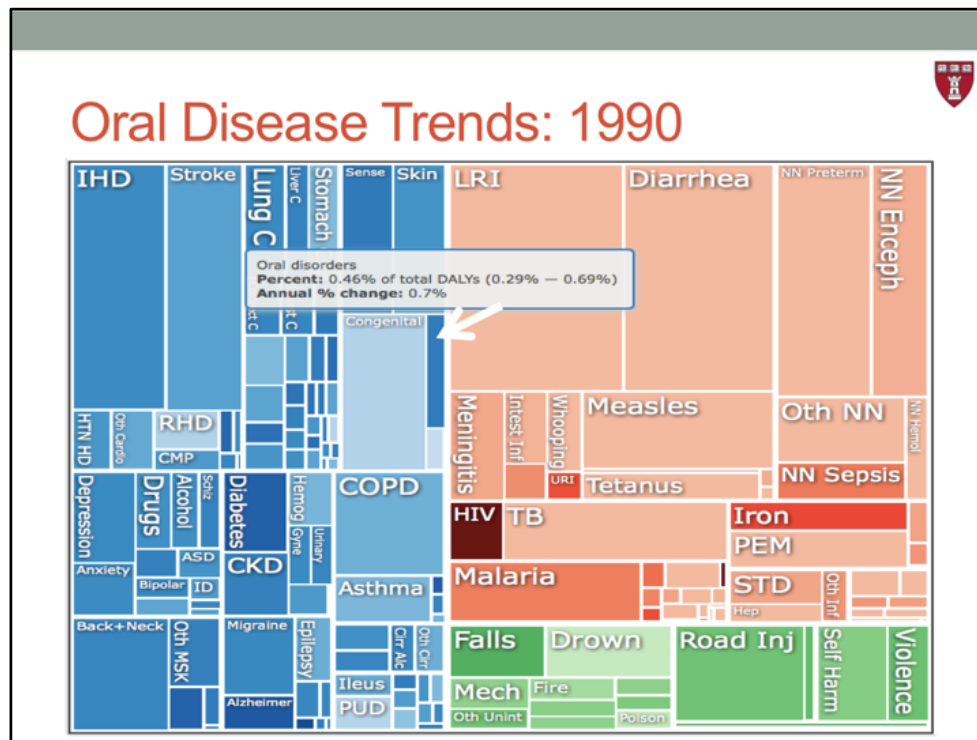
Decide where you would draw the burden of oral disease line. Refer to reputable references, such as the IHME GBD oral health data or the FDI Oral Health Atlas.

References:

Kassebaum NJ, Smith AGC, Bernabe E, Fleming TD, Reynolds AE, Vos T, Abyu GY, Alsharif U, Asayesh H, Benzian H, Dandona L, Dandona R, Kasaeian A, Khader YS, Khang YH, Kokubo Y, Kotsakis GA, Lalloo R, Misganaw A, Montero P, Nourzadeh M, Pinho C, Qorbani M, Rios Blancas MJ, Sawhney M, Steiner C, Traebert J, Tyrovolas S, Ukwaja KN, Vollset SE, Yonemoto N, Murray CJL, Marcenes W. Global, regional, and national prevalence, incidence, and disability-adjusted life years for oral conditions for 195 countries, 1990–2015: a systematic analysis for the Global Burden of Diseases, Injuries, and Risk Factors. *Journal of Dental Research*. 2017 Apr;96(4):380–387.

Summary accessed on 1/19/18 at <http://www.healthdata.org/research-article/global-regional-and-national-prevalence-incidence-and-disability-adjusted-life>.

The Challenge of Oral Disease – A call for global action. The Oral Health Atlas. 2nd ed.
Geneva: FDI World Dental Federation; 2015.



In this figure, oral disorders are highlighted from 1990. These include caries, periodontal disease, edentulism and severe tooth loss, and other oral disorders.

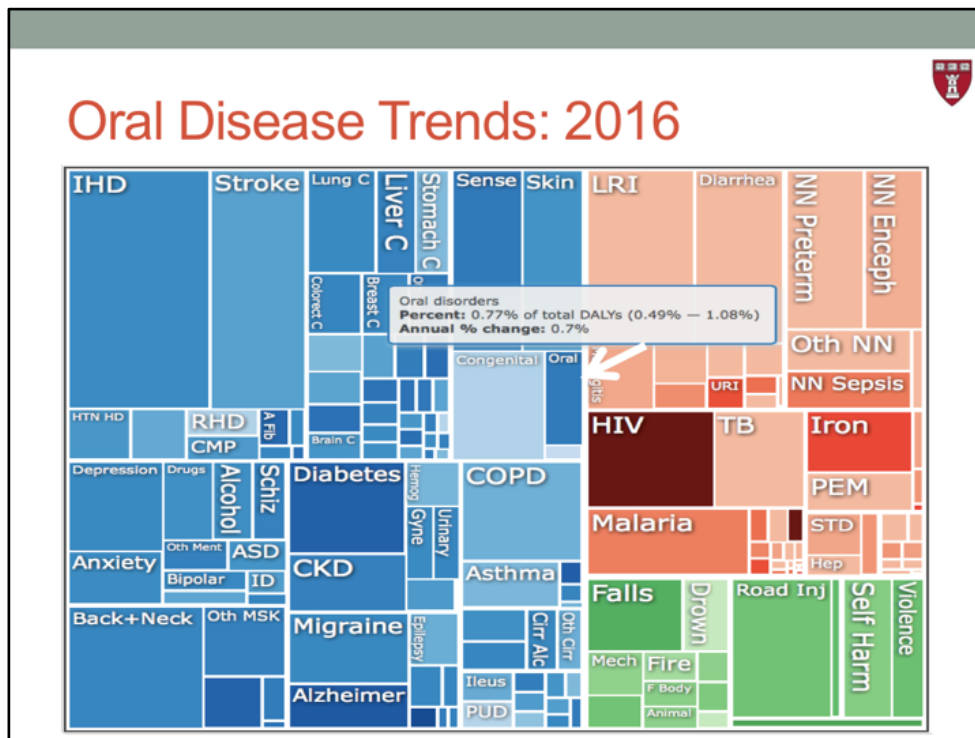
Reference:

Kassebaum NJ, Smith AGC, Bernabe E, Fleming TD, Reynolds AE, Vos T, Abyu GY, Alsharif U, Asayesh H, Benzian H, Dandona L, Dandona R, Kasaeian A, Khader YS, Khang YH, Kokubo Y, Kotsakis GA, Lalloo R, Misganaw A, Montero P, Nourzadeh M, Pinho C, Qorbani M, Rios Blancas MJ, Sawhney M, Steiner C, Traebert J, Tyrovolas S, Ukwaja KN, Vollset SE, Yonemoto N, Murray CJL, Marcenes W. Global, regional, and national prevalence, incidence, and disability-adjusted life years for oral conditions for 195 countries, 1990–2015: a systematic analysis for the Global Burden of Diseases, Injuries, and Risk Factors. *Journal of Dental Research*. 2017 Apr;96(4):380–387.

Summary accessed on 1/19/18 at <http://www.healthdata.org/research-article/global-regional-and-national-prevalence-incidence-and-disability-adjusted-life>.

Figure source:

<https://vizhub.healthdata.org/gbd-compare/treemap>



Here, oral disorders are highlighted from 2016. The size of the box is larger, indicating higher burden of oral disease rates.

OPTIONAL ACTIVITY:

Play with the interactive IHME data site and tools. Experiment with the data and find a combination of data sets that produce findings you find interesting or unexpected.
<https://vizhub.healthdata.org/gbd-compare/>

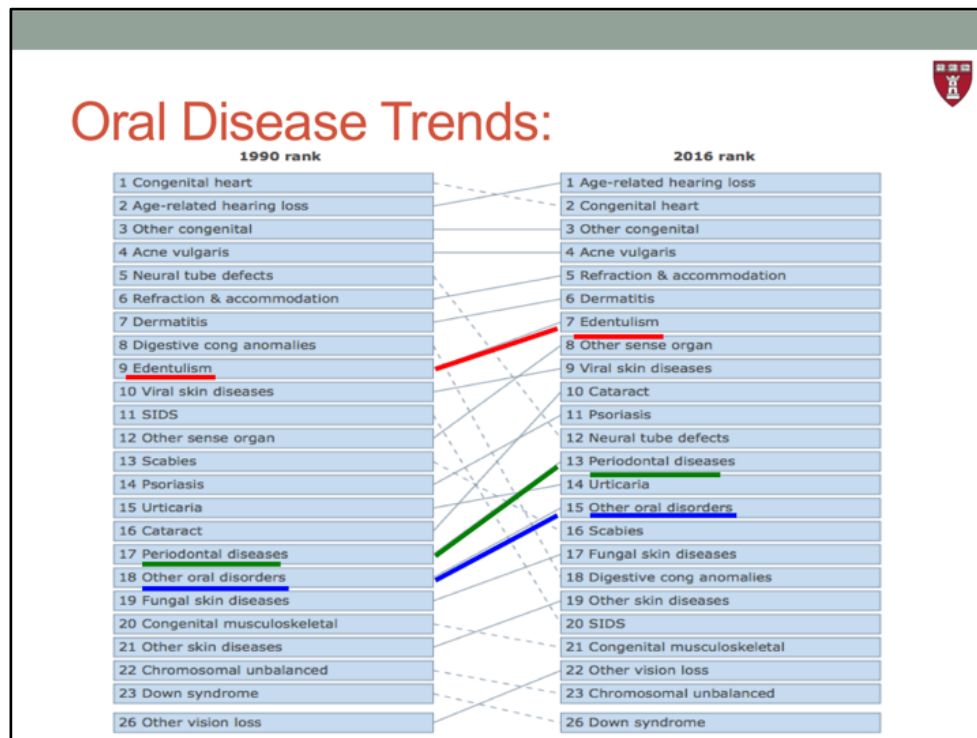
Reference:

Kassebaum NJ, Smith AGC, Bernabe E, Fleming TD, Reynolds AE, Vos T, Abyu GY, Alsharif U, Asayesh H, Benzian H, Dandona L, Dandona R, Kasaeian A, Khader YS, Khang YH, Kokubo Y, Kotsakis GA, Lalloo R, Misganaw A, Montero P, Nourzadeh M, Pinho C, Qorbani M, Rios Blancas MJ, Sawhney M, Steiner C, Traebert J, Tyrovolas S, Ukwaja KN, Vollset SE, Yonemoto N, Murray CJL, Marcenes W. Global, regional, and national prevalence, incidence, and disability-adjusted life years for oral conditions for 195 countries, 1990–2015: a systematic analysis for the Global Burden of Diseases, Injuries, and Risk Factors. *Journal of Dental Research*. 2017 Apr;96(4):380–387.

Summary accessed on 1/19/18 at <http://www.healthdata.org/research-article/global-regional-and-national-prevalence-incidence-and-disability-adjusted-life>.

Figure source:

<https://vizhub.healthdata.org/gbd-compare/treemap>



Examples of non-communicable diseases comparing their rank in DALYs 1990 to 2016.
 Oral diseases are broken down further for additional comparison.
 1990 Rank 9, 2016 Rank 7: Edentulism and severe tooth loss- on the rise
 1990 Rank 17, 2016 Rank 13: Periodontal disease- on the rise
 1990 Rank 18, 2016 Rank 15: Other oral disorders (caries, cancers)- on the rise

Reference:

Kassebaum NJ, Smith AGC, Bernabe E, Fleming TD, Reynolds AE, Vos T, Abyu GY, Alsharif U, Asayesh H, Benzian H, Dandona L, Dandona R, Kasaeian A, Khader YS, Khang YH, Kokubo Y, Kotsakis GA, Lalloo R, Misganaw A, Montero P, Nourzadeh M, Pinho C, Qorbani M, Rios Blancas MJ, Sawhney M, Steiner C, Traebert J, Tyrovolas S, Ukwaja KN, Vollset SE, Yonemoto N, Murray CJL, Marcenes W. Global, regional, and national prevalence, incidence, and disability-adjusted life years for oral conditions for 195 countries, 1990–2015: a systematic analysis for the Global Burden of Diseases, Injuries, and Risk Factors. *Journal of Dental Research*. 2017 Apr;96(4):380–387.

Summary accessed on 1/19/18 at <http://www.healthdata.org/research-article/global-regional-and-national-prevalence-incidence-and-disability-adjusted-life>.

Figure source:

<https://vizhub.healthdata.org/gbd-compare/arrow>

Oral Diseases: Fast Facts



- 3.5 billion people today have **untreated** oral diseases
- Dental caries is the **most prevalent** disease in the world
- Can negatively impact outcomes due to **other NDCs** (such as ability to control hemoglobin A1C levels when living with diabetes)
- **Negatively affect speech, nutrition, mental state, self-confidence, quality of life, ability to attend work/school, and well-being**

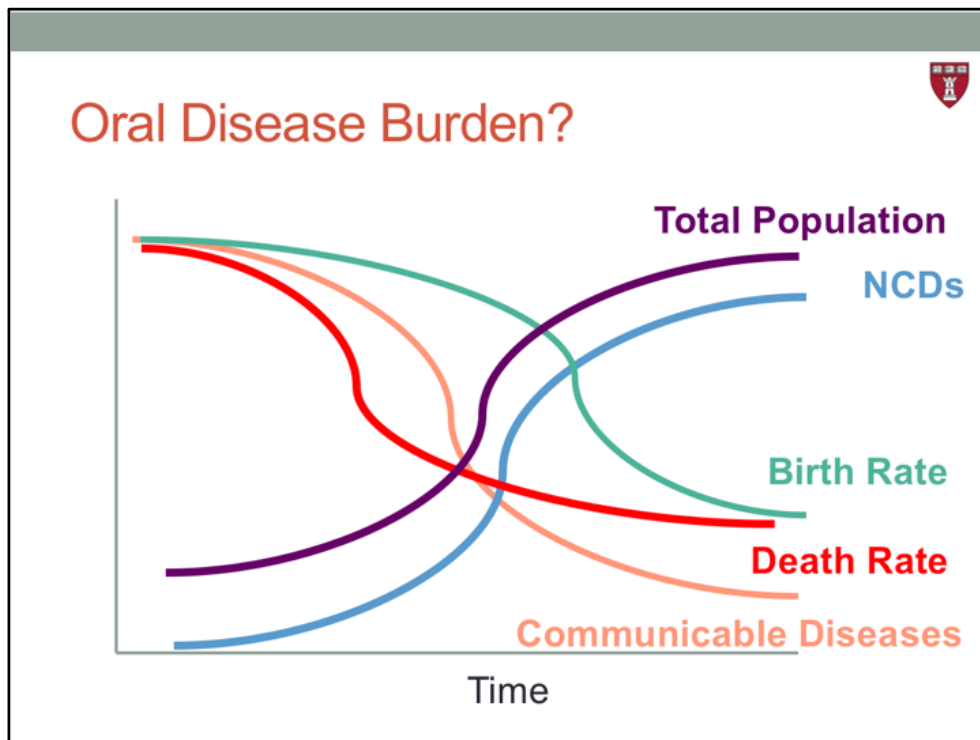
References:

The Challenge of Oral Disease – A call for global action. The Oral Health Atlas. 2nd ed. Geneva: FDI World Dental Federation; 2015.

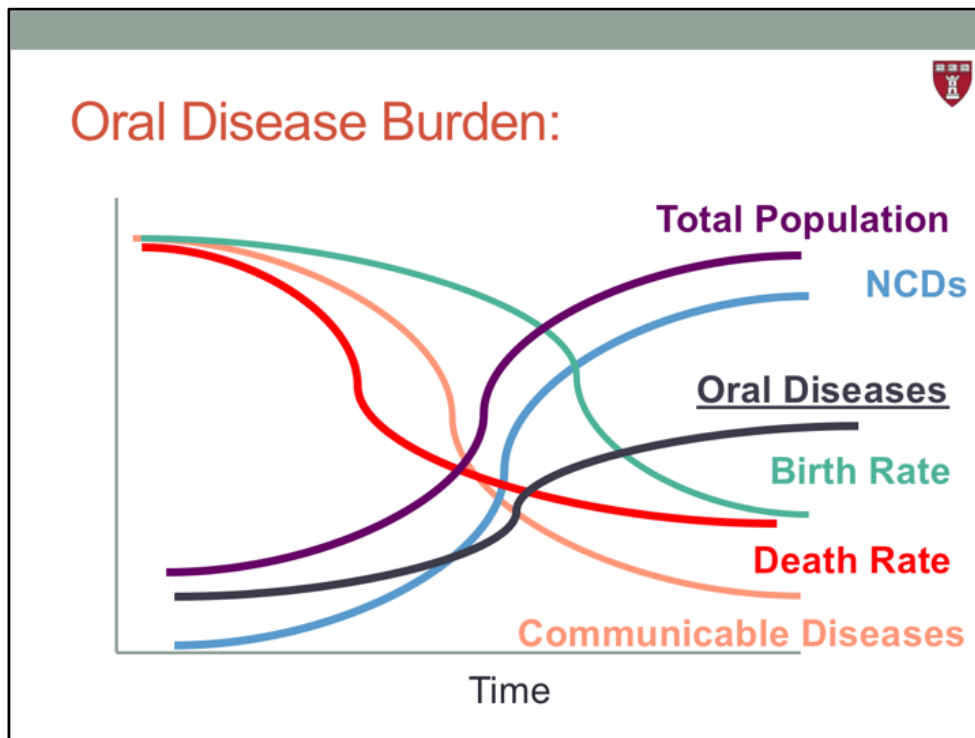
Kassebaum NJ, Smith AGC, Bernabe E, Fleming TD, Reynolds AE, Vos T, Abyu GY, Alsharif U, Asayesh H, Benzian H, Dandona L, Dandona R, Kasaeian A, Khader YS, Khang YH, Kokubo Y, Kotsakis GA, Lalloo R, Misganaw A, Montero P, Nourzadeh M, Pinho C, Qorbani M, Rios Blancas MJ, Sawhney M, Steiner C, Traebert J, Tyrovolas S, Ukwaja KN, Vollset SE, Yonemoto N, Murray CJL, Marcenes W. Global, regional, and national prevalence, incidence, and disability-adjusted life years for oral conditions for 195 countries, 1990–2015: a systematic analysis for the Global Burden of Diseases, Injuries, and Risk Factors. *Journal of Dental Research*. 2017 Apr;96(4):380–387.

Summary accessed on 1/19/18 at <http://www.healthdata.org/research-article/global-regional-and-national-prevalence-incidence-and-disability-adjusted-life>.

Demmer, RT, et al. “Periodontal status and A1C change: longitudinal results from the study of health in Pomerania (SHIP).” *Diabetes Care*, 2010; 33(5), 1037-43



Ok, let's think again. Where should we place our oral disease burden trend line?



Here is one suggested visual placement of a trend line for oral diseases, based on the previous slides. The visual is meant only to demonstrate that oral disease rates are rising along with NCD rates and population growth rates.

Take home messages for oral health and global trends:

Overall, there are more people in the world than ever before, as people are living longer and experiencing higher rates of chronic diseases.

These factors contribute to the rising rates of oral diseases.

- With more people come more teeth.
- With increasing lifespan come more teeth that need care as people age.
- With rising NCD rates come rising oral diseases due to the association of oral diseases and other diseases such as diabetes, respiratory diseases, and cancer.
- The burden of oral diseases is expected to continue to rise as populations grow, people age, diets are increasingly poor, and NDC rates increase.
- Vulnerable and disadvantaged populations experience the greatest burden of oral diseases and have the fewest resources available for prevention and management; they have other compounding challenges that impact their health, including lack of adequate sanitation and poverty.

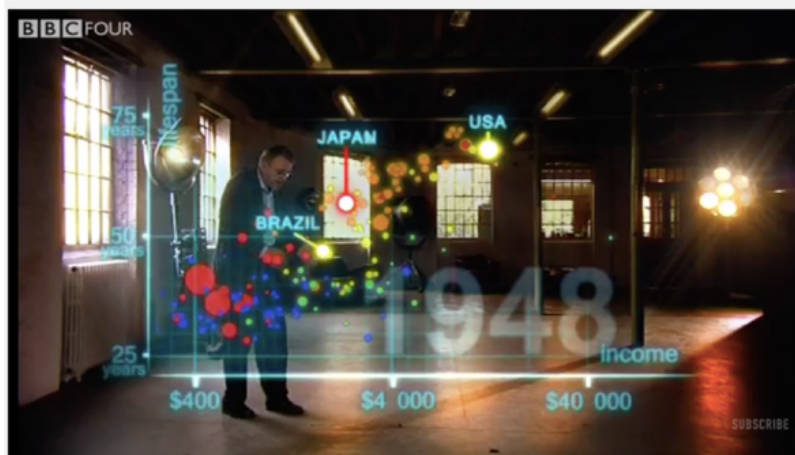
(*It should be noted that the actual burden of oral diseases is not the same prevalence rate as total NCDs but rather the trends align; the above graphic is for

visualization purposes only).

Reference:

Oral diseases: Prevention and management- Provision of oral healthcare. In: The Challenge of Oral Disease – A call for global action. The Oral Health Atlas. 2nd ed. Geneva: FDI World Dental Federation; 2015

Wrap Up



Data: Gapminder.org

VIDEO: <https://www.youtube.com/watch?v=jbkSRLYSojo>

This video was published and uploaded by the British Broadcasting Channel on November 10, 2010. Description: “Hans Rosling's famous lectures combine enormous quantities of public data with a sport's commentator's style to reveal the story of the world's past, present and future development. Now he explores stats in a way he has never done before - using augmented reality animation. In this spectacular section of 'The Joy of Stats' he tells the story of the world in 200 countries over 200 years using 120,000 numbers - in just four minutes. Plotting life expectancy against income for every country since 1810, Hans shows how the world we live in is radically different from the world most of us imagine.”

OPTIONAL ACTIVITY:

Play with the interactive GapMinder data site and tools used to create this video. Compare determinants and outcomes for countries over time. Experiment with the data until you find a combination of data sets that produce findings you find interesting or unexpected. https://www.gapminder.org/tools/#_chart-type=bubbles

For more information about GapMinder, visit: <https://www.gapminder.org>

Source:

Free material from www.gapminder.org

[http://www.gapminder.org/world/#\\$majorMode=chart\\$;shi=t;ly=2003;lb=f;il=t;fs=11;al=30;stl=t;st=t;nsI=t;se=t\\$wst;tts=C\\$ts;sp=5.59290322580644;ti=2013\\$zpv;v=0\\$inc_x;mmid=XCOORDS;iid=phAwcNAVuyj1jiMAkmq1iMg;by=ind\\$inc_y;mmid=YCOORDS;iid=phAwcNAVuyj2tPLxKvvnNPA;by=ind\\$inc_s;uniValue=8.21;iid=phAwcNAVuyj0XOoBL_n5tAQ;by=ind\\$inc_c;uniValue=255;gid=CATID0;by=grp\\$map_x;scale=log;dataMin=194;dataMax=96846\\$map_y;scale=lin;dataMin=23;dataMax=86\\$map_s;sma=49;smi=2.65\\$cd;bd=0\\$inds=;example=75](http://www.gapminder.org/world/#$majorMode=chart$;shi=t;ly=2003;lb=f;il=t;fs=11;al=30;stl=t;st=t;nsI=t;se=t$wst;tts=C$ts;sp=5.59290322580644;ti=2013$zpv;v=0$inc_x;mmid=XCOORDS;iid=phAwcNAVuyj1jiMAkmq1iMg;by=ind$inc_y;mmid=YCOORDS;iid=phAwcNAVuyj2tPLxKvvnNPA;by=ind$inc_s;uniValue=8.21;iid=phAwcNAVuyj0XOoBL_n5tAQ;by=ind$inc_c;uniValue=255;gid=CATID0;by=grp$map_x;scale=log;dataMin=194;dataMax=96846$map_y;scale=lin;dataMin=23;dataMax=86$map_s;sma=49;smi=2.65$cd;bd=0$inds=;example=75)



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Module 3: Back to Basics-Primary Care

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Module 5: Ethics and Sustainability

Global Health Starter Kit for Dental Education



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