

COVID-19 PANDEMIC IN MADHYA PRADESH



Priya Mehra MBA HM section -B
Roll No - 0962
priyamehra.j19@iihmr.in

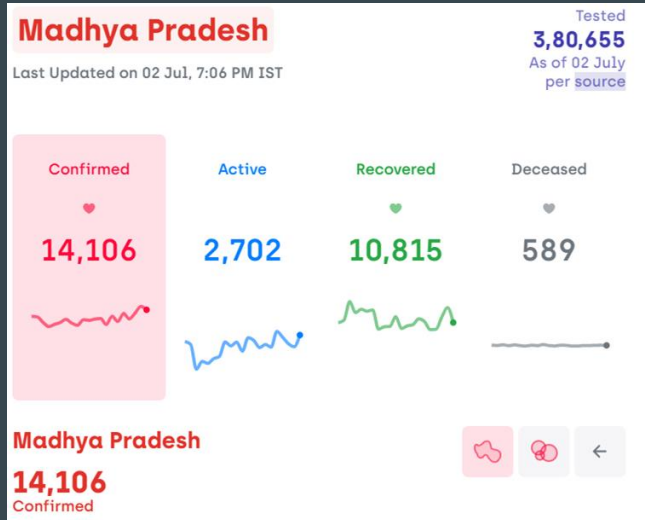
Dr. Sujata Verma
Assistant Professor
sujataverma@iihmr.edu.in

Introduction

- COVID-19, is associated with the respiratory disorder in humans. COVID-19 was declared a **pandemic disease on 11th March,2020 by WHO.**
- The First case of COVID-19 in India, which originated in China was confirmed on January 30th in Kerala.
- The First cases in **Madhya Pradesh** was confirmed on 20 March 2020. These were the first four cases in Jabalpur, Madhya Pradesh.
- India accounts for almost **one-fifth of the world's population** and is the second leading country in terms of population in the world.
- India has been following a nationwide lockdown since 22-March-2020, which was a one-day lockdown, followed by a 21-day lockdown after two days. This was followed by three more phases of lockdowns through 15th April to 31st May, 2020.
- To improve the financial instability caused by the lockdown, and bringing life back to normal, the next **two phases to unlock (1 June - 31st July)** focus jump starting the economy.

Introduction

India on 6th June surpassed Spain and became the **5th worst hit nation** by the ongoing pandemic disease by crossing the tally over **2,43,733** according to John Hopkins University Data.



Statistics

Country	Infected	In 24h	Deaths	Recovered	Active Cases	Serious
USA	2,783,705	+ 3,752	130,869	1,168,422	3,742	1,484,414
Brazil	1,456,969	+ 3,600	60,813	916,147	89,281	480,009
Russia	661,165	+ 6,760	9,683	428,978	6,047	222,504
India	612,486	+ 7,266	17,996	366,027	6,131	228,463
UK	313,483	+ NA	43,906	NA	NA	NA

Last updated in June 2020 (ref-<https://covid19.who.int/>)

An Observational study was conducted for **Madhya Pradesh** state by actively collecting data from various websites, newspapers, journals, articles on the topics like mortality, morbidity, age and sex parameters of the disease and about recovery and death indicators. This study talks about the current situation of COVID-19 in India more focusing on Madhya Pradesh and impact of it along with the measures taken by the Government.

Last updated on 2nd July 2002 (Ref - <https://www.covid19india.org>)

Introduction

India has 471.49 per million confirmed cases and 172 out of every 1 million people in **Madhya Pradesh** have tested positive for the virus

Active cases

19.15%

Mortality rate

4.18%

Recovery rate

76.67%

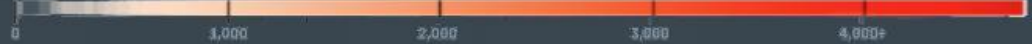
Average growth rate

1%

Tests per Million

4,629

CONFIRMED CASES :



Population
8,22,32,000

Based on 2019 population projection by NCP report

Confirmed Per Million ⓘ

171.54

India has 471.49 CPM

172 out of every 1 million people in Madhya Pradesh have tested positive for the virus.

Active ⓘ

19.15%

For every 100 confirmed cases, 19 are currently infected.

Mortality Rate ⓘ

4.18%

For every 100 confirmed cases, 4 have unfortunately passed away from the virus.

Recovery Rate ⓘ

76.67%

For every 100 confirmed cases, 77 have recovered from the virus.

Avg. Growth Rate ⓘ

1%

26 Jun - 03 Jul

In the last one week, the number of new infections has grown by an average of 1% every day.

Tests Per Million ⓘ

≈ 4,629

As of 1 day ago

For every 1 million people in Madhya Pradesh, 4,629 people were tested.

Literature review

S No	Title	Author	Reference
1	Prediction of COVID-19 Disease Progression in India : Under the Effect of National Lockdown	Sourish Das	https://arxiv.org/abs/2004.03147
2	A vulnerability index for the management of and response to the COVID-19 epidemic in India: an ecological study	Rajib Acharya, Akash Porwal	https://www.sciencedirect.com/science/article/pii/S2214109X20303004
3	Modeling and forecasting the COVID-19 pandemic in India	Kankan Sarkara, Subhas Khajanchi	https://www.sciencedirect.com/science/article/pii/S096007792030446X
4	Short-term forecasts of COVID-19 spread across Indian states until 1 May 2020	Neeraj Poonia, Sarita Azad	https://arxiv.org/abs/2004.13538
5	Evaluation and prediction of COVID-19 in India: A case study of worst hit states	Danish Rafiq, Suhail Ahmad, Suhail Mohammad, Abid Bazaz	https://www.sciencedirect.com/science/article/pii/S0960077920304124

Objectives

- To study the current status of the pandemic disease COVID-19 in Indian state of Madhya Pradesh up till 2nd July 2020.
- To study the demographic of disease age and sex wise.
- To study indicators such as mortality, morbidity, recovery rate.
- To enlist the measures taken by the government nationwide and at community level in lockdown and unlock phases and some specific measures taken by M.P government



Affected states of India

Last updated on 2nd July 2002 (Ref -

<https://www.covid19india.org>)

Top 5 affected states of India

SNo	States	Confirmed	Active	Recovered	Diseased
1	Maharashtra	1,86,626	77,260	1,01,172	8,178
2	Tamil Nadu	98,392	41,050	56,021	1,321
3	Delhi	92,175	26,304	63,007	2,862
4	Gujarat	33,999	7,511	24,601	1,887
5	Uttar Pradesh	24,825	6,869	17,221	735

Bottom 5 affected states in India

Sno	State/UT	Confirmed	Active	Recovered	Diseased
1	Arunachal Pradesh	232	160	71	1
2	Mizoram	162	36	126	0
3	Andaman & Nicobar Island	116	65	51	0
4	Sikkim	101	49	52	0
5	Meghalaya	62	18	43	1

Coronavirus in Madhya Pradesh

M.P. stands on **12th position** with cases number

(last updated on 2nd July, 2020)

Confirmed : **14,106**

Active : **2,702**

Recovered: **10,815**

Diseased : **589**

TOP 5

DISTRICT CASES

INDORE 867

BHOPAL 559

MORENA 422

GWALIOR 298

BHIND 98

BOTTOM 5

DISTRICT CASES

SHAHDOL 2

DINDORI 1

UMARIA 1

ANNUPUR 0

MANDLA 0

Top districts

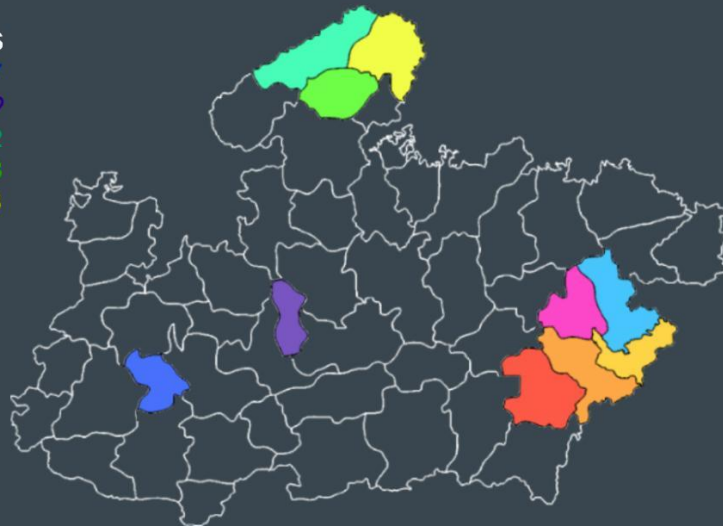
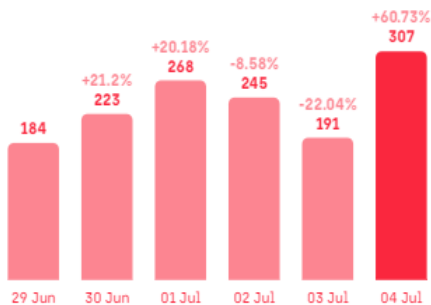
4,810 Indore

2,984 Bhopal

864 Ujjain

618 Morena

464 Gwalior



Coronavirus in Madhya Pradesh

The state of Madhya Pradesh is no different, as the first case was registered on 20TH of March 2020, it has risen to 14,106 since then (as of 2th July, 2020), and continues to threaten us with inflating numbers and doubling in as few as four day time periods.

Madhya Pradesh

Last Updated on 02 Jul, 7:06 PM IST

Tested
3,80,655
As of 02 July
per source

Confirmed

14,106

Active

2,702

Recovered

10,815

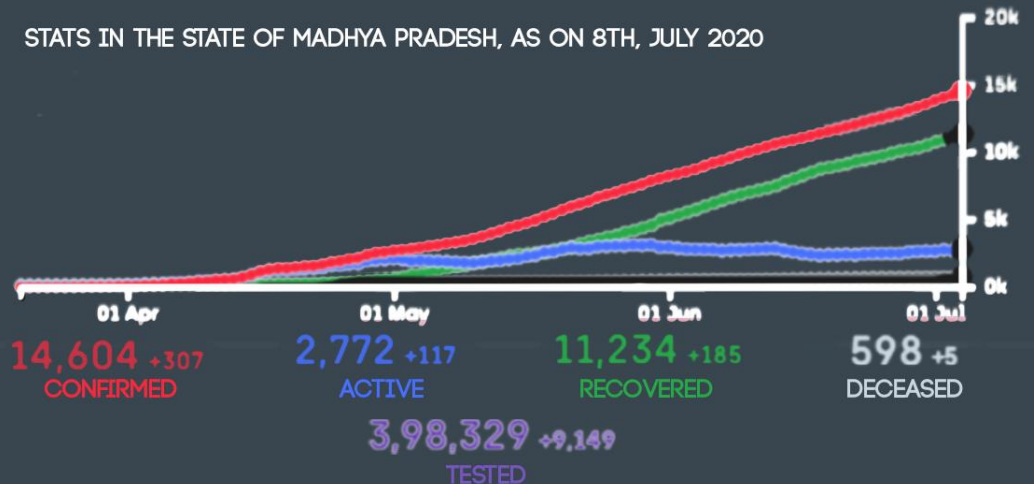
Deceased

589

Madhya Pradesh

14,106
Confirmed

STATS IN THE STATE OF MADHYA PRADESH, AS ON 8TH, JULY 2020

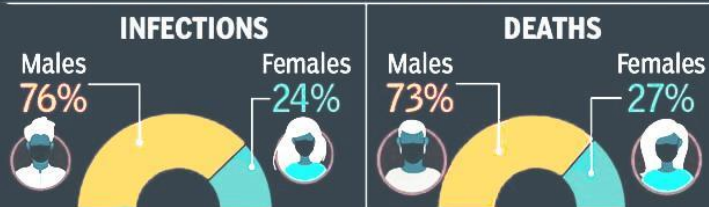


https://en.wikipedia.org/wiki/COVID-19_pandemic_in_Madhya_Pradesh

Age and sex distribution

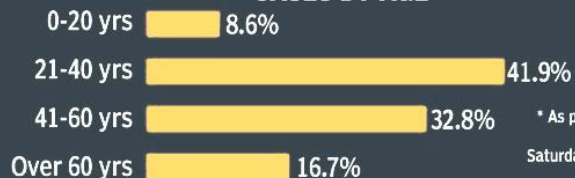
This image depicts Males are more susceptible to coronavirus than Females and even have a high mortality rate.
Highest number of cases is seen in the age group between 21-40 yrs as the younger population of India is highest.

MALE: FEMALE INFECTION RATIO 3:1



86% of dead had conditions such as diabetes, hypertension, heart and kidney disease, etc

CASES BY AGE*



* As per health ministry data released on Saturday. Current figures may vary slightly

Last updated in June 2020 (ref-<https://timesofindia.indiatimes.com/>)



FEMALE
27%



MALE
73%

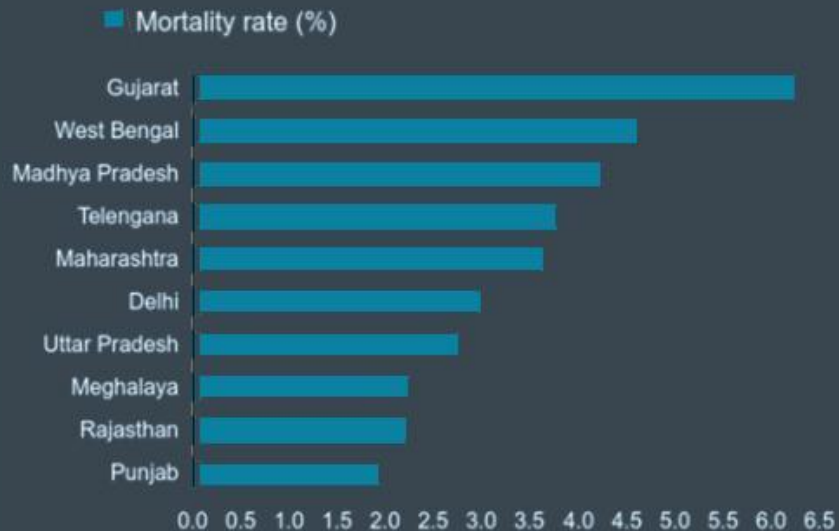
AGE GROUP	FEMALE %	MALE %
0-9	41.30	58.70
10-19	48.35	51.65
20-29	29.26	70.74
30-39	20.46	79.54
40-49	21.90	78.10
50-59	25.31	74.69
60-69	26.36	73.64
70-79	35.44	64.56
80-89	60.00	40.00
90-99	0.00	100.00

Last updated in June 2020 (ref-<https://timesofindia.indiatimes.com/>)

Death Rate

Mortality rate on 4th July was 4.07%

Medical Experts believe that the reason for lower mortality rate in India is accredited to higher percentage of young population and decision of an early lockdown



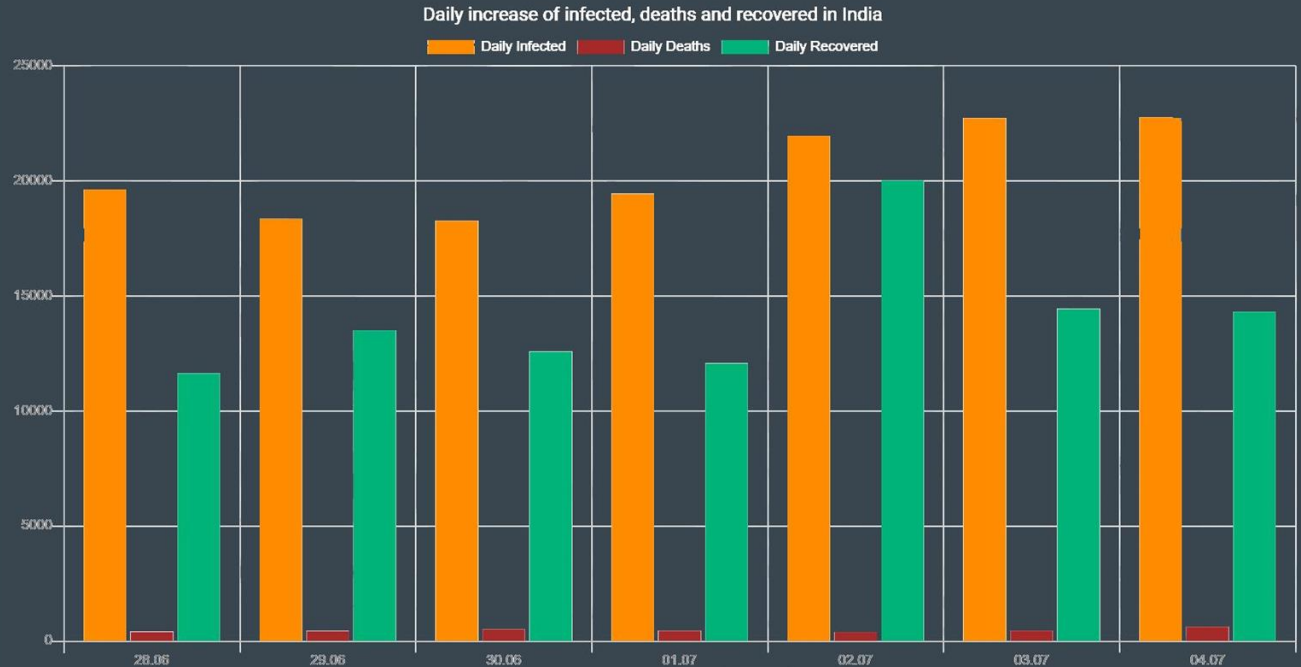
Recovery Rate

India ranks 4th position among the worst hit countries by coronavirus disease pandemic.

However, the recovery rate has improved in the country in the past two months from 11% to 60.73%.

On **3rd july 2020**, nearly **60.73%** of the total COVID-19 patients in the country were reported either cured or discharged from hospitals.

ON 1st July, a sharp rise in the number of COVID patients was observed with 20,033 cured patients taking the cumulative figure to 3,79,891.



Practices adopted by Government/Non-Government Organisations to control spread of COVID-19

PHASES

Lockdown Phase-1 (25th March - 14th April)

Lockdown Phase-2 (15th April - 3rd May)

Lockdown Phase-3 (4th May - 17th May)

Lockdown Phase-4 (18th May - 31st May)

Unlock 1.0 Phase-5 (1st June - 30th June)

Unlock 2.0 Phase 6 (1st July - 31st July)

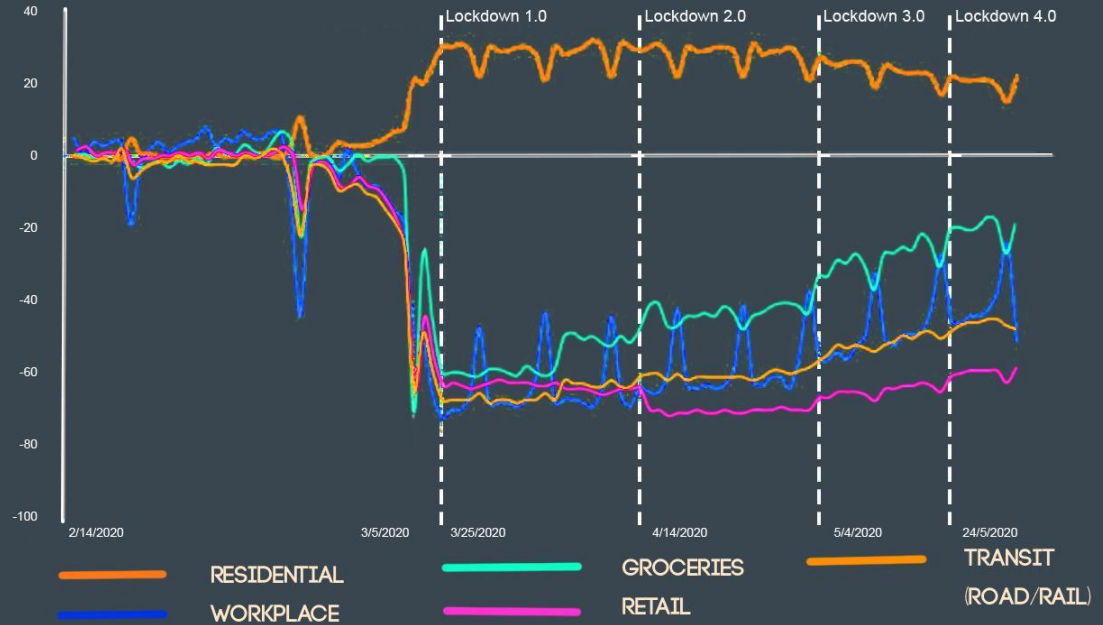
Cases in Madhya Pradesh Phase wise

PHASE	CONFIRMED CASES
Lockdown Phase-1 (25th March - 14th April)	741
Lockdown Phase-2 (15th April - 3rd May)	2096
Lockdown Phase-3 (4th May - 17th May)	2140
Lockdown Phase-4 (18th May - 31st May)	3112
Unlock 1.0 Phase-5 (1st June - 20th June)	5504
Unlock 2.0 Phase 6 (1st July - 31st July)	513

As you can see there is an increase in cases number in the Unlock phase as compared to lockdown phases.

Phase 1 Lockdown “JANTA CURFEW”- 25th March-14th April (21 Days)

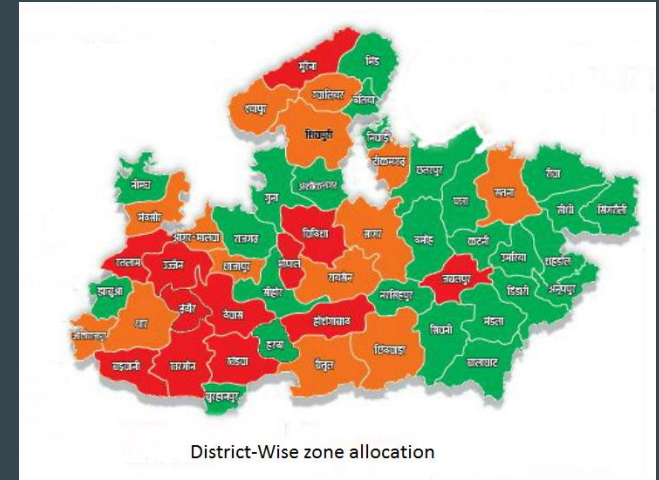
- On March 25th 2020 the Prime Minister announced a **21-day nationwide lockdown**.
- **International and domestic travel** of tourists was **banned** within and outside the countries of the world to prevent further spread of this disease.
- **Mass gatherings** at public places were strictly **prohibited** with strong instructions to wear a mask before leaving their home.
- People are advised to follow **social distancing**
- **An expected consistent surge in pharma and groceries** can also be noticed from the graphs.



PUBLIC MOBILITY THROUGH THE PANDEMIC

Phase 2 lockdown - 15th April - 3rd May (19 Days)

- As Prime Minister, Narendra Modi announced an extension of the first lockdown, till May the 3rd.
- In the states which have reported six or more cases in particular areas were marked as **hotspots** and are completely quarantined to prevent the spread of the infection in the society.
- Areas were marked as **red, orange and green zones** according to the infected population reports, with green being least infected and red being most infected and control over activities were imposed accordingly.
- **Contactless delivery systems** were established by many shopkeepers where shopkeepers will leave your order at your doorstep and you can collect it once the person has left to prevent the spread of infection by having minimal or no contact.
- The police forces were passed strict orders to monitor and close off any area suspected to be infection hotspots, and as any new cases emerged the area was quarantined with prohibitions to enter or exit the area under all circumstances.
- As time progressed and stocks dwelled, **transit facilities** and necessary businesses were **allowed** to transit between zones to restock goods to be provided to the public, among them cargo trains, planes busses were provided with relaxations to transport goods across borders.



Phase 2 lockdown - 15th April - 3rd May (19 Days)

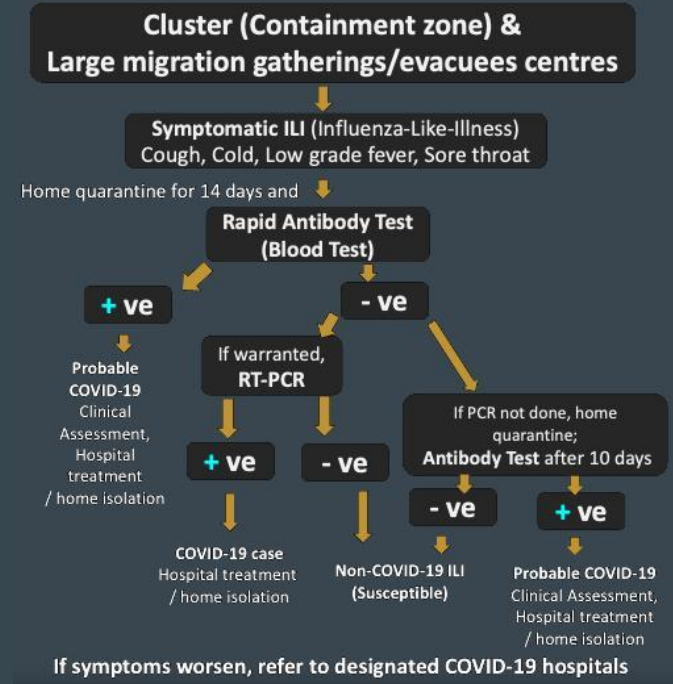
- Banks and other essential services were also provided with this relaxation.
- CM of Madhya Pradesh Shivaraj Singh Chouhan on 20th April announced
 - ◆ **MP Mukhyamantri Pravasi Majdoor Sahayata Yojana App** in which every worker who is stuck amid lockdown will be provided with 1000Rs in their respective account.
 - ◆ **Jivan Shakti Yojana or MP Mask Yojana** this scheme was launched for females living specifically in urban areas. These females can earn without stepping out the door from their home only. Females under this scheme will make masks and the government will pay them 11 rs per mask.

Phase 3 Lockdown - 4th May-17th May (14 days)

- By May , **migrants and stranded citizens** like students were given special **permission to travel** across borders through services provided by the government
- New restrictions and definitions for the zones were enforced, with half capacity functioning of businesses in green zones, transit through no public but private means in orange zones, and full effect lockdown in red zones.
- Doubling rates now defined the zone type as **high rates** meant **red zone** and **low rates** being **green**, the situation was revised every twenty-one days and monitored under high stress, allowing zones to change state as per the case count of the region.

Phase 4 lockdown - 18th May-31st May (14 Days)

- As the lockdown progressed the **central government left decision making matters into the hands of the state government** as the situation highly varied.
- Madhya Pradesh remained highly contagious overall forcing the state to take severe measures. **Madhya Pradesh government adopts "Jatkhedhi Model "** which locates an infected case, quarantines them and tests radially outwards to avoid further spread of the virus, determining new updated zones to pinpoint the spread in micro scales and avoid further spread
- As the economy suffered workplaces were allowed to extend working hours from eight to twelve in an attempt to resume usual financial status
- As the migrant population reached state borders, Madhya Pradesh Chief minister, Shivraj Singh Chauhan setup **new bus and food services to help migrants travel** from state borders to respective hometown with safety.
- On May 27th, through a letter to the chief minister the central government decided to **adopt the "Kerala model"** to tackle the virus which proved to be the most effective under the circumstances.
- Special awareness campaigns** were enforced to allow citizens to understand the risk and how to avoid getting infected. Public announcements guiding through the steps on how to avail services if one was infected were widely enforced round the clock to help the illiterate be informed.



Phase 5 Unlock 1.0 - 1st June-30th June (30 Days)

- Through special orders led by the central government, the state government started to withdraw the curfew with an economic centric approach.
- While the red zones remained secluded, activities were allowed in the green and orange zones as per instructions, retaining the half workforce clause in the orange zones and minimal restriction in the green.
- After being closed for almost 2 months **malls got opened in M.P** with making sure all the safety measures are followed by everyone like wearing a mask and having Aryog-Setu app on phone is checked and temperature of each and every person before entering the mall is checked.
- **Dine-in** in the Food court and **Entertainment zone**(cinema hall, playing zone) **gyms, spas, swimming pools, bars, auditorium, playing areas will remain closed. Educational institutes** remain closed till further notice.
- Hotels and Restaurants will open with allowing only 50% seating availability.
- **Night curfews** were ordered to be in effect from **9PM to 5AM**, with limited restriction to inter-state transit. State governments were still given the final say in the matter as the conditions widely differed through different states. tt



Phase 6 Unlock 2.0 - 1st July-31 July (30 Days)

Current policies going in Madhya Pradesh

- On July 1st, Madhya Pradesh government announced the “Kill Corona” Campaign where door-to-door surveys and tests were conducted to reduce and pinpoint the spread of the virus. And the ongoing campaign has so far recovered 42% of Madhya Pradesh’s population.
- Special schemes and steps were to be enforced to resume normal economic activities through subsidies and relaxations.
- Lockdown rules are still imposed in containment zones, and recreational places are still under shutdown till conditions improve and will be decided in August.
- M.P government has decided to impose lockdown every Sunday across the state.

Summary

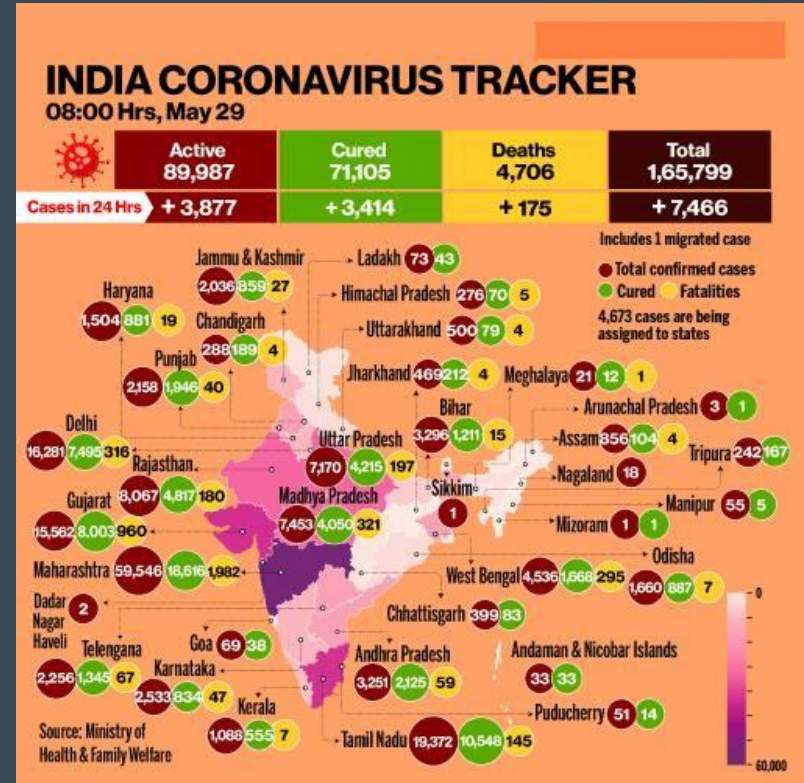
- After the WHO (World health organization) declared coronavirus pandemic on 11th March 2020, many world leaders declared a state of emergency and enforced country-wide lockdowns.
- The state of Madhya Pradesh is no different, as the first case was registered on 21st of March 2020, it has risen to 14,930 since then (as of 6th July, 2020), and continues to threaten us with inflating numbers and doubling in as few as four day time periods.
- **M.P.** stands on **12th position** with cases number(last updated on 12th july, 2020)
Confirmed : **14,106** Active : **2,702** Recovered: **10,815** Diseased : **589**
- Worst affected districts **Indore, Bhopal, Ujjain, Morena, Neemuch**
- Least affected districts **Seoni, Umaria, Niwari, Mandla, Alirajpur**
- **Morbidity rate** in the state of **Madhya Pradesh** was observed to be **less than 5%**.
- Males are more susceptible to coronavirus than Females and even have a high mortality rate. Ratio is 3:1
- Highest number of cases is seen in the age group between 21-40 yrs as the younger population of India is highest.

Active cases	19.15%
Mortality rate	4.18%
Recovery rate	76.67%
Average growth rate	1%
Tests per Million	4,629

Statistics of Madhya Pradesh

Conclusion

This study presented a comprehensive analysis of the COVID-19 outbreak situation in Indian state of Madhya Pradesh. The cases are rising very fast and they need aggressive control strategies from the Administrative unit of India. There are different aspects covered up in this study and research questions have been answered comprehensively. They are related to presenting the growth trends of infected cases in M.P , current status of the pandemic disease COVID-19 in Indian state of Madhya Pradesh up till 2nd July 2020, the demographic of disease age and sex wise, indicators such as mortality, morbidity, recovery rate, the measures taken by the government nationwide and at community level in lockdown and unlock phases and some specific measures taken by M.P government.



References

1. COVID-19 pandemic lockdown in India : [https://en.wikipedia.org/wiki/COVID-19_pandemic_lockdown_in_India#Phase_1_\(25_March_%E2%80%93_14_April\)](https://en.wikipedia.org/wiki/COVID-19_pandemic_lockdown_in_India#Phase_1_(25_March_%E2%80%93_14_April))
2. COVID-19 pandemic in Madhya Pradesh https://en.wikipedia.org/wiki/COVID-19_pandemic_in_Madhya_Pradesh
3. Coronavirus disease (COVID-19) – World Health Organization <https://www.who.int/emergencies/diseases/novel-coronavirus-2019>
4. CORONA VIRUS | Directorate of Health Services, Government of Madhya Pradesh, India
5. <http://health.mp.gov.in/en/idsp/corona-virus>
6. MoHFW | Home
7. <https://www.mohfw.gov.in/>
8. Worldometer - real time world statistics <https://www.worldometers.info/>
9. Coronavirus Update (Live): 15,124,440 Cases and 620,339 Deaths from COVID-19 Virus Pandemic - Worldometer
10. https://www.worldometers.info/coronavirus/?utm_campaign=homeAdUOA?Si
11. Coronavirus in India: Latest Map and Case Count
12. <https://www.covid19india.org/>

A watercolor illustration of a laurel wreath, consisting of two branches of leaves curving upwards and outwards to frame the text. The leaves are painted in shades of green and blue with a soft, blended effect.

THANK
YOU

ESSENTIALS OF GLOBAL HEALTH

Priya Mehra MBA HM section -B

Roll No - 0962

priyamehra.j19@iihmr.in

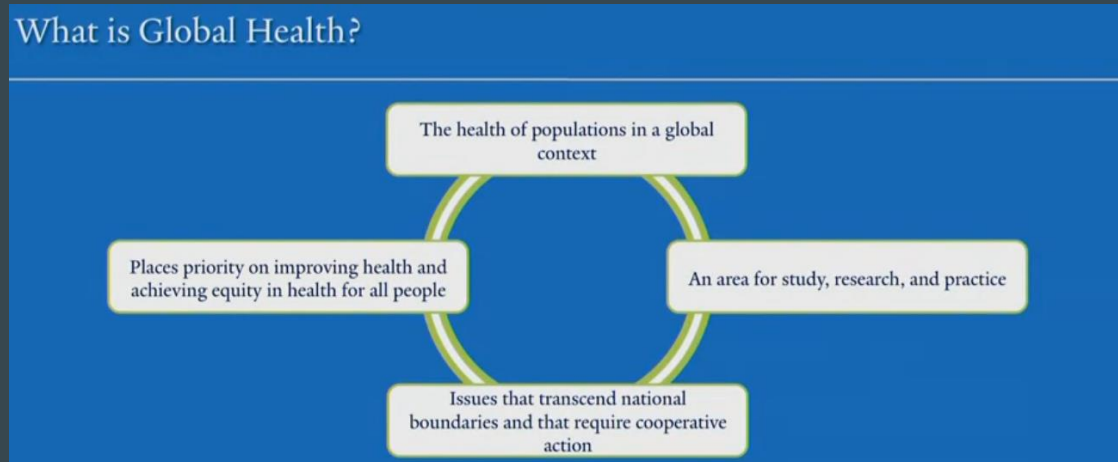
Dr. Sujata Verma

Assistant Professor

sujataverma@iihmr.edu.in

What is global health?

- **Global health** - has been defined as "the area of study, research and practice that places a priority on improving health and achieving equity in health for all people worldwide"
- Global health is about worldwide health improvement (including mental health), reduction of disparities, and protection against global threats that disregard national borders.
- The predominant agency associated with global health (and international health) is the WHO. Other important agencies impacting global health include UNICEF and the World Food Programme.



Objective

- Articulate key public health concepts related to global health;
- Analyze the key issues in global health from a number of perspectives;
- Discuss with confidence the burden of disease in various regions of the world, how it varies by sex, age, and location; key risk factors for this burden
- Assess key health disparities, especially as they relate to the health of low-income and marginalized people in low- and middle-income countries;
- Review key global health challenges that are likely to arise in the coming decades.

THE STATE OF WORLDS HEALTH:

42%

INCREASE IN GLOBAL LIFE EXPECTANCY FROM 1960 TO 2013

44%

FEWER MATERNAL DEATHS IN 2015 THAN IN 1990

50%

FEWER UNDER-5 DEATHS IN 2013 THAN IN 1990

53%

DECREASE IN MALARIA MORTALITY RATES AMONG UNDER-5 CHILDREN SINCE 2000

1.2
MILLION

FEWER NEW HIV CASES EACH YEAR THAN IN THE MID- TO LATE-1990'S

2.5
BILLION

CHILDREN HAVE BEEN IMMUNIZED AGAINST POLIO SINCE 1988, WITH ONLY 100 TOTAL CASES IN 2015

500,000

FEWER TB DEATHS PER YEAR IN HIV-NEGATIVE INDIVIDUALS FROM 1990 TO 2013

99.9%

REDUCTION OF GUINEA WORM CASES FROM 1986 TO 2015, NEAR ERADICATION

Some good news globally

Some bad news globally

6.3
MILLION

UNDER-5 CHILD DEATHS IN 2013

1.5
MILLION

TB DEATHS IN 2013

45%

SHARE OF CHILD DEATHS RELATED TO UNDERNUTRITION

584,000

MALARIA DEATHS IN 2013

1.5
MILLION

AIDS DEATHS IN 2013

289,000

MATERNAL DEATHS IN 2013

2.1
MILLION

NEW ADULT HIV INFECTIONS IN 2013

~ 2
BILLION

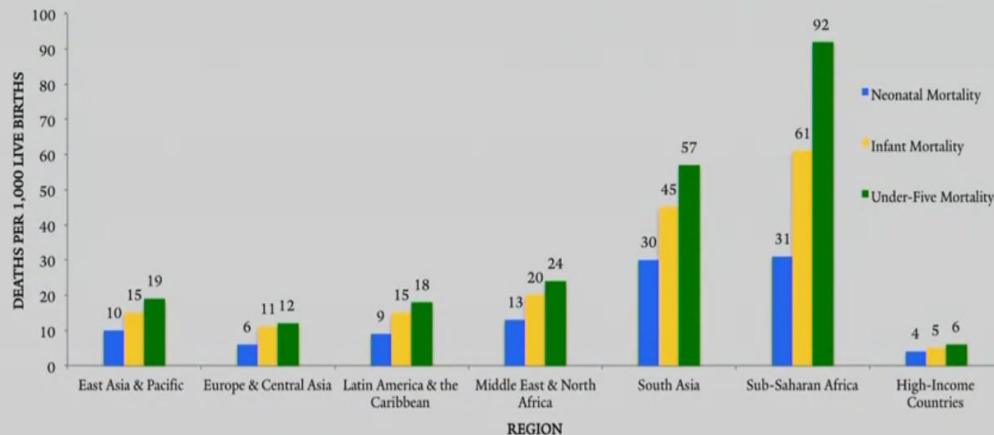
PEOPLE INFECTED WITH SOIL-TRANSMITTED HELMINTHS

Mortality rate

In the high income countries young children rarely die. For every 1,000 who are born only six will die before their fifth birthday. But of the six who die, four will actually die in their first 28 days. The better off the country is, the larger the share of total under five deaths will occur in the neonatal period, because those children aren't exposed to very many other risks. They're not so likely to die of diarrhea, malaria, HIV.

We look at Sub-Saharan Africa, what we see is a really different pattern. high rates of neonatal mortality, high rates of infant mortality, and high rates of under five child mortality. But we also see an almost equal risk of dying in each of those three periods. Between the birth and the first 28 days, about a third of all the under fives who die, will die. Between their first month and their first year is another third of the under fives who die, who will succumb.

Neonatal, Infant, and Under-Five Child Mortality Rates,
By World Bank Region and for High-Income Countries, 2013



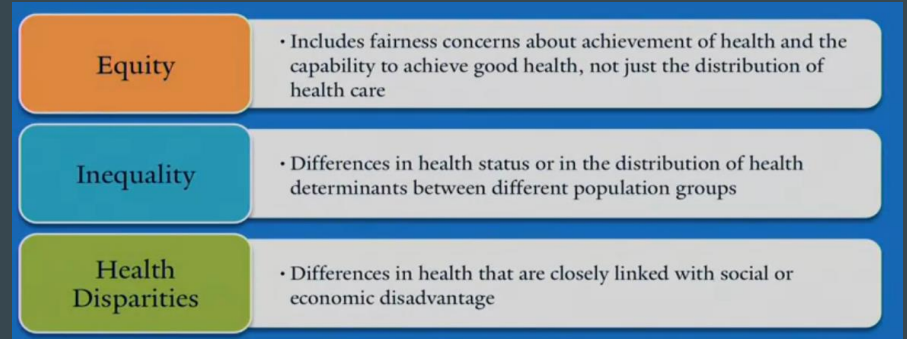
Source: Data from the World Bank, World Development Indicators: Mortality. <http://data.worldbank.org/indicator/SH.DYN.MORT/countries/1W-Z4-ZQ-Z7?display=graph>. Accessed February 22, 2015.

HEALTH DISPARITIES

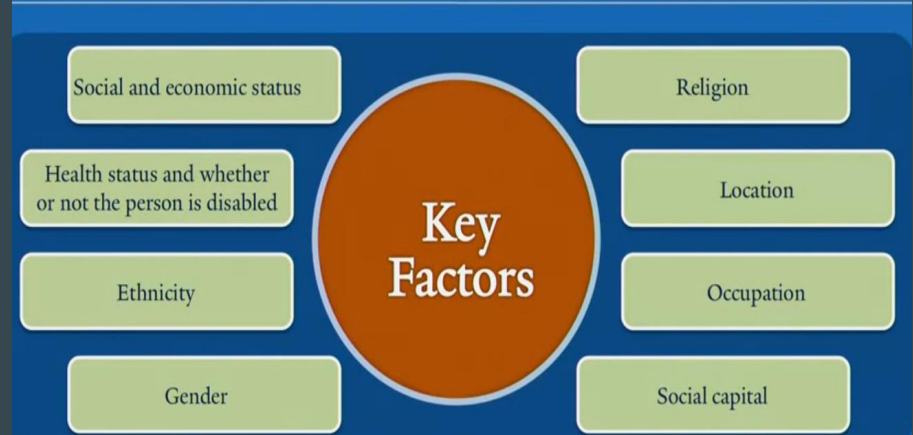
Health disparities have to do with **social and economic status**. People that are better off or less well off.

What is their health status? And are they disabled?

Everyone understands that if you have a patient with leprosy. And they're disfigured by their disease. It's very possible that a healthcare worker who's not used to working with them. And people in society who aren't used to dealing with them may discriminate against them and may not be comfortable. for example, and we still see it with HIV and AIDS. **Ethnicity** is a common basis for health disparities. People who are indigenous. People who may be from certain ethnic groups may also tend to be of lower income and lower educational status than others.



Key Factors Associated with Health Disparities

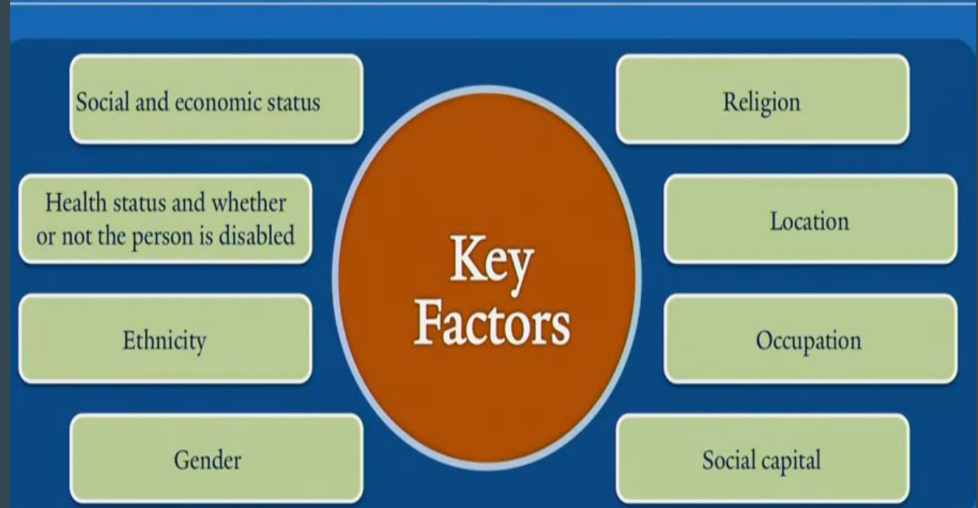


Gender is often a basis for health disparities. In many countries, there are preferences for males. In many countries, men have more economic, political and social power. And in many countries as well, a woman may suffer from a range of health disparities.

Religion is often a force that divides rather than unifies. And we'll see this in a number of societies, where perhaps the majority religious group enjoys better health, better access, better coverage, linked partly to higher incomes, more education, etc, than groups that may be from a minority religion .

Location usually plays itself out in terms of urban and rural, but you also might see it playing out of course in lowland, highland, which is just another manifestation of the same thing. And **occupation** also makes a lot of difference. **Social capital**, the relationships that people have with others in society, and the support that they get from those relationships.

Key Factors Associated with Health Disparities



CROSS-CUTTING THEMES IN GLOBAL HEALTH

a) Women's Health

To understand the key issues that affect the health of women, it's important to understand some of the biological and some of the social determinants of women's health. Some **issues clearly relate to biology**, such as ovarian cancer. Other health issues referred to or relate to the **social status of women**. And some **nutritional concerns** might also relate to social determinants.

Lower respiratory infections, which refers both to young children and older adults. Diarrheal diseases which predominantly will refer to young girls. HIV/AIDS in a world in which the epidemic has been feminized .. TB, which is a major killer of women, and now the leading infectious cause of death in the world. And malaria, which is very important both for young children, but also for pregnant women as well. And of course, we don't see high-income countries in the top ten list of leading causes of death, TB, diarrheal diseases or malaria.

Leading Causes of Death for Females, Low- and Middle-Income Countries and High-Income Countries, 2013

Low- and Middle-Income Countries		High-Income Countries	
Rank	Disease	Rank	Disease
1	Stroke	1	Ischemic heart disease
2	Ischemic heart disease	2	Stroke
3	Lower respiratory infections	3	Alzheimer's disease & other dementias
4	COPD	4	Lower respiratory infections
5	Diarrheal diseases	5	COPD
6	HIV/AIDS	6	Tracheal, bronchus, and lung cancers
7	Diabetes	7	Breast cancer
8	Tuberculosis	8	Colorectal cancer
9	Hypertensive heart disease	9	Diabetes
10	Malaria	10	Chronic kidney disease

Source: IHME. Global Burden of Disease Compare. Accessed March 4, 2016. Available at: <http://vizhub.healthdata.org/gbd-compare/>.

b) Child's Health

Three reasons why their health is so important for all of us. **First**, there's been enormous progress in reducing young child deaths, and yet 17,000 children die every day in the world. **Second**, children are vulnerable, young children, children under five years of age, clearly cannot take care of themselves. And **thirdly**, children are the future

For low and middle income countries, we see that these causes of death are overwhelmingly related to communicable diseases like pneumonia, malaria, diarrhea. To nutrition, such as malnutrition and then to a number of causes, neonatal related causes like congenital anomalies and preterm birth complications. And to those risks that kids face in high-income countries like drowning, like road injuries, or like swallowing a foreign object.

Leading Causes of Under-Five Deaths, for Low- and Middle-Income Countries and High-Income Countries, 2013

Low- and Middle-Income Countries		High-Income Countries	
Rank	Disease	Rank	Disease
1	Lower respiratory infections	1	Congenital anomalies
2	Preterm birth complications	2	Preterm birth complications
3	Neonatal encephalopathy	3	Other neonatal disorders
4	Malaria	4	Neonatal encephalopathy
5	Diarrheal diseases	5	SIDS
6	Congenital anomalies	6	Lower respiratory infections
7	Neonatal sepsis	7	Neonatal sepsis
8	Other neonatal disorders	8	Road injuries
9	Protein-energy malnutrition	9	Drowning
10	Meningitis	10	Foreign bodies

Source: IHME, Global Burden of Disease Compare. Accessed March 5, 2016. Available at: <http://vizhub.healthdata.org/gbd-compare/>.

c) Adolescent Health

Adolescence the period following the onset of puberty during which a young person develops from a child into an adult. An adolescent is someone who is between ages 10 and 19 years old.

There are a lot of reasons to focus on adolescent health. **One**, there are a large number of adolescents globally, especially in the developing world. And they face the health burden that's unique.

Also, without helping protect the health of adolescents, a lot of the progress that's been made in improving child health is lost and adolescent health also lays the groundwork for healthy and productive lives as adults.

Here what we see, given that these are low and middle-income countries, is in the younger group we continue to see some causes that are communicable. Lower respiratory infections and diarrheal disease and malaria. As children get older, we still see malaria, but we see less communicable disease.

Five Leading Causes of Death Globally Among Adolescents, by Sex and Age Group, for Low- and Middle-Income Countries, 2010

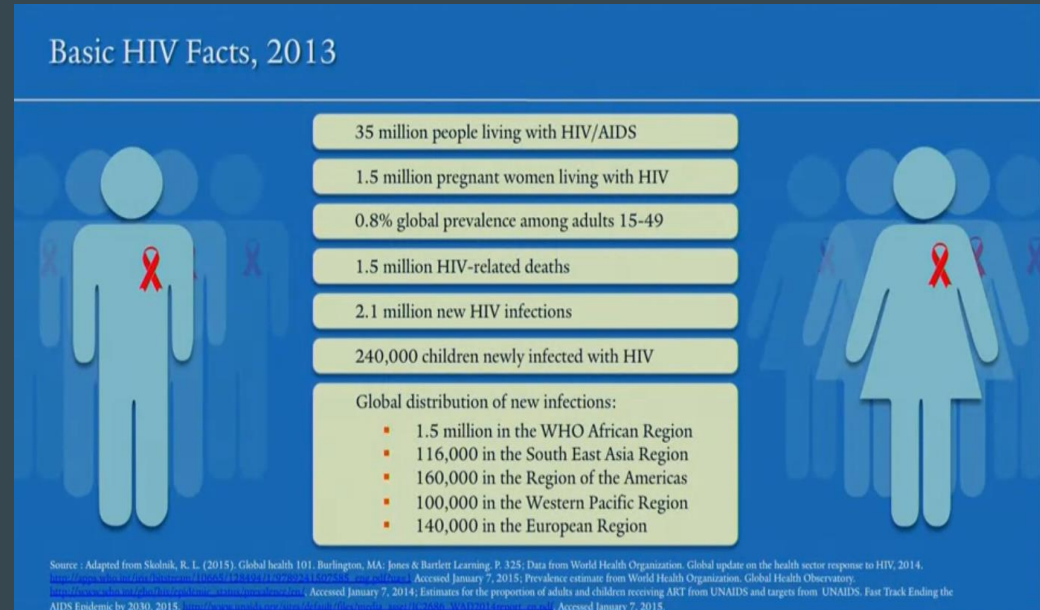
Low- and Middle-Income Countries			
Ages 10-14		Ages 15-19	
Rank	Disease	Rank	Disease
Males		Males	
1	Road injury	1	Road injury
2	HIV/AIDS	2	Interpersonal violence
3	Drowning	3	Self-harm
4	Lower respiratory infections	4	Drowning
5	Forces of nature	5	Malaria
Females		Females	
1	HIV/AIDS	1	Self-harm
2	Lower respiratory infections	2	Maternal disorders
3	Diarrheal diseases	3	Road injury
4	Road injury	4	Malaria
5	Malaria	5	Fire

Source: IHME. Global Burden of Disease Compare. Accessed May 3, 2015. Available at: <http://vizhub.healthdata.org/gbd-compare/>.

Critical causes of illness and death

a) HIV

HIV is a virus that can be spread in number of ways
But the routes of HIV transmission are **unprotected sex, mother-to-child transmission, blood transfusion or transplantation of infected tissue or organs.**
HIV virus is most infectious in the early stages infection or in the later stages as the immune system gets weaker and weaker. Without treatment, about half of the infected people will have full blown AIDS within ten years. You become more and more subject to what we call opportunistic infections. And some of these include for example tuberculosis, a cancer named Karposi's sarcoma, toxoplasmosis, and a disease called cryptococcal meningitis.



b) Tuberculosis

Tuberculosis (TB) is an infectious disease usually caused by *Mycobacterium tuberculosis* (MTB) bacteria. **Tuberculosis** generally affects the lungs, but can also affect other parts of the body. Most infections show no symptoms, in which case it is known as latent **tuberculosis**

Important TB Facts



- About one-third of the people in the world have latent TB
- People with latent TB do not spread TB
- People with latent TB, however, can develop active TB disease if they become immune compromised – such as through malnutrition, HIV infection or diabetes
- HIV+ people are 30 times more likely to have active TB disease than HIV- people

Basic TB Facts, 2013



11 million people living with TB

1.5 million TB deaths

9 million new TB cases

- 3.5% of new cases with multi-drug resistant TB
- 300,000 estimated new multi-drug resistant TB cases

Global distribution of prevalence:

- 41% in South-East Asia
- 21% in Western Pacific Region
- 25% in Africa
- 9% in the Eastern Mediterranean Region
- 4% in Europe
- 3% in the Americas
- 24% of all global cases in India and 11% in China



Source: Adapted from Skolnik, R. L. (2015). Global health 101. Burlington, MA: Jones & Bartlett Learning. P. 330; Data from WHO. Global Tuberculosis Report 2014. <http://www.who.int/tb/post2014/global-report/2014-report-tb>. Accessed January 6, 2015.

TB is now, considered to be the leading infectious cause of death in the world.

It's also important to note that two large countries, India and China, contain about 35% of all of the people with tuberculosis in the world.

It's also essential to understand that about 60% of the people who get active TB disease each year are men, although TB is also a major killer of women.

In addition, we should note that about 13% of the people with new cases of active TB disease were HIV positive.

Moreover, we see that about 75% of the people, newly infected with active TB disease were 15 to 54 years of age in their so-called productive years. It's also critical to understand that TB is an important disease for children.

However, its burden is certainly underestimated since it's hard to diagnose TB in children.

This is a disease that primarily affects the poor, those who are compromised, and those living in crowded circumstances. It's also important to note that smoking, excess alcohol use and diabetes are risk factors for TB. And there's increasing concern about the extent to which the growing prevalence of diabetes in low and middle income countries could unleash cases of active TB disease in those countries, which have a high prevalence of latent tuberculosis.

The World Health Organization recommends a six month regimen for drug susceptible tuberculosis disease. That's provided to people on an outpatient basis, and there are four drugs that people take for two months, and then two drugs that people take for the four months after that.

KEY CHALLENGES IN GLOBAL HEALTH

Key Challenges in Global Health



- Completing the “unfinished agenda” that relates to undernutrition, child health, maternal health, and communicable diseases
- Addressing the growing burden of noncommunicable diseases
- Making health systems work more effectively and efficiently and for the poor
- Working collectively to prevent and respond to emerging and re-emerging infectious diseases and antimicrobial resistance
- Working collectively to enable the development of the drugs, diagnostics, and vaccines needed to address the unfinished and emerging agendas

A watercolor illustration of a laurel wreath, consisting of two branches of leaves curving upwards and outwards to frame the text. The leaves are painted in shades of green and blue with a soft, blended effect.

THANK
YOU