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An overview on global health

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- Which SDG goals relate to heath?
- What baseline goal do they have in common?

Health equity

Universal healthcare ≠ universal access (and vice versa)

- Access to what?
- Who pays?
- Is there a prefect model?

The state of world health: metrics

- **Life expectancy**
- **Ageing well: healthy life expectancy**
- **Child mortality**
- Maternal health
- Infectious disease
- Economic burden
- Who pays
- Access to MRI
- Number of covid vaccines pro capita
- Doctors per people

Where do we find our data?

Life expectancy: average age at death

- charts

HALE: healthy life expectancy

- chart

HALE

- Globally, life expectancy has increased by more than 6 years between 2000 and 2019 – from 66.8 years in 2000 to 73.4 years in 2019. While healthy life expectancy (HALE) has also increased by 8% from 58.3 in 2000 to 63.7, in 2019, this was due to declining mortality rather than reduced years lived with disability. In other words, the increase in HALE (5.4 years) has not kept pace with the increase in life expectancy (6.6 years).

- **HALE will be an important issue in the future**

Child mortality

- chart
- chart

Models

- Access to basic primary care (prevention, home, community, nurses) – CUBA, THAILAND
- Access to secondary care (large hospitals) -EU
- Access to care for chronic illness (checkups, recalls) –CANADA, JAPAN
- Access to tertiary care (very advanced technology)- **USA**

(USA is not a good model, why? Look here)

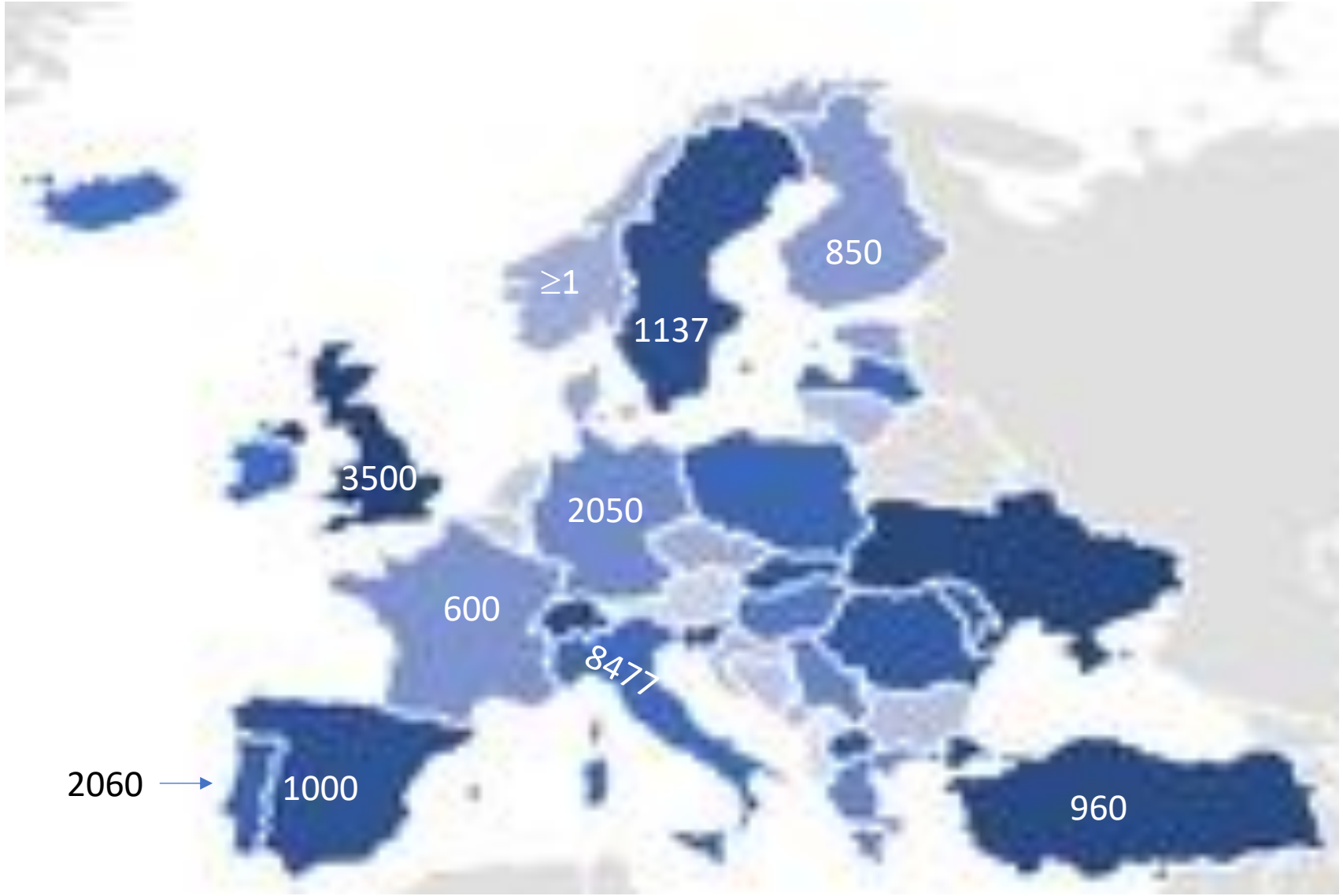
Engineering as means to improve societal welfare

- Humanitarian engineering
- Engineers without borders
- Engineering for change

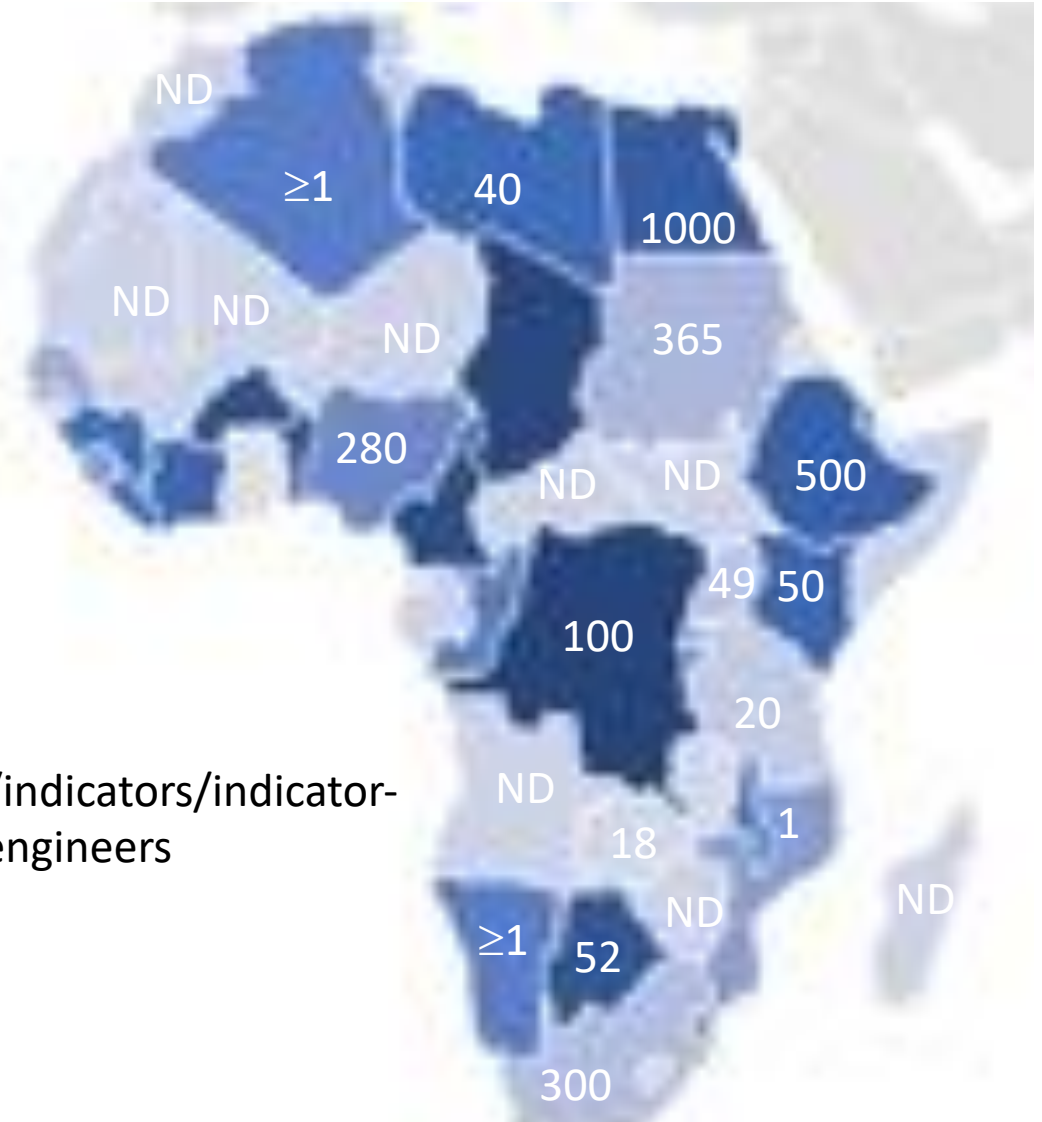
Engineering for health equity

- UBORA

The state of biomedical engineers in 2017



The state of biomedical engineers in 2017



https://www.who.int/data/gho/data/indicators/indicator-details/GHO/number-of-biomedical-engineers

The state of world health indicators

- **Life expectancy**
- **Ageing well: healthy life expectancy**
- **Child mortality**
- Maternal health
- Infectious disease
- Economic burden
- Who pays
- Access to MRI
- Number of covid vaccines/capita
- Doctors pro capita
- **Biomedical engineers**

Reflect on the data

- Compare child and maternal mortality across the world
- Find data on the number of MRI machines in Europe, Africa. What is the average number of machines pro capita?
- Is it related to the access to Covid vaccine?
- How does the number of doctors pro capita compare with the number of biomedical engineers pro capita? Is there a correlation?
- How and why has life expectancy increased since the 1800s?

Conclusion

- Health equity must evolve with the context and needs
- Too few biomedical engineers who deal with healthcare directly
- Use good data sources

Reflections and group discussion

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- How and why has life expectancy increased since the 1800s?