

Moonshot R&D of health & medical field

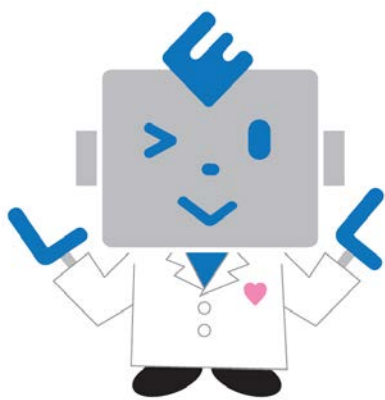


MOONSHOT
RESEARCH & DEVELOPMENT PROGRAM

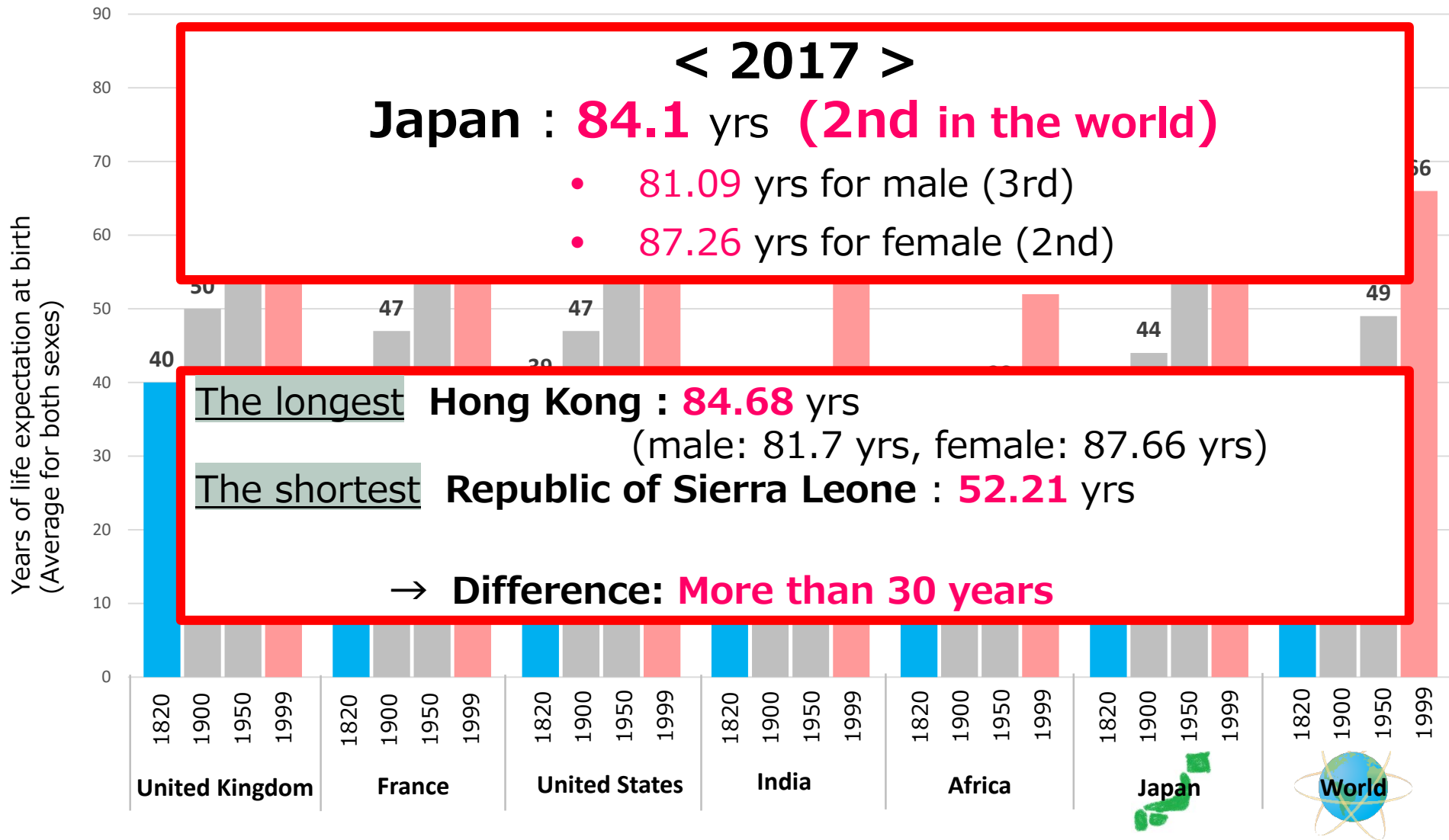
Moonshot Goal7

Program Director : Toshio Hirano

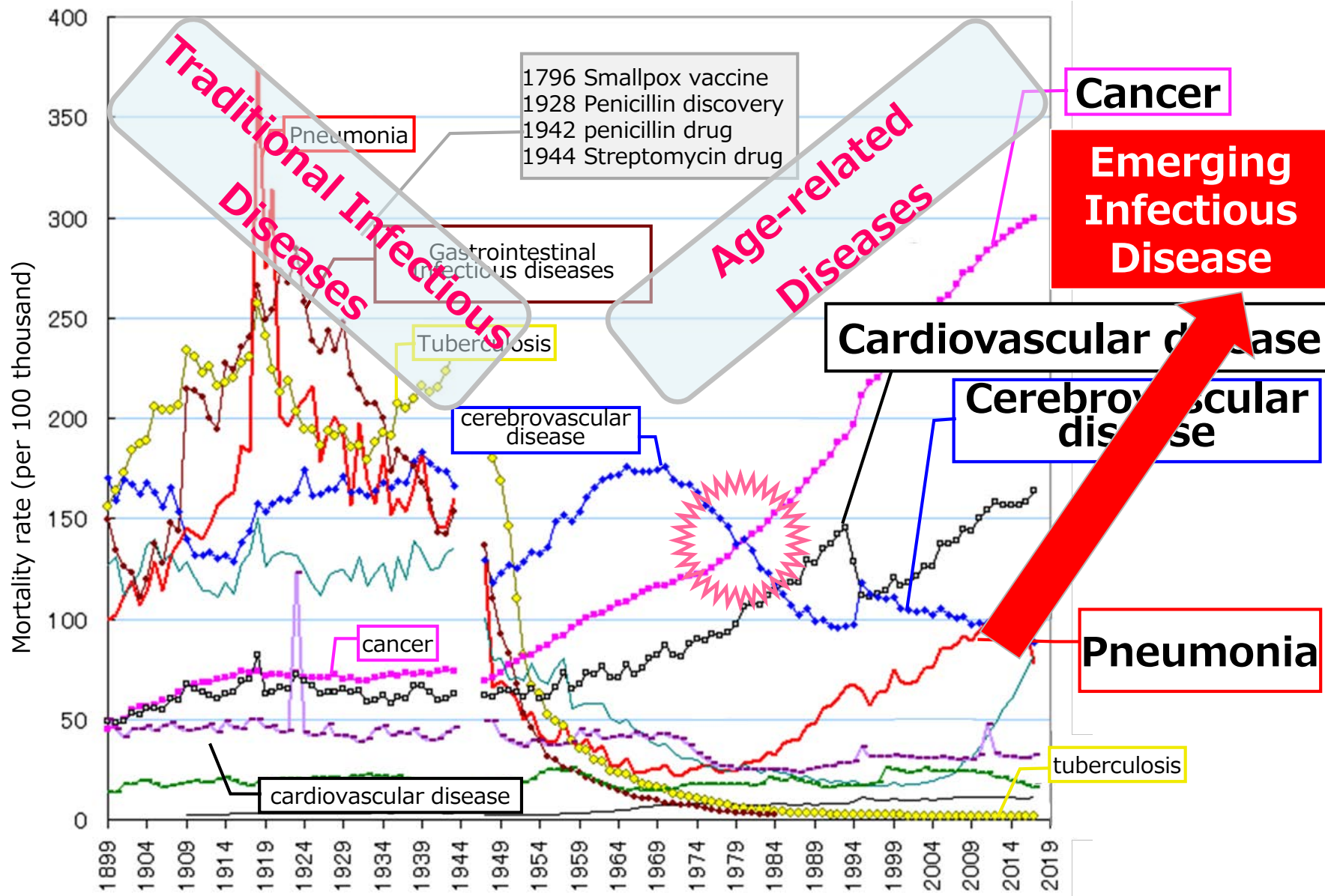
“Realization of sustainable care systems to overcome major diseases by 2040, for enjoying one’s life with relief and release from health concerns until 100 years old”



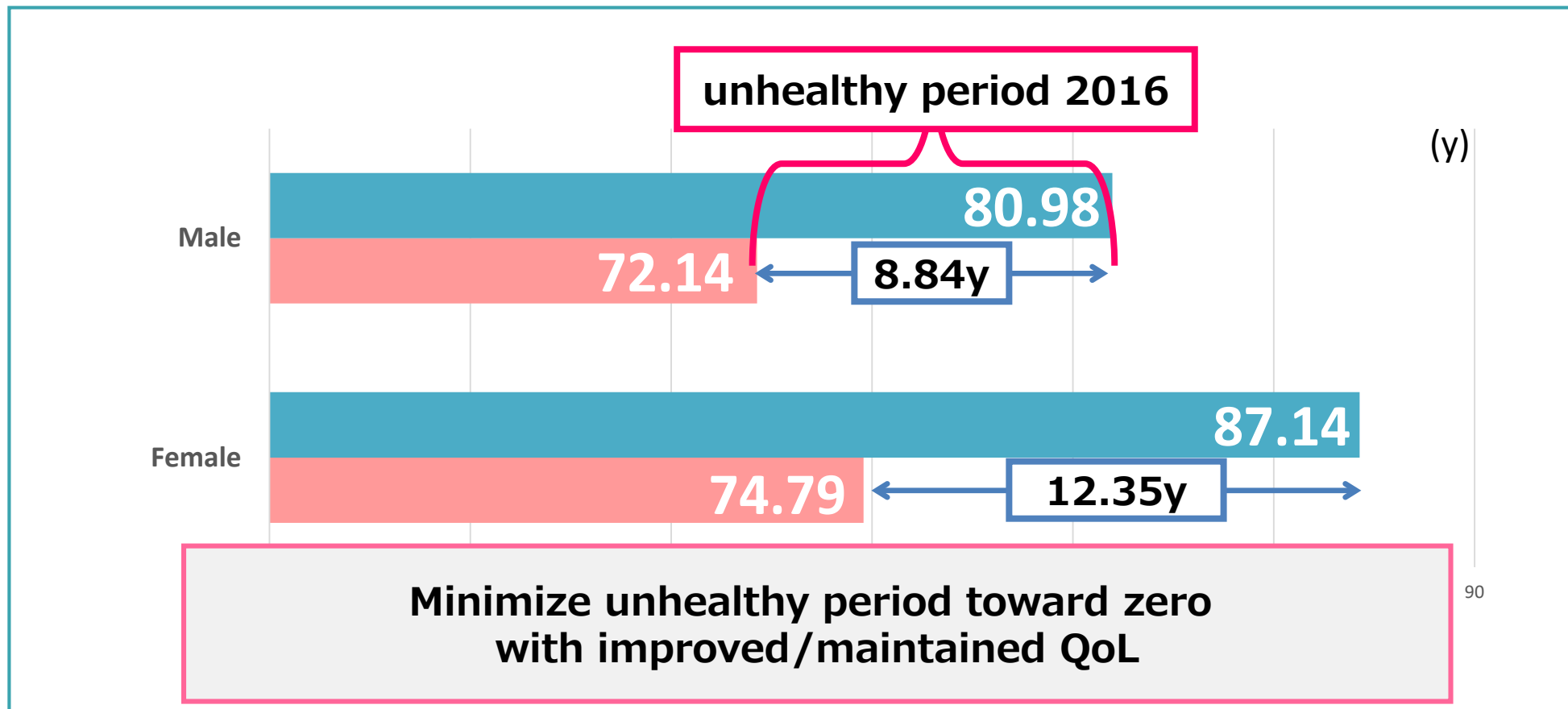
Aim for establishment sustainable social systems to jump up the levels of QoL and healthy life expectancy (“moonshot approach”)



Changes in cause of mortality (per 100 thousand people)



(Source)Made from MHLW“demographic statistics”



Healthy life expectancy is a period in which we can live in a healthy state or an inclusive term of the indicators (no activity restrictions, subjective health, no necessity for nursing care, no chronic diseases, etc.)

[source] :
 "2010 Complete Life Table" (MHLW, 2010) and
 "Future Projections of Healthy Life Expectancy and Cost-effectiveness of Lifestyle Disease Control" (MHLW, 2010)
 Health Science Council of MHLW Community Health Promotion and Nutrition Subcommittee·
 Special Committee on the Formulation of the Next National Health Promotion Movement Plan,
 "Reference on the Promotion of Health Japan 21 (Second) " p25

Japan (2015)

- New cases : 980 thousand
- Death : 370 thousand

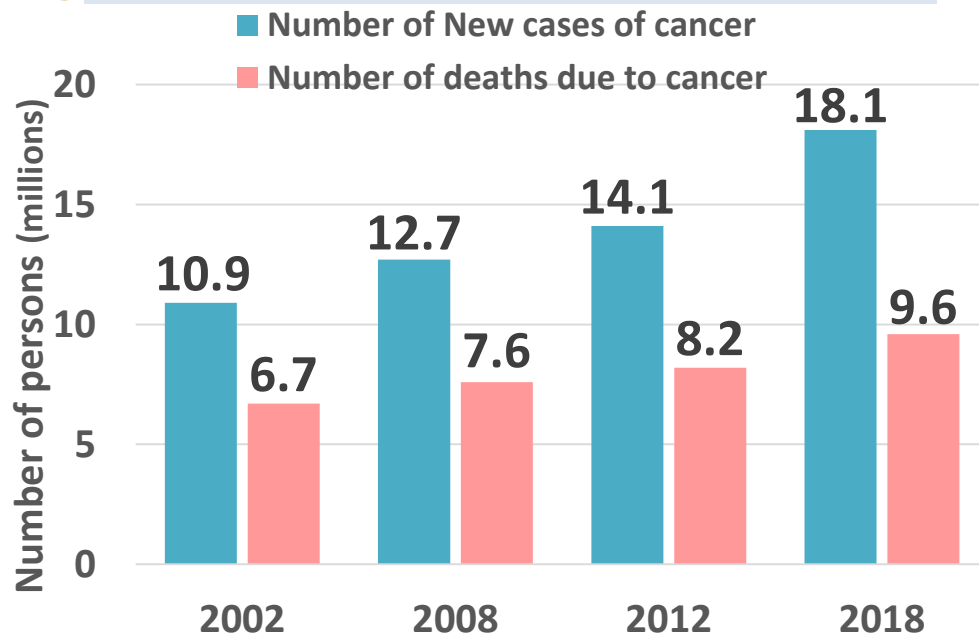
(2015 estimates from the National Cancer Center)

World (2018)

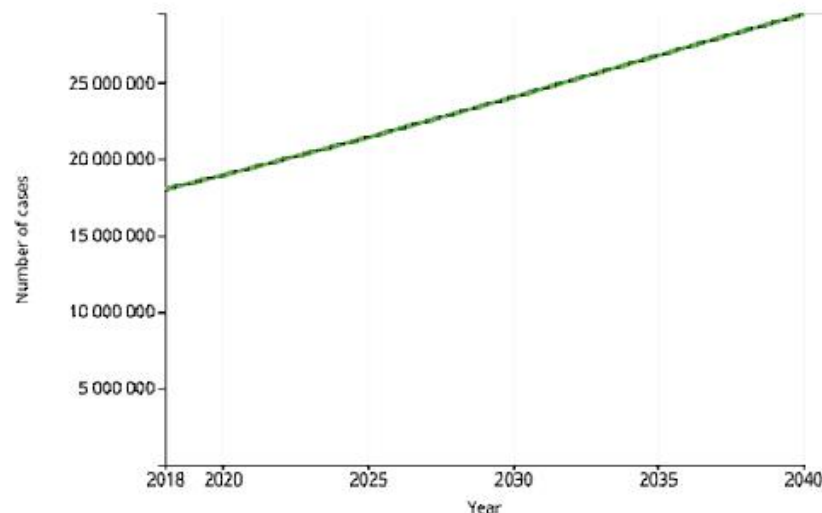
- New cases : 18 million
- Death : 9.6 million



Global trend in the number of cancer patients



Estimated number of incident cases from 2018 to 2040, all cancers, both sexes



(Source) Trend in the number of cancer patients globally. Source: Bray F, et al. CA Cancer J Clin 2018;68:394-424; Parkin DM, et al. CA Cancer J Clin 2005;55:74-108; Jemal A, et al. CA Cancer J Clin 2011;61:69-90; Torre LA, et al. CA Cancer J Clin 2015;65:87-108. © American Cancer Society.

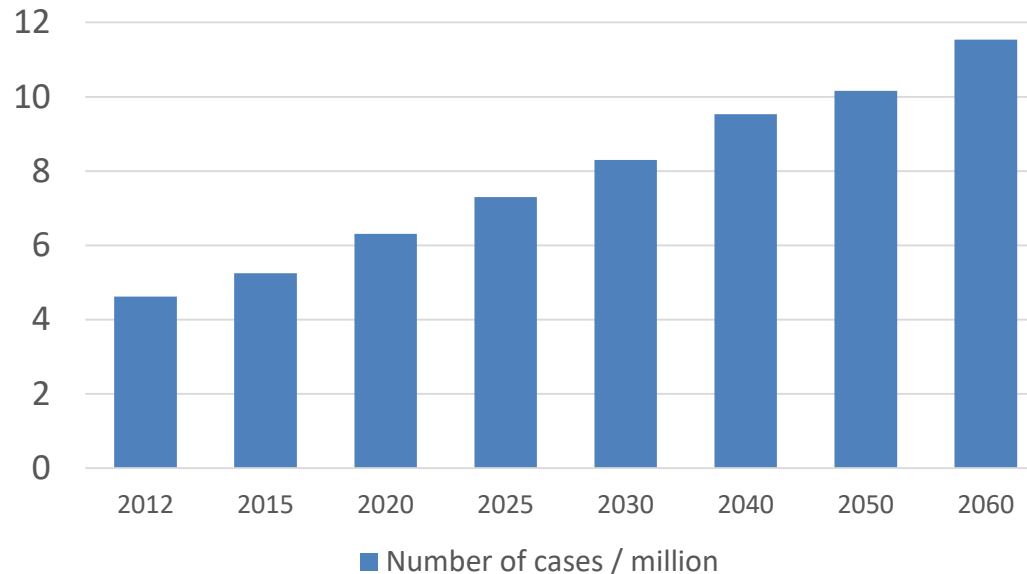
(Source) International Agency for Research on Cancer, World Health Organization ; <https://gco.iarc.fr/tomorrow/graphic-isotype>

■ Major neurological disorders (in Japan)

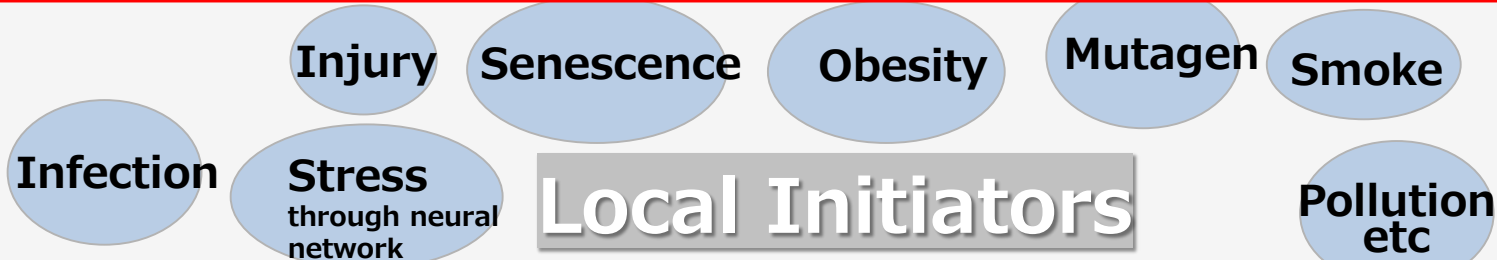
- Dementia patients : About **4.6 million**
- MCI (Mild Cognitive Impairment) : About **4 million**
- Depression・Manic depression patients : About **1.1 million**

(Source)MHLW “2016 National Livelihood Survey”

Estimated number of patients with cognitive impairment in Japan



Chronic Inflammation: the basis of various diseases in an aging society



Chronic Inflammation

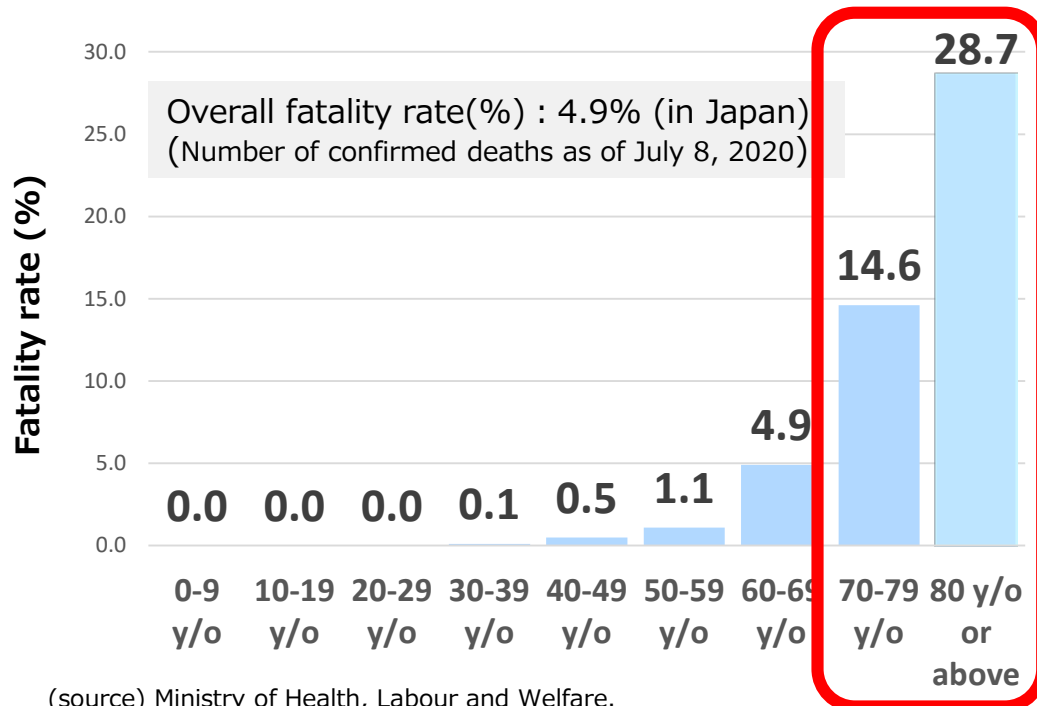
**The key is the elucidation and control
of chronic inflammation**

Rheumatoid arthritis,
Lupus,
Thyroiditis/Gravie's diseases,
Type 1 diabetes,
Multiple sclerosis,
etc

Alzheimer's diseases,
Type 2 diabetes,
Hepatitis,
Cardiovascular diseases/atherosclerosis,
Glomerulonephritis,
etc

Lung Cancer,
Liver cancer,
Gastric cancer,
Colon cancer,
Pancreatic cancer,
Breast cancer,
Prostate cancer,
etc

Fatality Rate for Patients with COVID-19 by Age in Japan



(source) Ministry of Health, Labour and Welfare.
Trends in the Occurrence of COVID-19 (published April 17, 2020)

Risk Factors for Severity

Aggravation risk factors

- **Elderlies, aged 65 years or above**
- Chronic respiratory disease
- Chronic kidney disease
- Diabetes
- Hypertension
- Cardiovascular disease
- Obesity (BMI of 30 or higher)

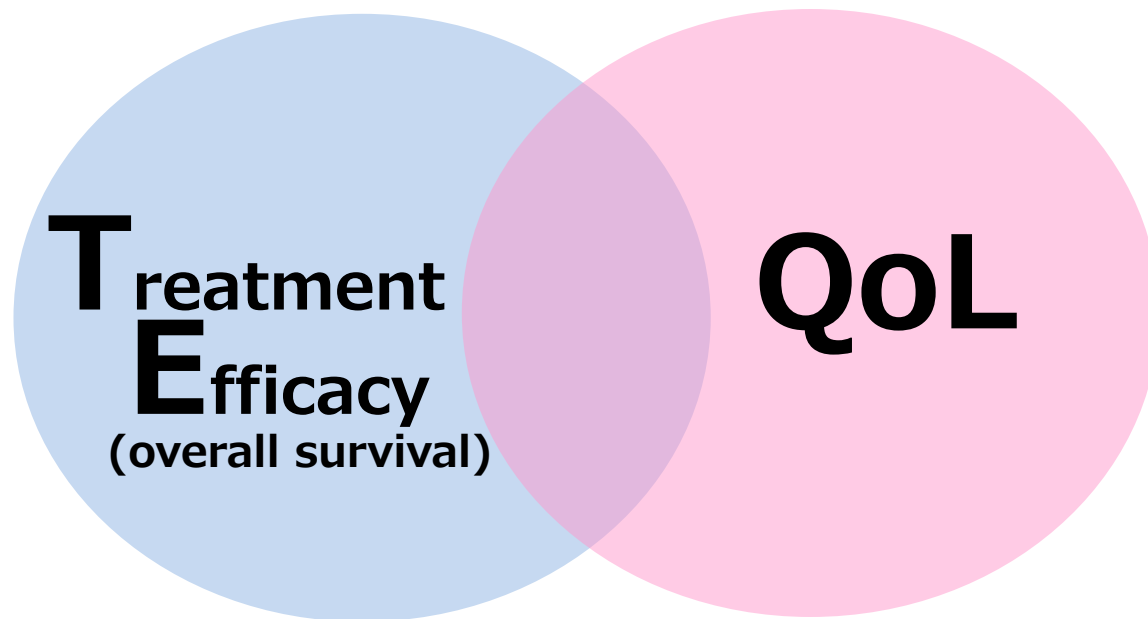
Underlying diseases to beware of despite there being insufficient information to determine whether

- Use of biological agents
- Immunodeficiency after organ transplantation or other causes
- HIV infection (particularly CD4 < 200/L)
- History of smoking
- Hypertension
- Pregnancy
- Malignant tumor

QoL (Quality of Life)

1. physical status and functional abilities
2. psychological status and well-being
3. social interactions
4. economic and/or vocational status
5. religious and/or spiritual status

World Health Organization.
Constitution in basic
documents. Geneva: 1948.
Equivalent to the health
concept as defined by WHO.



【Target】

1. Realization of a society where everyone can prevent diseases spontaneously in daily life.
2. Realization of a medical network accessible for anyone from anywhere in the world
3. Realization of drastic improvement of QoL without feeling load
(realization of an inclusive society without health disparity)

Sustainable care system for enjoying one's life until 100 years old

