What is the Burden of Disease in Scotland, and what are the implications for policy and planning?

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Scottish National Burden of Disease, Injuries and Risk Factors Study (SBoD)

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SBoD Study team

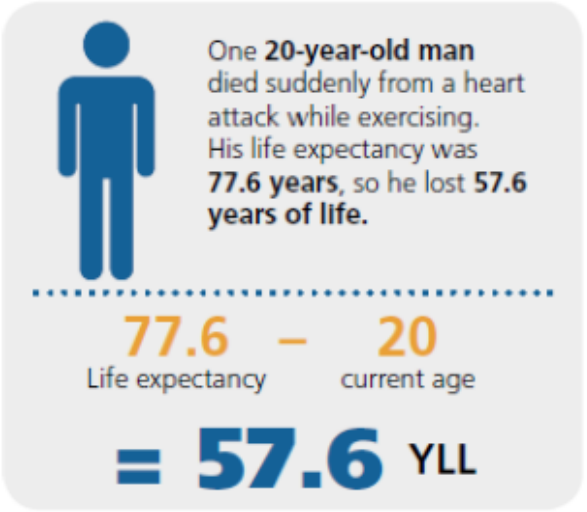
NHS National Services Scotland (PHI)	NHS Health Scotland
Ian Grant (Researcher) Oscar Mesalles-Naranjo (Analysis) Grant Wyper (Research and analysis)	Diane Stockton (Study lead) Elaine Tod (Risk factors)
Colin Fischbacher (Advisor)	Gerry McCartney (Advisor)

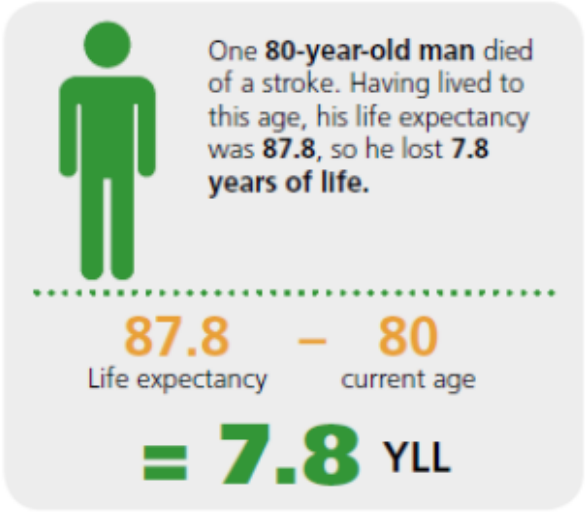
Why we are conducting the SBoD study

- Low life expectancy in Scotland, and improving very slowly.
- Even slower improvements in Healthy Life Expectancy - we are living longer BUT spending more years in ill-health.
- GBD (Global) estimates of burden are modelled – are they good enough for local planning?
- Data informed decision making - policies and interventions targeted where they can have most impact.
- Comprehensive local level data to empower local decision making.

What is YLL?

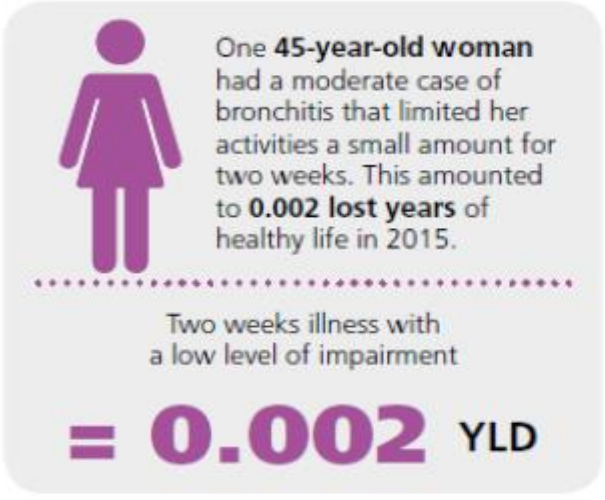
- Mortality count
- Life expectancy based on Scottish life tables
- Ill-defined deaths redistributed (GBD method)

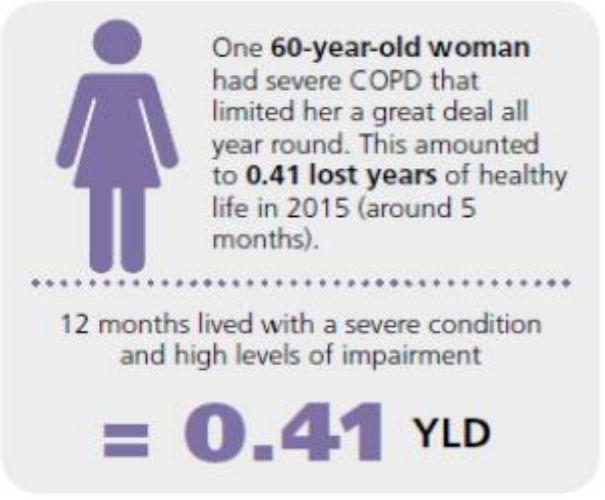




What is YLD?

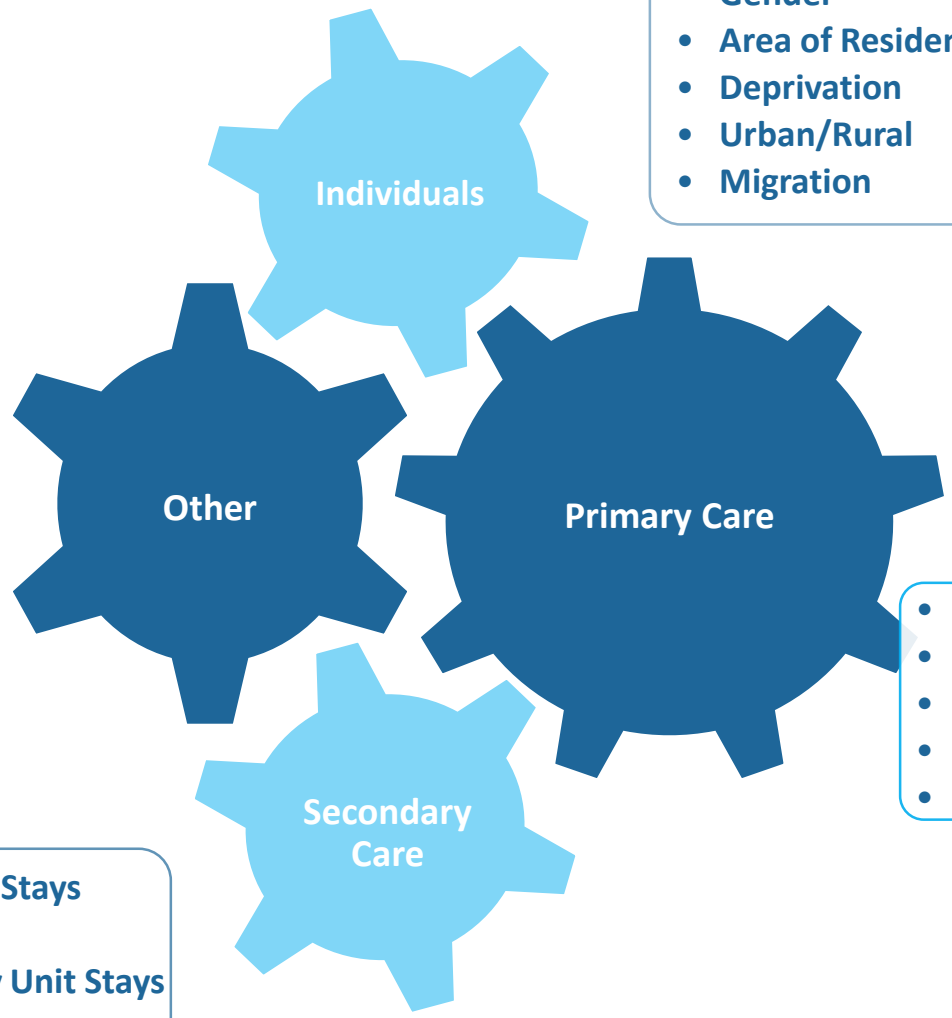
- Morbidity (prevalence, incidence, events/episodes)
- Severity of disease
- Disability weights (No disability [0] to severe disability [1])





How we count morbidity

- Age
- Gender
- Area of Residence
- Deprivation
- Urban/Rural
- Migration



- Register of Deaths
- Cancer Registry
- Diabetes Register
- Learning Disability Statistics
- Scottish Health Survey

- GP Consultations
- GP Disease Registers
- Community Prescriptions
- Dental Treatments
- Surveillance of Communicable Disease

- General and Psychiatric Hospital Stays
- Outpatient Appointments
- Intensive Care/High Dependency Unit Stays
- Unscheduled Care
- Birth Records
- Maternity and Neonatal Care

Disease classification in SBoD : example

Level 1 Non-communicable diseases

Level 2 Neurological disorders

Level 3

Alzheimer's disease and other dementias

Parkinson's disease

Epilepsy

Multiple sclerosis

Tension-type headache

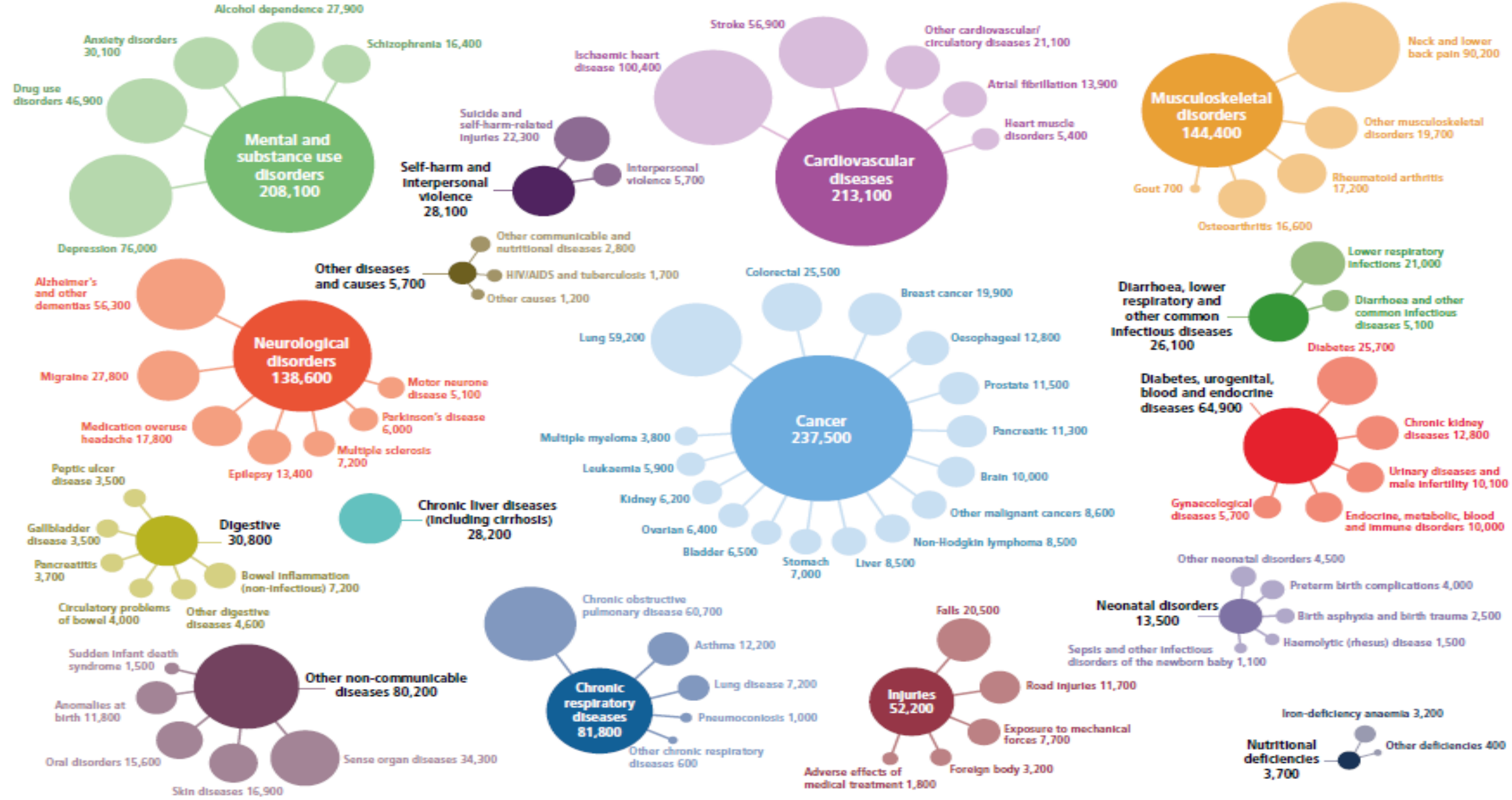
Medication overuse headache

Migraine

Motor neurone disease

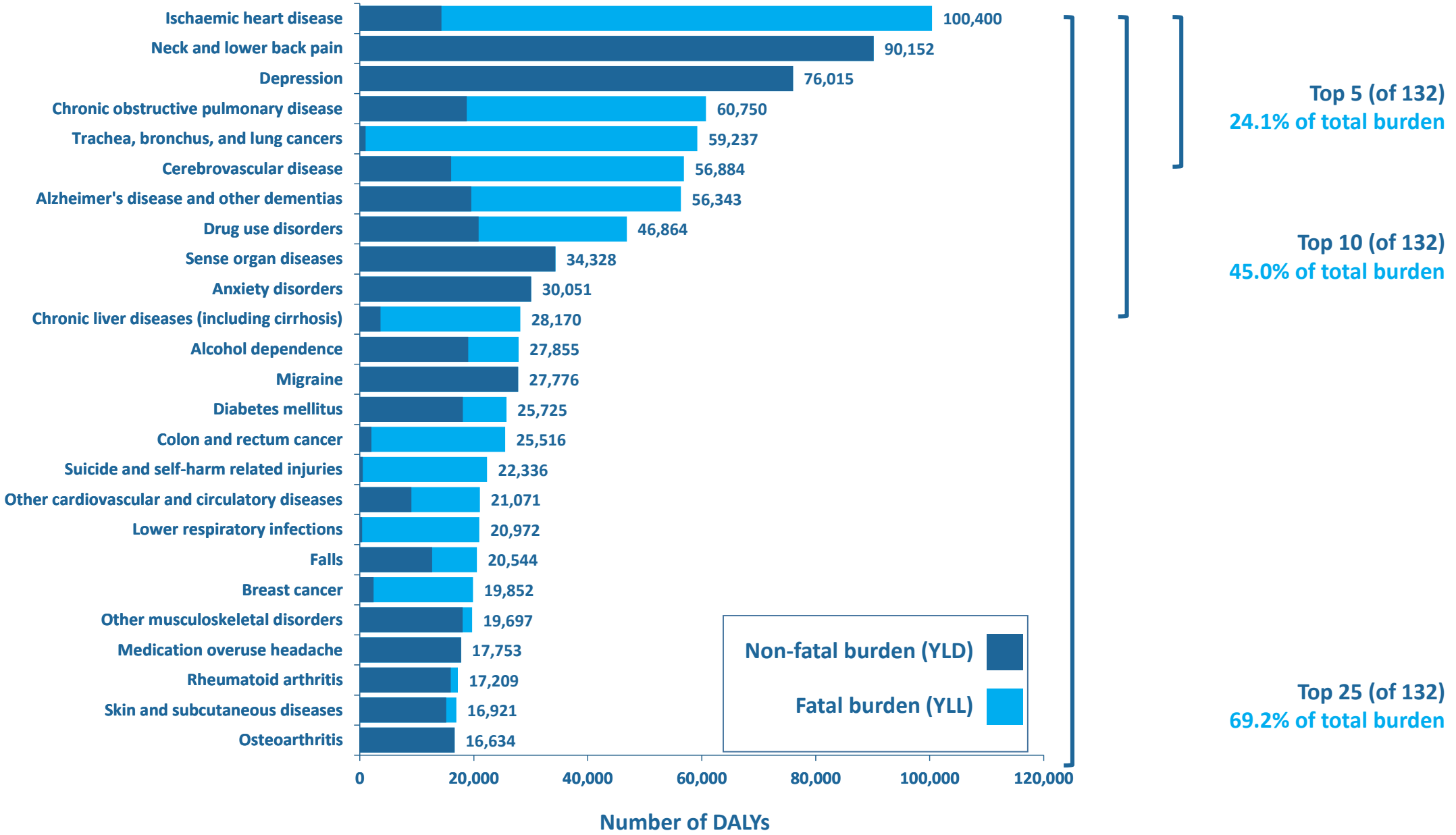
Other neurological disorders

Burden of disease in Scotland, 2015

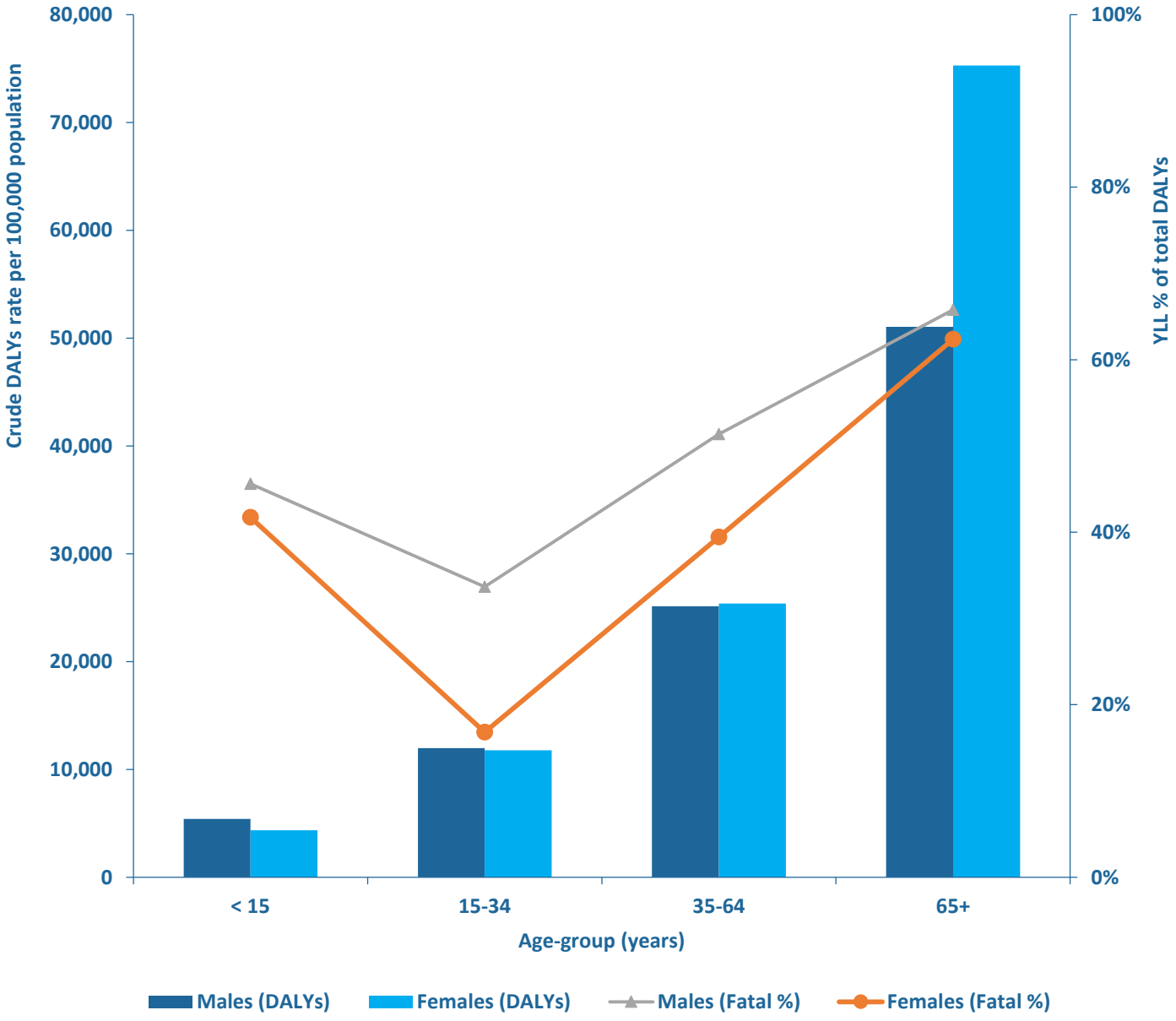


Note: Disability-adjusted life years rounded to the nearest 100. • Scottish burden of disease study • www.scotpho.org.uk/comparative-health/burden-of-disease/overview

What were the 25 most common causes of burden?



Burden by age and gender



0 to 14 years

Congenital anomolies

Neontal and pre-term birth complications

15 to 34 years

(Both) Drug use disorders, depression, neck/lower back pain

(Males) Suicide and self-harm, alcohol dependence

(Females) Migraine, anxiety disorders

35 to 64 years

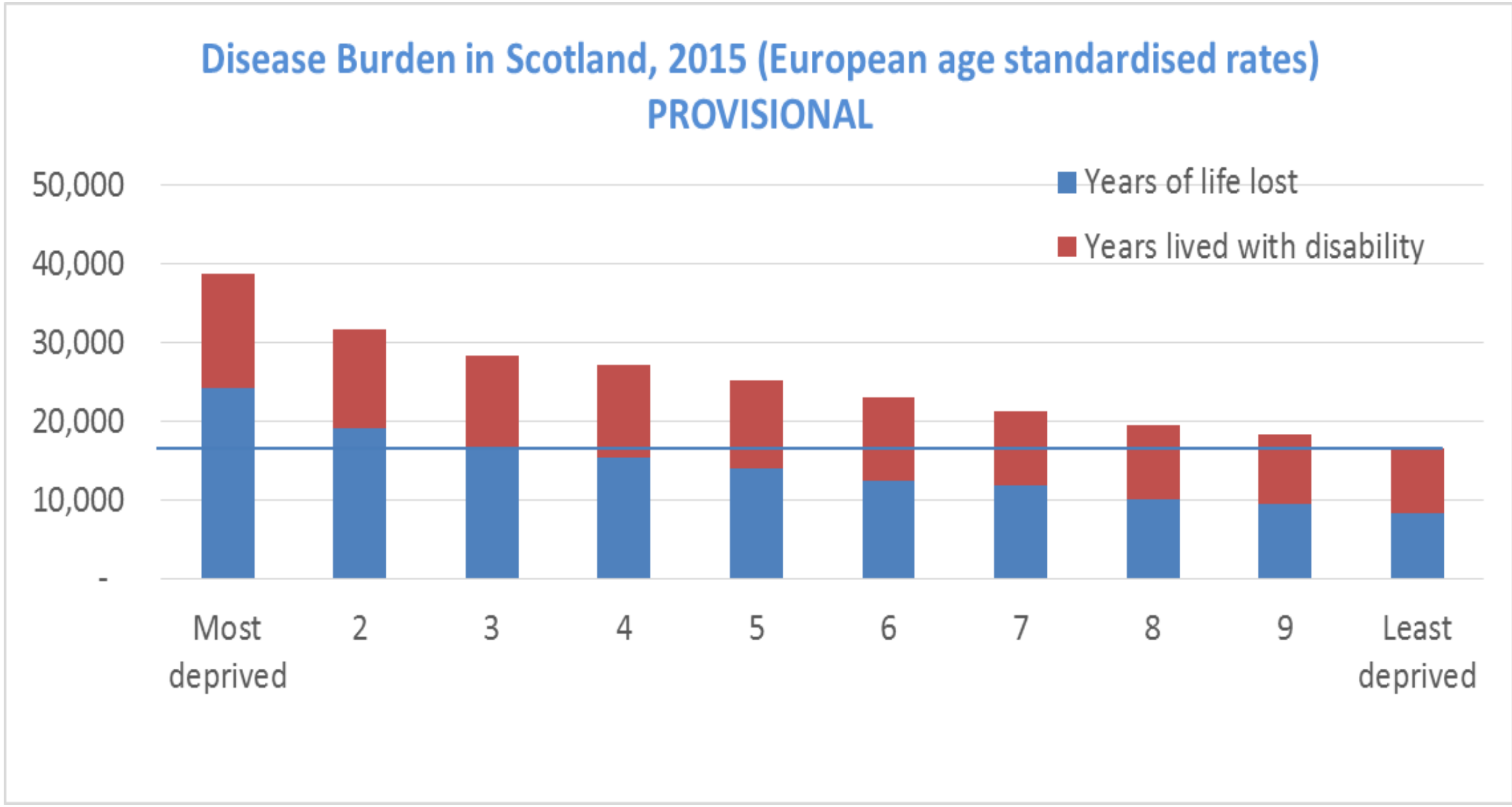
(Both) Depression, neck and lower back pain

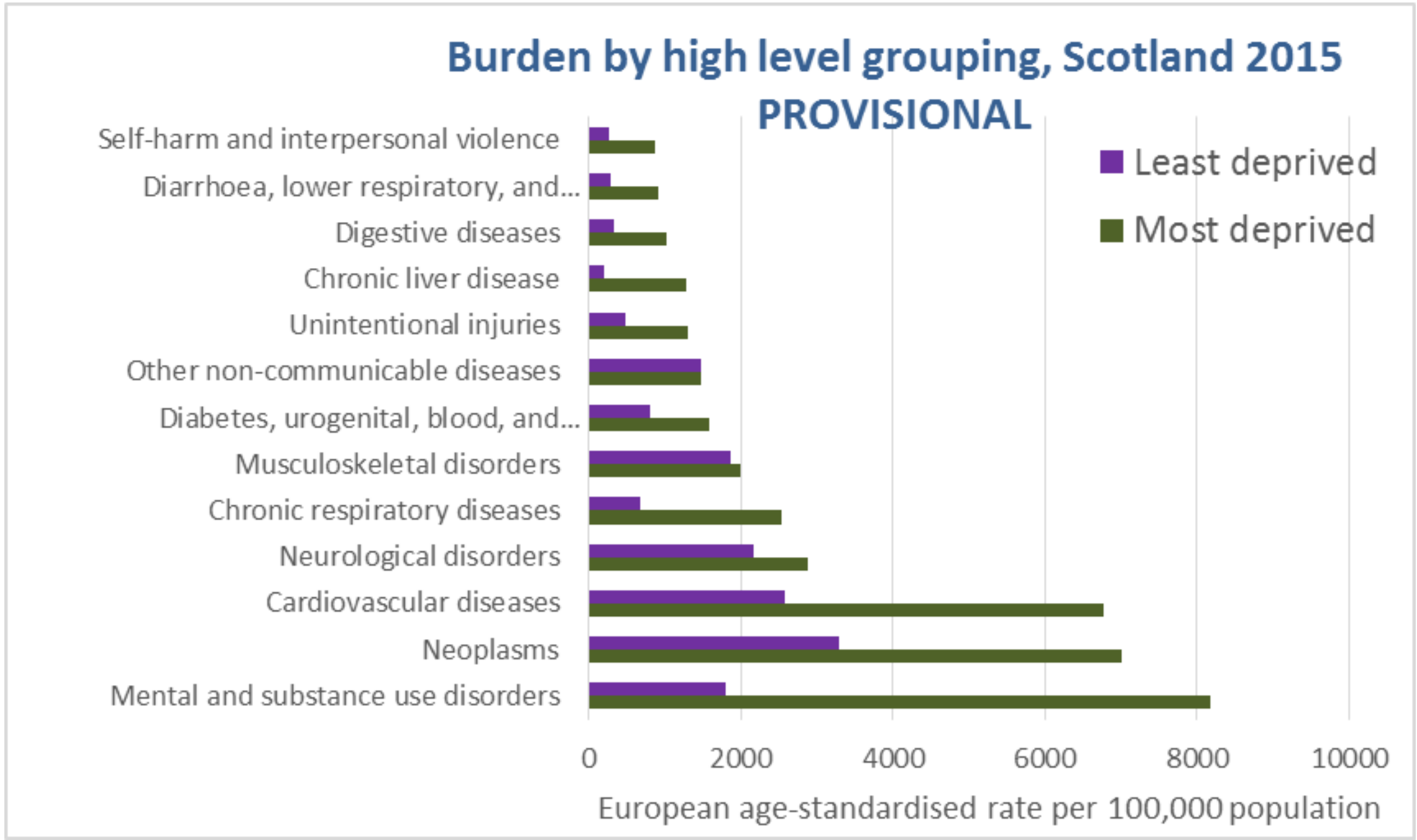
(Males) IHD, cirrhosis, drug use disorders

(Females) Migraine, anxiety disorders, COPD

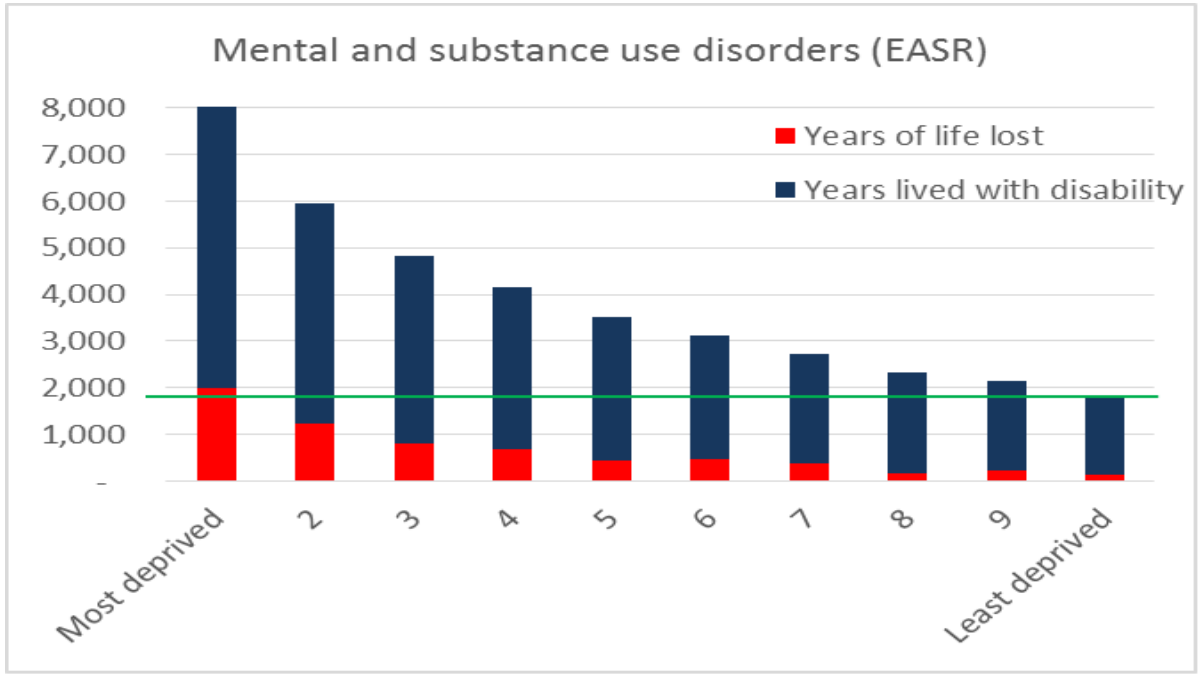
65 years and above

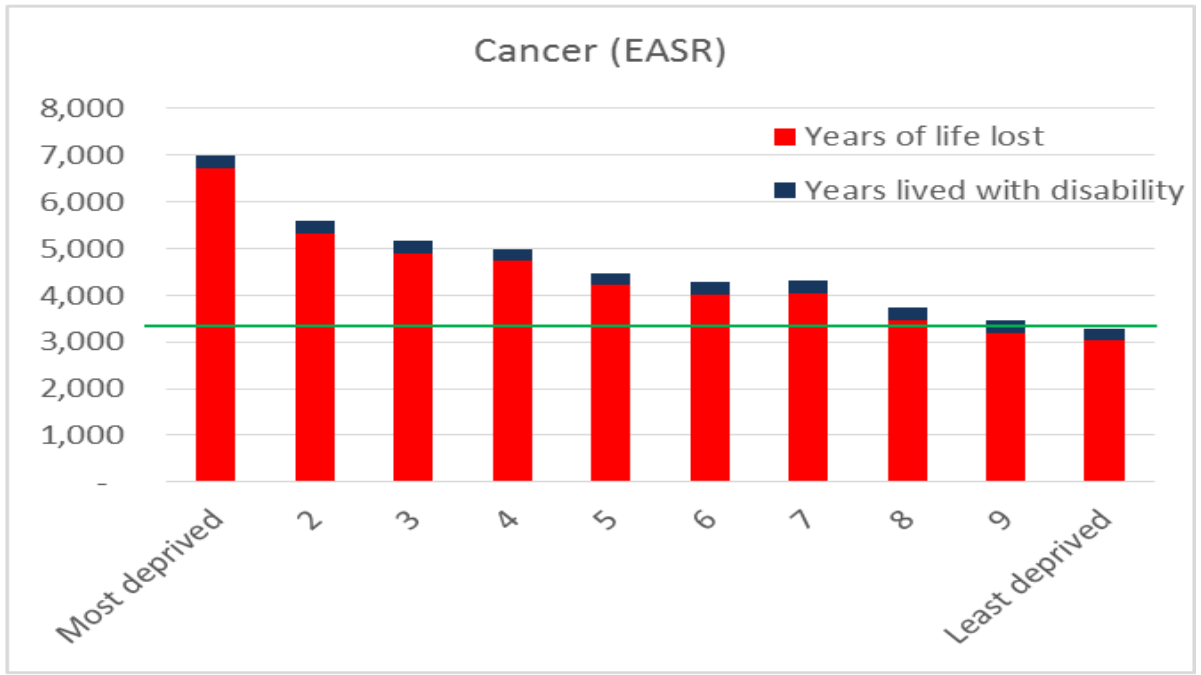
(Both) IHD, lung cancer, Alzheimer's, COPD, stroke

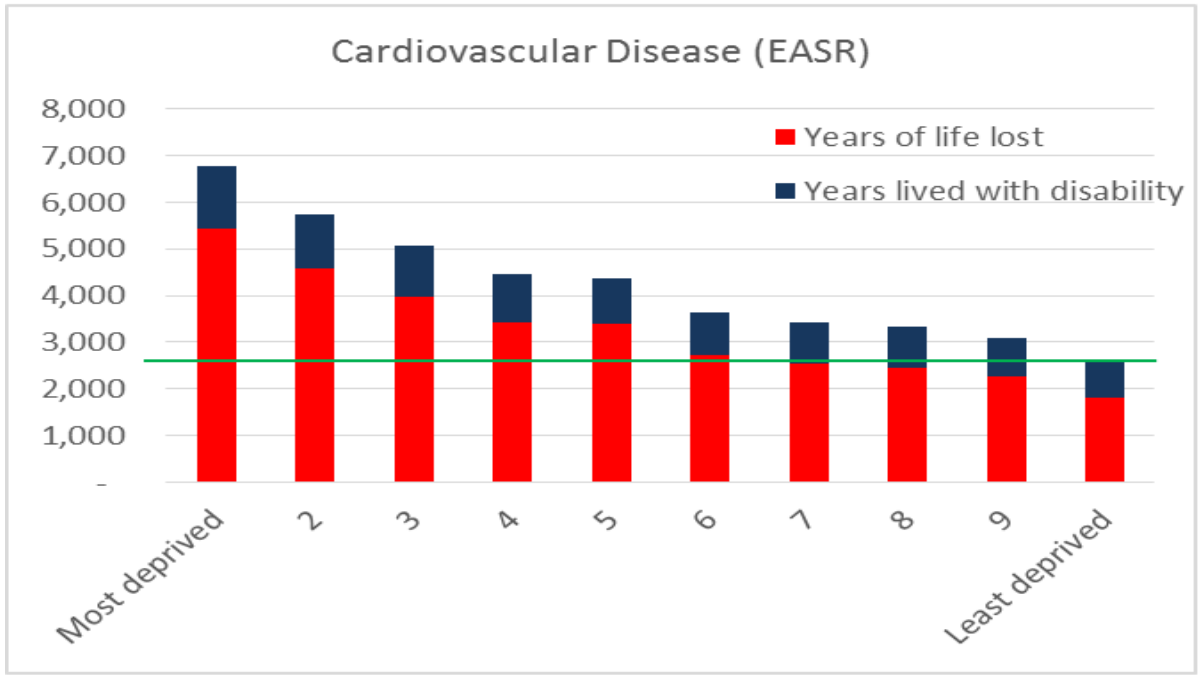

Disease Burden in Scotland, 2015 (European age standardised rates)
PROVISIONAL
50,000
40,000
30,000
20,000
10,000
-
Years of life lost
Years lived with disability
Most deprived
2
3
4
5
6
7
8
9
Least deprived

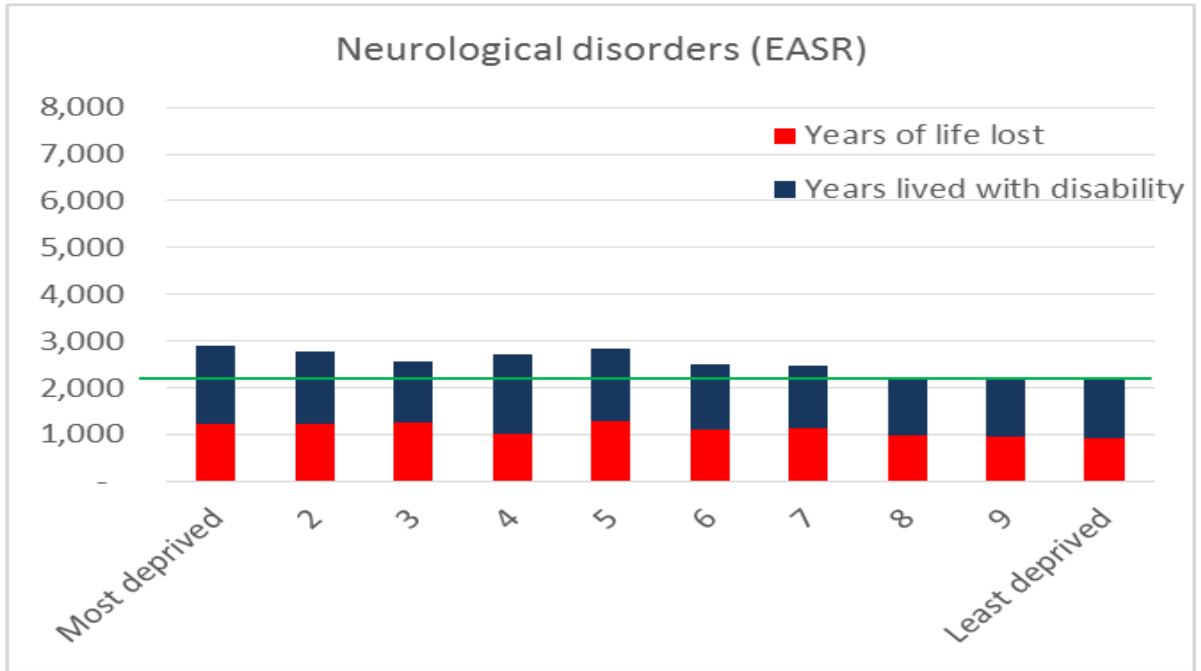

Burden by high level grouping, Scotland 2015
PROVISIONAL
Least deprived
Most deprived
Self-harm and interpersonal violence
Diarrhoea, lower respiratory, and...
Digestive diseases
Chronic liver disease
Unintentional injuries
Other non-communicable diseases
Diabetes, urogenital, blood, and...
Musculoskeletal disorders
Chronic respiratory diseases
Neurological disorders
Cardiovascular diseases
Neoplasms
Mental and substance use disorders
0
2000
4000
6000
8000
10000
European age-standardised rate per 100,000 population

PROVISIONAL









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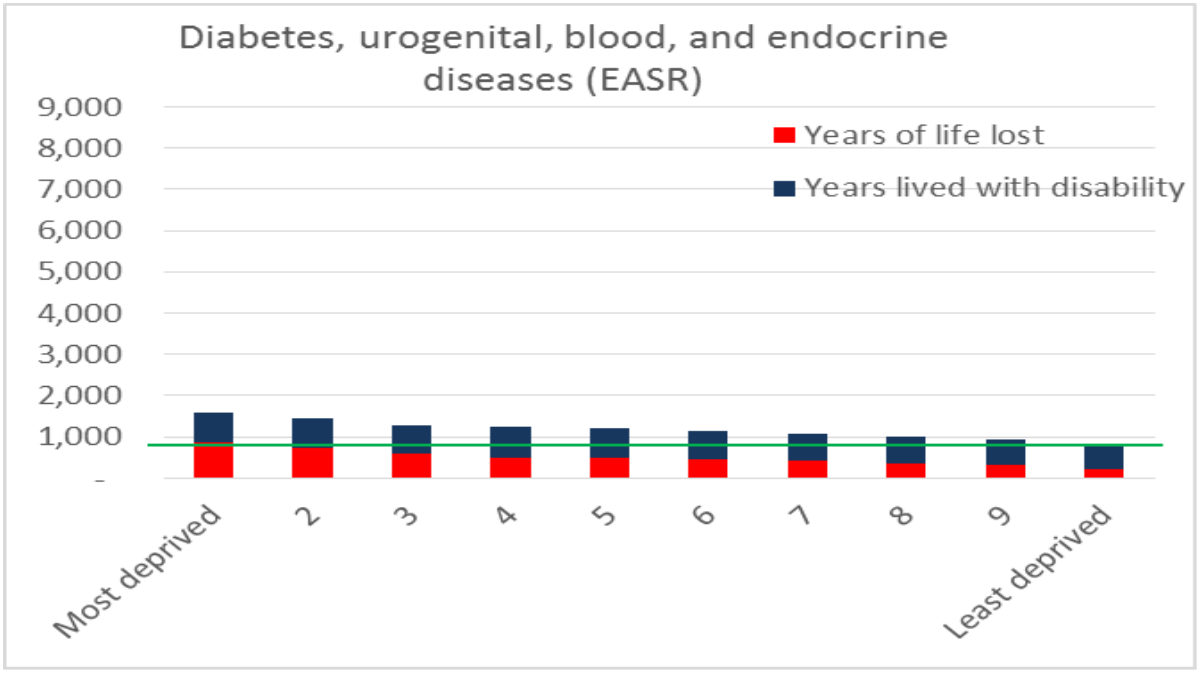

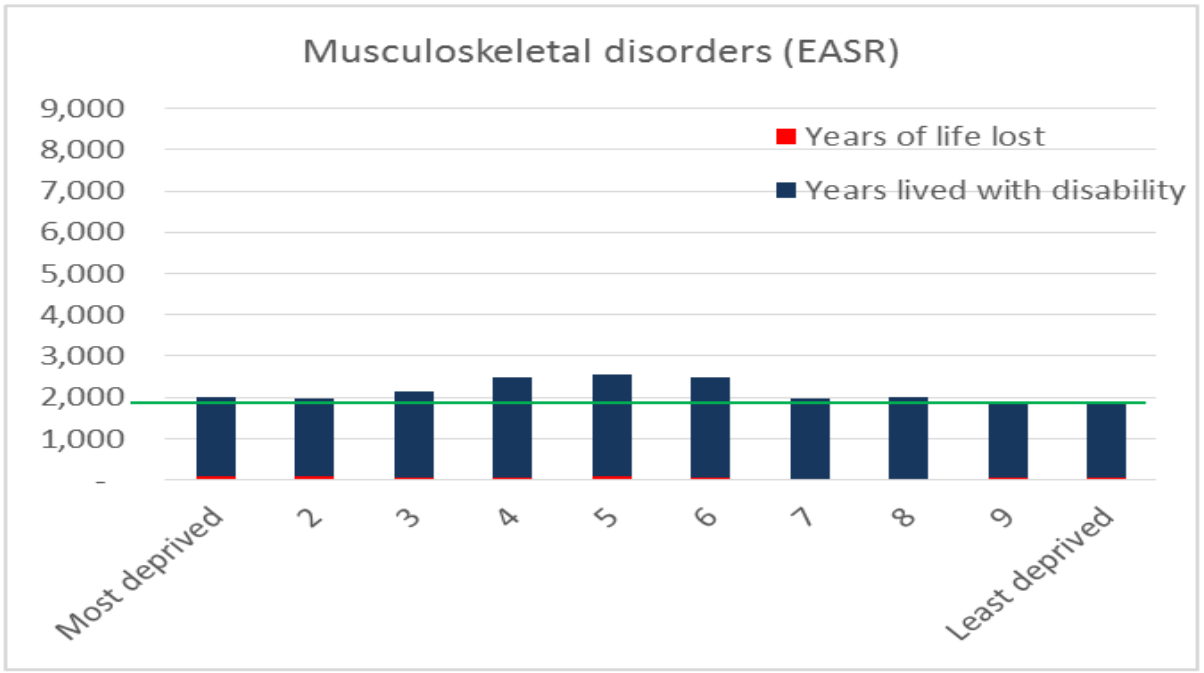

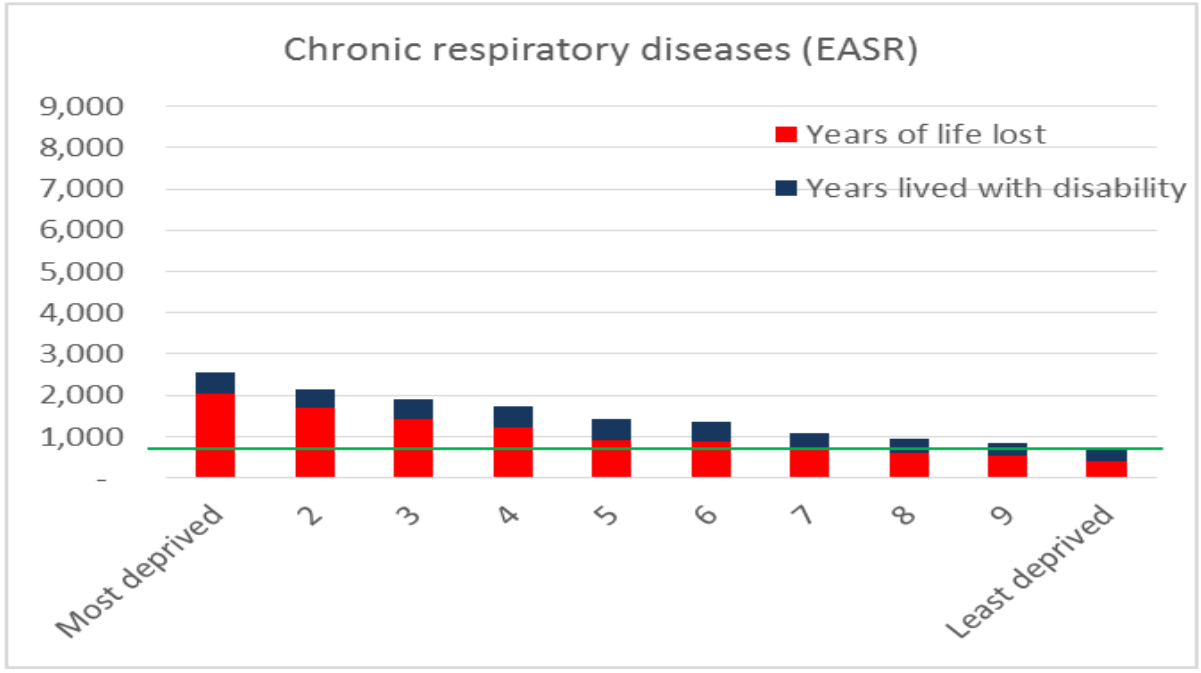

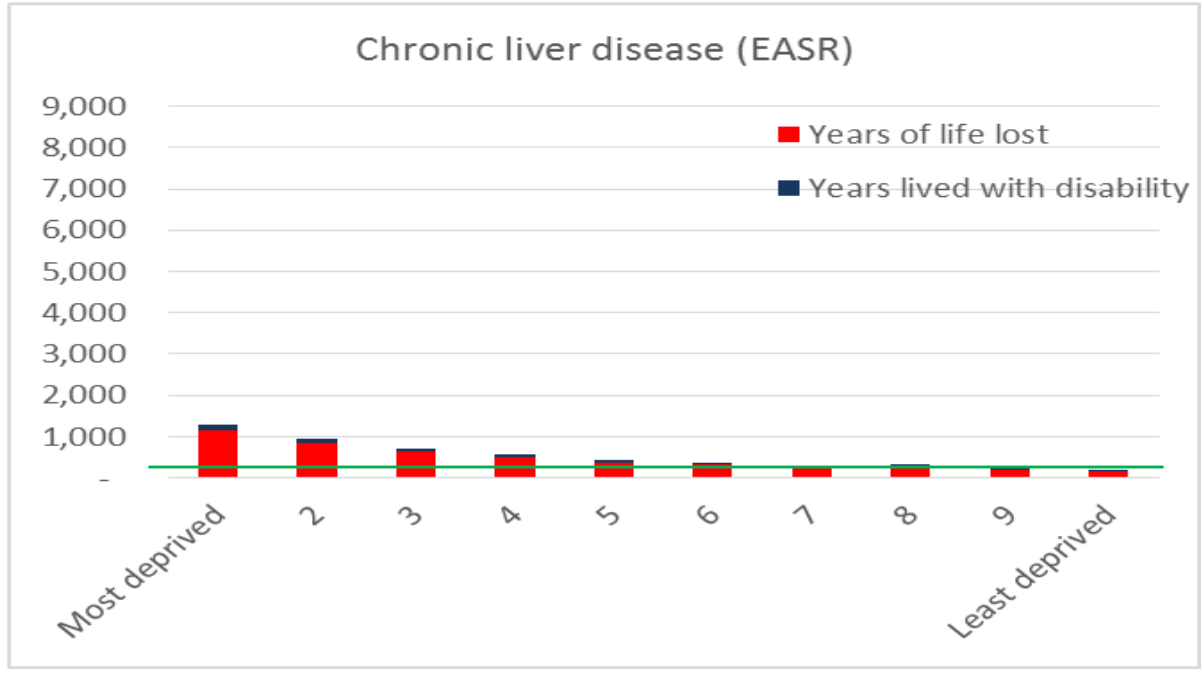

Implications for policy and planning

- Huge opportunity for preventative public health : A large proportion of the disease that leads to illness and early death is preventable.
- If levels of health in Scotland matched our least deprived populations, we would have one of the lowest burdens of disease of any developed country.
- Preventative action around our mental health – data points to focus on the wider determinants of health (employment, income, place, education)
- Policies and actions around substances that harm our health (alcohol, cigarettes, drugs) - must focus on cost, availability and acceptability to have a significant impact.
- Self-management of conditions, through the effective use of technology to slow progress of disease, is also essential to reduce burden on health and care services (e.g. for COPD, heart conditions, diabetes and hypertension).
- Workforce and services must be proportionate to need, and this varies by condition.

What SBoD tells you (now, soon and future…)

- Magnitude of disease burden (by age and gender)
- SBoD compared to global burden estimates – warning!
- Socio-economic and geographical inequalities in burden
- Burden attributable to specific risk factors
- Situation in 10 years if there is no change
- The preventative interventions which would have biggest positive impact on burden, and costs associated
- ?Workforce, secondary care, primary care related burden

What you should do with this information ….

- MAKE THE CASE FOR PREVENTION
- Data driven resource allocation
- Informed workforce planning (warning: burden ≠ workload)
- Understand potential impact of interventions / strategies
- Explore cost effectiveness of interventions / strategies

- Get involved: nhs.healthscotland-sbod-team@nhs.net