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

Diane Stockton

*NHS Health Scotland*
Scottish National Burden of Disease, Injuries and Risk Factors Study (SBoD)

Diane Stockton
NHS Health Scotland
diane.stockton@nhs.net
### SBoD Study team

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

Individuals

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

Primary Care

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

Secondary Care

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

Other

- Register of Deaths
- Cancer Registry
- Diabetes Register
- Learning Disability Statistics
- Scottish Health Survey
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
What were the 25 most common causes of burden?

Non-fatal burden (YLD)
Fatal burden (YLL)

Top 5 (of 132)
24.1% of total burden

Top 10 (of 132)
45.0% of total burden

Top 25 (of 132)
69.2% of total burden
Burden by age and gender

0 to 14 years
- Congenital anomalies
- Neonatal 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

- Years of life lost
- Years lived with disability

Most deprived
2
3
4
5
6
7
8
9
Least deprived
## Diabetes, urogenital, blood, and endocrine diseases (EASR)

- **Years of life lost**
- **Years lived with disability**

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## Musculoskeletal disorders (EASR)

- **Years of life lost**
- **Years lived with disability**

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## Chronic respiratory diseases (EASR)

- **Years of life lost**
- **Years lived with disability**

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## Chronic liver disease (EASR)

- **Years of life lost**
- **Years lived with disability**

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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