Unit 3 Outcome 1 SAC 2 Revision Booklet ANSWERS

Question 1 (5 marks)

A range of factors impact health status in Australia.

a. Explain what is meant by biological factors.

Factors relating to the body that impact on health and wellbeing, such as genetics, body weight, blood pressure, cholesterol levels, birth weight.

b. Use two biological factors to explain differences in health status between males and females in Australia.

Blood pressure- Males are more likely to experience hypertension than females. This contributes to higher rates of cardiovascular and kidney disease among males, thus impacting morbidity rates and rates of YLD in burden of disease.

Genetics (hormones)- Higher levels of testosterone among males have been linked to increased risk-taking behaviours contributing to the higher levels of injuries experienced by males compared to females. This therefore has an effect on mortality rates and premature death rates of males (YLL) contributing to burden of disease.

***Could also choose: genetics- distribution of fat for males, body weight, glucose regulation

Question 2 (12 marks)

A range of factors influence health status and burden of disease in Australia, including body mass index and dietary risks.

a. Explain what is meant by body mass index.

Body mass index (BMI) a statistical measure of body mass calculated by dividing weight (in kilograms) by height (in m2).

A score of 18.6–24.9 is considered a healthy weight. Between 25–29.9 is considered overweight and 30 and over is considered obese.

b. Outline two ways that high body mass index contributes to the burden of disease in Australia.
High body mass index usually means there is a greater strain on the heart, which increases the risk of hypertension and of high levels of cholesterol in the blood. This increases the risk of cardiovascular disease, heart attack and stroke, which contributes to years of life lost due to disability in DALY's, which measure burden of disease.

High body mass index can contribute to conditions such as anxiety and depression, through poor body image leading to low self-esteem and self-concept. Children with high body mass index can be particularly susceptible to these conditions, and could possibly be enhanced through bullying, thereby contributing significantly to morbidity among younger age groups and burden of disease.

***Could also choose: increased risk of cancer, increased risk of Type 2 Diabetes, increased risk of Kidney Disease, increased risk of Arthritis and Osteoporosis, increased risk of Asthma.

The following graph shows the burden of disease attributable to low fruit intake.

![Graph showing burden of disease attributable to low fruit intake.](source)

**Figure 10.27: Proportion (%) of burden attributable to a diet low in fruit, by fatal versus non-fatal burden (a) and sex (b), 2011**


c. Explain what is meant by burden of disease.

**Burden of disease measures the impact of disease and illness. Specifically, it measures the gap between current health status, and an ideal situation where everyone lives to an old age free of disease and illness. It is measured in a unit called a DALY (disability adjusted life year), which is made up of YLL (years of life lost due to premature death) and YLD (years of life lost due to disability).**

d. Compare the proportion of DALYs caused by low intake of fruit attributed to males compared to females.
Males have a higher proportion of DALY’s caused by low intake of fruit compared to females, at 65.1% and 34.9% respectively.

e. Identify the condition for which inadequate intake of fruit caused the greatest proportion of disease burden through fatal outcomes. 1 mark

Oesophageal cancer

f. Identify the condition for which inadequate intake of fruit caused the greatest proportion of disease burden through non-fatal outcomes. 1 mark

Coronary heart disease

g. Besides inadequate fruit intake, identify one dietary risk and explain how it contributes to burden of disease in Australia. 2 marks

Under consumption of dairy - Not consuming enough dairy foods can lead to inadequate intake of calcium. Calcium is a mineral important in strengthening bones. If a person if not consuming enough calcium this can lead to increased risk of osteoporosis, a bone disease characterised by weak bones that are susceptible to fracture. This contributes to burden of disease through increased morbidity rates (years of life lost due to disability).

***Could also choose: under consumption of vegetables, low intake of iron, low intake of fibre, high intake of fat, high intake of sugar, high intake of salt

**Practice Question** (7 marks)

Environmental factors contribute to many of the variations in health status between those living within and outside of Australia’s major cities.

a. Explain what is meant by ‘environmental factors’. 1 mark

Environmental factors are those physical features that surround us. It is the physical surrounding in which we live, work and play and includes workplaces, housing, roads and infrastructure.

b. Identify two environmental factors, and explain how they contribute to variations in health status between those living within and outside of Australia’s major cities. 6 marks

GEOGRAPHIC LOCATION - The area in which a person lives may determine the type of foods that they can access. Living in remote areas may make it difficult to access fresh food items such as fish, fruit and vegetables. As a result, some people may rely on processed foods, which are often higher in fat, salt and sugar and can lead to overweight and obesity. This explains why those living outside of major cities experience higher prevalence of cancer, diabetes, arthritis and CVD. The location of health services can influence whether a person living outside major cities can access healthcare in times of need. Conditions can go undiagnosed and untreated, which accounts for lower life expectancy and the 1.4 times higher mortality rate.

WORK ENVIRONMENTS - Common occupations in rural and remote areas include farming, mining and fishing. All of these industries have certain risks (including a higher risk of injuries) associated with the physical environments in which they occur, therefore this accounts for the greater burden of disease (avoidable deaths – YLL) and higher injury rates (YLD) for those living outside of major cities compared to those living inside them.
Many jobs in rural and remote areas are based outdoors, which can increase UV exposure and the risk of skin cancer, which accounts for the higher prevalence of melanoma for those living outside major cities.

**Could also choose Climate and climate change and Infrastructure**

**Practice Question** (7 marks)

The following graph shows the highest level of secondary school completed by those aged 18 and over according to Indigenous status (2014-15).

Source: Adapted from AIHW, Aboriginal and Torres Strait Islander Health Performance Framework 2017 online data tables.

a. Using data, briefly describe the difference in the highest level of secondary school achieved by Indigenous Australians compared to non-Indigenous Australians. 3 marks

The graph shows that more Non-Indigenous Australians aged 18 and over in 2014-15 completed year 12 compared to Indigenous Australians, with approx. 68% compared to 28% respectively. More Indigenous Australians completed year 11 and below compared to Non-Indigenous, approx. 15% and 10% at year 11, 30% and 20% at year 10, and 28% and 12% at year 9 and below respectively. Overall the graph shows that Non-Indigenous Australians are more likely to complete their schooling, with less students dropping out before year 12.

b. Briefly explain two ways that the difference described in part a. may influence variations in burden of disease between Indigenous and non-Indigenous Australians. 4 marks

Education allows us to gain the knowledge we need to be able to make healthy choices and know which behaviours are good for our health. As less indigenous Australians finish year 12, this may account for the higher rates of smoking and alcohol abuse in the Indigenous community and therefore the higher prevalence of CVD, lung cancer and mental health issues they experience.
Education also allows people to gain meaningful employment. As less Indigenous Australians finish year 12, this could account for the percentage of unemployment in Indigenous people, being 18.9% compared to 4.3% for non-indigenous. With unemployment, less money is available to purchase good quality nutritious foods and therefore cheaper alternatives are often eaten, this leads to more sugar, salt and saturated fat being ingested and higher morbidity rates through CVD, cancer and Type 2 Diabetes.

Indigenous and Non-Indigenous Health – practice SAC questions

Fig 1: Life expectancy at birth, by sex and Indigenous status, 2005–2007 and 2010–2012
(ALHW: The health and welfare of Australia’s Aboriginal and Torres Strait Islander People 2015)

Using the data, identify two trends in Figure 1 above

***Start with broad statement, then use specific data from the graph in your answer

**Trend 1:** Indigenous Australian’s have lower life expectancy at birth when compared with Non-Indigenous Australian’s. For example, Indigenous Males (2005/7) had a life expectancy of approx. 70 years, compared to Non-Indigenous Males at approx. 80 years.

**Trend 2:** For both Indigenous and Non-Indigenous, females had a higher life expectancy than males, with females (Indigenous, 2005/7) at approx. 72 years compared to males (Indigenous, 2005/7) approx. 70 years.
Trend 3: Over time, life expectancy has increased slightly between the years of 2005/7 to 2010/12. For example, indigenous males 2005/7 were expected to live to approx. 70 years, compared with approx. 72 years in 2010/12.

In the 5 year period 2008–2012:

- two-thirds (65%) of deaths among Indigenous people occurred before the age of 65, compared with 19% of deaths among non-Indigenous people (The health and welfare of Australia’s Aboriginal and Torres Strait Islander People 2015-AIHW)

Using the biological, sociocultural and environmental factors, suggest two reasons that might account for the difference in deaths between Indigenous and Non-Indigenous Australians

Biological – Glucose Regulation- Indigenous Australian’s on average, have higher rates of impaired glucose regulation than Non-Indigenous. This is a pre-curser for Type 2 Diabetes and could explain the difference in death rates between the population groups.

Sociocultural- SES- Indigenous Australian’s are more likely to have lower levels of SES. This means that they generally have lower levels of education, which means less knowledge of healthy lifestyle behaviours, such as the impact of drugs, alcohol, unhealthy diet, lack of exercise etc. If they are less likely to follow healthy lifestyle behaviours, this could contribute to the difference in death rates due to them having a higher risk of associated diseases such as CVD, Obesity, Type 2 Diabetes and mental health issues linked with drug and alcohol abuse.

Environmental- Geographic Location- Indigenous Australians are more likely to live in remote locations. This reduces their access to healthcare services. Without readily available access to these services, they are more likely to experience health issues to a worse extent due to lack of treatment, prevention and early diagnosis. This can contribute to the higher percentage of early deaths experienced by Indigenous Australians.

Leading broad causes of death, by Indigenous status, 2008–2012 (per cent) (AIHW:The health and welfare of Australia’s Aboriginal and Torres Strait Islander People 2015)
What health status indicator is the above data measuring?

Mortality

Identify a biological, sociocultural or environmental factor and explain how this factor might contribute to the leading cause of death for Indigenous Australians.

**First look at the leading cause of death for Indigenous – which is CVD, then you need to think of a factor that could lead to CVD and is relevant to the Indigenous pop group.**

Sociocultural- SES (income) - Indigenous Australians are more likely to have lower levels of SES. This can result in a lower income and inability to purchase nutritious foods that help protect them from CVD, such as fresh fruit and vegetables that provide fibre and vitamins/minerals. With less income, they may be forced to buy cheaper foods, high in saturated fats that contain LDL cholesterol which lines arteries and contributes to CVD through increased risk of heart attack and stroke.

Infant mortality, by Indigenous status, 1998 to 2012 (AIHW: The health and welfare of Australia’s Aboriginal and Torres Strait Islander People 2015)
Identify a trend from the above graph

***Start with broad statement, then use specific data from the graph in your answer

Trend 1: Infant mortality rates have decreased dramatically for Indigenous Australians over time, with approx. 13.8 deaths per 1,000 live births in 1998, compared with approx. 6 in 2012. Infant mortality rates have only slightly decreased for the Non-Indigenous population over the same time period, with approx. 4.5 in 1998 compared to 4 in 2012.

Trend 2: Indigenous Australians have higher rates of infant mortality rates during 1998 to 2012 compared to Non-Indigenous Australians. In 1998 Indigenous had approx. 13.8 deaths per 1,000 live births, compared with approx. 4.5 for Non-Indigenous.

Proportion of children fully vaccinated at 1, 2 and 5 years of age, by Indigenous status, 31 December 2013

Outline a health status indicator that the above data may impact

Morbidity (children not getting vaccinated can lead to them contracting diseases and illnesses)

Identify a trend from the above graph

***Start with broad statement, then use specific data from the graph in your answer

Trend 1: Indigenous households are more likely to be overcrowded compared with Non-Indigenous households, with approx. 15.8% of Indigenous households being overcrowded in 2001, compared with only approx. 3.5% for Non-Indigenous.

Trend 2: The rates of overcrowding in Indigenous households has decreased over time, with approx. 15.8% of Indigenous households being overcrowded in 2001, compared to approx. 12.5% in 2011.

Outline two ways in which overcrowded housing may impact on the health and health status of Indigenous Australians.

***First look at the question, it’s asking you to explain how overcrowded housing can impact on both health and wellbeing (PMSES) and health status (life expect, mortality, morbidity etc.)

When a house is overcrowded, this places pressure on bathroom/kitchen facilities, and can lead to germs and bacteria if the house is not cleaned often and sufficiently. This means they are more
susceptible to infectious/communicable diseases, and can lead to increased morbidity for Indigenous Australians, as well as decreased physical health and wellbeing due to lowered immune system and sickness.

Overcrowded housing can also impact the mental health and wellbeing of Indigenous Australians, as not having enough space in the house to complete daily tasks without intrusion and feeling embarrassed about not being able to invite friends over could cause stress and anxiety, contributing to morbidity or mortality through suicide rates.