**HEALTH AND HUMAN DEVELOPMENT – 2014**

Unit 3 Outcome 1, Task 2b – Data Analysis

**Teacher Advice**

This task has been developed within the scope of the Study Design and Assessment Handbook.

The relevant dot points from the Study Design for this task are:

***Key knowledge***

This knowledge includes

* the National Health Priority Areas (NHPAs) including:

– key features and reasons for selection of each NHPA

– determinants that act as risk factors

– direct, indirect and intangible costs to individuals and communities of NHPAs

– one health promotion program relevant to each NHPA

* the role of nutrition in addressing the following conditions recognised in the NHPAs: cardiovascular disease, diabetes mellitus, colorectal cancer, obesity and osteoporosis, taking into account, where relevant, the function (as a determinant of health) and major food sources of protein, carbohydrate (including fibre), fats (mono, poly, saturated and trans), water, calcium, phosphorus, sodium and vitamin D.

***Key skills***

These skills include the ability to

* explain and justify one health promotion program that addresses each NHPA
* explain the role of nutrition in addressing specific conditions within the NHPAs, including the functions and major food sources of relevant nutrients.

The relevant dot points from the Assessment Handbook for this task are:

* explain the key features of the selected NHPAs taking into consideration; reasons for selection, costs to the individual and community, and the determinants that act as risk factors
* explain at least one health promotion program and its relationship to relevant NHPAs
* justify the implementation of at least one health promotion program in relation to relevant NHPAs
* demonstrate an understanding of the role of nutrition in addressing specific conditions within the NHPAs taking into consideration: the functions as a determinant of health of relevant nutrients and the major food sources
* have the opportunity to demonstrate the highest level of performance.

**Student preparation**

Students should be adequately prepared with regards to all relevant key knowledge and key skills dot points before sitting the task. Teachers should read through SAC tasks prior to students completing the task to ensure all relevant content has been addressed.

As well as having an understanding of key knowledge points and the ability to carry out the key skills, students should be able to explain or define all words within the dot points. Many of these definitions are found in the glossary of the ‘Advice for Teachers’ document. Although these definitions do not have to be memorised, the meaning cannot be compromised by the students’ interpretation.

Ensure the correct names for NHPAs are used. For example, ‘cardiovascular health’, not ‘cardiovascular disease’.

Students should have knowledge of the conditions that are the focus of each NHPA, particularly the conditions that have nutrition as a risk or protective factor (i.e. cardiovascular disease, diabetes mellitus, colorectal cancer, obesity and osteoporosis).

Use the mark allocation as a guide as to how much detail is required about health promotion strategies. Students should ensure they discuss the strategy itself (as opposed to benefits of the strategy) if this is what the question has asked for.

**Time**

This SAC has been developed to be completed in a 40 minute timeframe. Teachers may want to add reading time to simulate the end of year examination. It can also be split into two parts if time does not permit it to be completed in one session.

**Materials**

Students only require a pen to complete this task.

**Conditions**

This task should be completed under test conditions. It has been written to reflect the end of year examination and provides valuable practice for the skills required to succeed in the examination.

Students should not have access to any notes, mobile phones, calculators or any other electronic device.

**HEALTH AND HUMAN DEVELOPMENT**

Unit 3 Outcome 1, Task 2b – Data Analysis

Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



STUDENT NUMBER

Figures

Letter

• Students are permitted to bring into the assessment room: pens, pencils, highlighters, erasers, sharpeners and rulers.

• Students are NOT permitted to bring into the assessment room: blank sheets of paper and/or white out liquid/tape.

• No calculator is allowed in this assessment.

**Materials supplied**

• Question and answer booklet.

• Additional space is available at the end of the booklet if you need extra paper to complete an answer. Ensure any extra space used is labelled clearly with the question number.

**Instructions**

• Write your **name** and **student number** in the space provided above on this page.

• All written responses must be in English.

**Students are NOT permitted to bring mobile phones and/or any other unauthorised electronic**

**devices into the assessment room.**

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**Question 1** (15 marks)

The following graph shows the proportion (per cent) of people experiencing cardiovascular disease according to the region in which they live. Cardiovascular disease is a focus of the National Health Priority Area ‘Cardiovascular health’.

\* ‘Inner rural’ refers to towns in rural Australia such as Ballarat, Bendigo and Shepparton.

\*\* ‘Outer rural’ refers to locations outside of these rural towns where the land is less densely populated.

1. Briefly explain cardiovascular disease. 1 mark

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1. Discuss the relationship between the region where people live and the proportion of people experiencing a cardiovascular disease. 1 mark

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1. Identify one behavioural (besides food intake / nutrition) and one physical environment determinant and explain how they may contribute to the differences in the rates of

cardiovascular disease between those in major cities and those in rural and remote areas. 4 marks

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1. Explain how consuming fats can decrease the risk of developing cardiovascular disease. 4 marks

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1. i. Identify and briefly explain a health promotion program developed to address

cardiovascular disease. 3 marks

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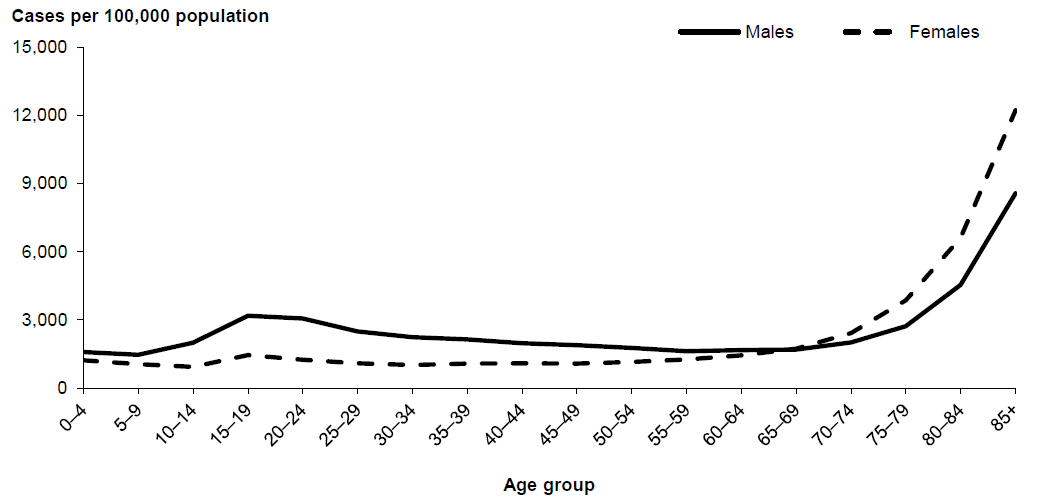
ii. Justify why this program was developed. 2 marks

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**Question 2** (11 marks)

The following graph shows the rate of hospitalisations (per 100 000 people) due to injuries for different age groups and according to sex.



1. Identify the NHPA that focusses on injuries. 1 mark

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1. Outline two differences between males and females in relation to hospitalisation rates due to

injuries according to the graph. 2 marks

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1. Outline one direct and one indirect cost to the individual as a result of injuries. 2 marks

Direct\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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1. Outline one indirect and one intangible cost to the community as a result of injuries. 2 marks

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1. Identify two determinants of health and explain how each can increase the risk of injuries. 4 marks

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**Question 3** (4 marks)

Obesity rates in Australia increased from around 18.5% in 1995 to around 28.3% in 2012-13 (AIHW 2012; ABS 2013).

Discuss the role of nutrition in addressing the increase in rates of obesity.

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**END OF QUESTION AND ANSWER BOOKLET**

**Extra space for responses**

**Clearly number all responses in this space.**

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**Answer Guide**

Please note that these answers are a guide only and do not represent every possible correct answer.

1. a. Students must briefly explain cardiovascular disease for one mark:

Cardiovascular disease relates to diseases of the heart and blood vessels.

b. Students should discuss the relationship between the region where people live and the proportion of people experiencing a cardiovascular disease as shown in the graph. Data should be used to gain one mark. An example could be:

As remoteness increases, so do rates of cardiovascular disease. In major cities around 4.5% of people experience cardiovascular disease compared to around 5.5% in outer rural and remote areas.

c. Students receive one mark for each relevant determinant they identify and a further mark for linking it to increased rates of cardiovascular disease. Examples include:

Behavioural –

* Physical activity: Those in major cities are more likely to exercise than those in rural and remote areas. As a result, those in major cities have lower rates of cardiovascular disease.
* Tobacco use: those in rural and remote areas are more likely to smoke which increases the rate of cardiovascular disease compared to those in major cities.

Physical environment –

* Access to recreation facilities: People in major cities generally have greater access to recreation facilities than those in rural and remote areas. This can enhance levels of physical activity and decrease the rate of cardiovascular disease.
* Location of food outlets: if people in rural and remote areas lack access to fresh healthy food, they may rely on energy dense foods which can increase the risk of obesity and cardiovascular disease.

d. Students must explain how consuming fats can decrease the risk of developing cardiovascular disease. Marks should not be awarded if students discuss how fats can increase the risk of cardiovascular disease. One mark is awarded for each fat that is identified and a further mark for explaining how it can decrease the risk of cardiovascular disease. If students use the same explanation twice (e.g. lowering low-density lipoprotein ) a maximum of three marks can be awarded. Examples include:

* Monounsaturated fats can decrease low-density lipoprotein which decreases the process of atherosclerosis and the risk of cardiovascular disease.
* Omega 3 fats can promote elasticity of the blood vessels which can decrease the risk of heart attack and stroke.
* Polyunsaturated fats reduce the impact of inflammation of blood vessels and can reduce the risk of cardiovascular disease as a result.

e. i. One mark is awarded for correctly identifying a health promotion program and a further two marks for explaining two aspects of it. Examples include:

* Shape up Australia: this Federal Government program works by encouraging people to adopt healthy behaviours by showing them which products and resources are scientifically proven to assist with weight management and reducing the rate of cardiovascular disease. The website contains many examples of how people can incorporate healthy activities in their lives for example, by swapping watching television for a walk in the park.
* The Heart Foundation Tick: This program works by showing consumers which products are healthier for their hearts. Manufacturers can apply to display the tick logo if their product meets certain criteria such as being lower in sodium or fat. This assists consumers in identifying healthier products and reducing their risk of cardiovascular disease.

ii. Students receive two marks for justifying the program they discussed in part e.i. Examples could be:

* Rates of obesity are increasing which puts more people at risk of cardiovascular disease. By educating people in ways to decrease their risk of obesity, the rates of cardiovascular disease will also decrease.
* Food intake is a key risk factor for cardiovascular disease. By showing consumers which products are healthier options, the risk of cardiovascular disease can be decreased.

1. a. Students receive one mark for identifying ‘injury prevention and control’.

b. There are many examples of differences in hospitalisation rates due to injuries between males and females as shown in the graph. Students should refer to the data in some way in their answer for full marks. Examples include:

* Males have around twice the rate of hospitalisations at age 15-19 compared to females.
* At age 85+, females have rates of around 12 000 per 100 000 compared to around 9 000 per 100 000 for males.

c. Students receive one mark for correctly outlining each relevant cost to the individual. Examples include:

Direct –

* Injuries often require medical treatment which can mean the individual must make a co-payment.
* If medication is required to treat pain for example, then the patient may have to make a co-payment.

Indirect –

* Injuries can result in disability which may mean the person cannot drive. If this is the case, they may have to pay for taxis.
* If the person is self-employed and cannot work, they may lose their income.

d. Students receive one mark for correctly outlining each relevant cost to the community. Examples include:

Indirect –

* A person who is injured may not be able to work for extended periods of time which can decrease taxation revenue.
* Family members may have to assist the individual with tasks such as washing, dressing, toileting and shopping. This can cause them to have less time for themselves.

Intangible –

* Injuries are generally unexpected which can cause shock and sadness for family members and friends.
* Injuries can lead to lifelong disabilities which can cause stress and anxiety for family and friends.

e. Students receive one mark for correctly identifying a determinant and a further mark for linking it to an increased risk of injuries. Examples could be:

* Biological: as a person gets older, their muscular and skeletal systems can decline increasing the risks of injuries such as falls.
* Behavioural: Risk taking behaviour can increase the risk of injuries such as broken bones from jumping off structures.
* Physical environment: poor road quality can increase the risk of car crashes by causing tyre blow outs for example.
* Social environment: those on low incomes may not be able to afford resources that reduce the risk of injuries such as cars with air bags.

1. Answers should include reference to four points relating to how nutrition can address obesity. If students make no reference to specific nutrients, they should not be awarded full marks. Points worth one mark include:

* Reference to a specific nutrient
* Reference to a food source
* Outlining the role the nutrient / food group plays in addressing obesity.

Examples worth two marks include:

* Water does not contain energy and can therefore decrease the risk of weight gain and obesity.
* Fibre in vegetables provides feelings of fullness so decreases the risk of obesity.

Examples worth four marks include:

* Consuming a diet low in fat can reduce overall energy intake and therefore decrease the risk of obesity. Consuming a high-fibre diet can decrease feelings of hunger which can reduce the risk of overeating and the development of obesity .
* Water contains no energy so by choosing water as a drink, energy intake may be decreased which can decrease the risk of obesity. Fruit and vegetables are high in fibre which can decrease the amount of glucose absorbed through the small intestine which can decrease energy intake and decrease the risk of obesity.

**HEALTH AND HUMAN DEVELOPMENT - 2014**

Unit 3 Outcome 1, Task 2b – Data Analysis

**Marking sheet**

Student Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  |  |  |  |
| --- | --- | --- | --- |
| **Question** | **Marks available** | **Marks awarded** | **Comments** |
| 1.a. | 1 |  |  |
| 1.b. | 1 |  |  |
| 1.c. | 4 |  |  |
| 1.d. | 4 |  |  |
| 1.e.i. | 3 |  |  |
| 1.e.ii. | 2 |  |  |
| 2.a.i.udylysisheir health as exlse aged 65+ assessing their health as exlcellent or very good. loping and contributing to premat | 1 |  |  |
| 2.b. | 2 |  |  |
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| 2.e. | 4 |  |  |
| 3. | 4 |  |  |
| TOTAL | 30 |  |  |

Overall comments\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**NOTE: This assessment is a school-based assessment. It is therefore a preliminary result only. The total result for all School Assessed Coursework in the study will be statistically moderated against the GAT and the end-of-year examination results.**