Solutions

Marking: **M1** a correct method, **A1** the correct answer, **B1** an independent mark.

Each answer shows the steps, then the **result**.

2.1

A: **primary**

B: **secondary**

C: **tertiary**

2.2

$1 - 1/5$

$= \mathbf{80\%}$

2.3

A: **Beveridge** (tax-funded)

B: **Bismarck** (social insurance)

C: **out-of-pocket**

2.4

any two of: an important health problem; a known latent or early stage; an accepted treatment that works better early; a suitable, acceptable test; benefits outweigh harms and costs

3.1

(a) lead-time bias: finding the cancer earlier adds time "from diagnosis" without delaying death; length-time bias: screening finds more slow-growing cancers, which have a good outcome anyway

(b) finding cancers that would never have caused harm; men get treatment side effects (e.g. incontinence, impotence) with no benefit

(c) the **death rate** from the disease in the whole population (in an RCT)

3.2

(a) $1 - 1/15 \approx \mathbf{93\%}$

(b) $0.85 \times 0.97 \approx \mathbf{82\%}$

(c) immunity is below the threshold, so outbreaks can spread

3.3

(a) $83 - 74 = \mathbf{9\ years}$

(b) any two of: income and poverty; housing and environment; education; work conditions; smoking and diet linked to these

(c) the **inverse care law**: those with the most need get the least care

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(d) many people at small risk give more cases than a few at high risk, e.g. lowering everyone's salt intake prevents more strokes than treating only people with very high BP

(e) any one of: taxes on tobacco or sugar; better housing; more GP services in poor areas; free school meals