StepBridge MD
USMLE REVIEW NOTES

STEP 1 | ORIGINAL SAMPLE

Biostatistics workflow sample

A study-design map, a two-by-two table workflow, and original review questions.

$69

FULL PROGRAM PRICE

4	3	17
designed pages	original questions	topic modules

EDUCATIONAL SCOPE

This sample is independently written and designed to demonstrate the StepBridge MD format. It is for exam preparation only and is not clinical advice, official exam content, or a substitute for individualized professional judgment.

Match the design to the measure

Start with how participants were selected. Then choose the frequency or association measure the design can actually support.

01

Cohort

Group by exposure, then observe outcome.

Risk or rate can be measured directly; risk ratio is often available.

02

Case-control

Group by outcome, then compare prior exposure.

Disease risk is not measured directly; use an odds ratio.

03

Cross-sectional

Measure exposure and outcome at one point or period.

Describes prevalence; temporal direction may remain unclear.

04

Randomized trial

Assign an intervention, then compare outcomes.

Randomization helps balance measured and unmeasured baseline factors.

Sources: CDC Field Epidemiology Manual, Analyzing and Interpreting Data; CDC Principles of Epidemiology.

A four-step interpretation workflow

Use the same sequence each time so a dense stem becomes a short set of decisions.

1

Name the design

Ask how groups were formed. This determines which denominators and measures are valid.

2

Build the table

Place exposure in rows and outcome in columns. Label every cell before calculating.

3

Calculate, then interpret

State the formula, numeric result, comparison group, and direction of association.

4

Check precision and validity

Read the confidence interval, then consider bias, confounding, and whether exposure preceded outcome.

FAST CHECK

Association is not automatically causation

A small p value does not remove selection bias, information bias, or confounding. Interpret the design and interval together.

Source: CDC Field Epidemiology Manual, sections on measures of association and confidence intervals.

Quick check: Biostatistics

These independently authored questions pair each answer with a short explanation.

QUESTION 1

In a cohort, 30 of 200 exposed learners and 15 of 300 unexposed learners report an outcome. What is the risk ratio?

Answer: 3.0

Risk among exposed is 30/200 = 0.15. Risk among unexposed is 15/300 = 0.05. The ratio is 0.15/0.05 = 3.0.

QUESTION 2

A screening test is positive in 90 of 100 people who have the condition. What is its sensitivity in this sample?

Answer: 90%

Sensitivity is true positives divided by all people with the condition: 90/(90 + 10).

QUESTION 3

A study reports RR 1.8 with a 95% confidence interval of 1.2 to 2.7. What is the best first interpretation?

Answer: The data show a positive association and the interval excludes the null value of 1.0.

The interval describes values compatible with the data. It does not, by itself, prove causation or rule out bias.

Readable sources: cdc.gov/field-epi-manual/; archive.cdc.gov/www_cdc_gov/csels/dsepd/ss1978/