Biomedical Engineer interview questions

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What to expect

Interviews for biomedical engineering roles tend to test three things at once: whether you can do the engineering, whether you understand the regulatory environment medical devices sit in, and whether you can work with clinical staff who don't share your technical background. Expect a mix of process questions about your design and testing approach, scenario questions that check judgement when equipment fails in a live clinical setting, and behavioural questions about working across engineering and clinical teams.

- **Technical/process:** Questions about how you approach device design, validation testing and use of tools like SolidWorks, MATLAB or ANSYS.
- **Regulatory/compliance:** Questions checking your understanding of TGA requirements, ISO 13485 and ISO 14971, and how you build compliance into project work rather than treating it as an afterthought.
- **Scenario/judgement:** Hypothetical situations, usually equipment failure or inconsistent readings in a clinical setting, testing how you diagnose problems and manage risk to patients under time pressure.
- **Behavioural/client-facing:** Past-experience questions about working with clinicians, manufacturers or hospital staff who need technical issues explained in plain terms.

Most processes start with a phone screen covering your background and eligibility (registration, clearances, right to work), followed by a technical interview with an engineering or clinical engineering lead that may include a portfolio review or a walk-through of a past project. Larger hospitals and device manufacturers sometimes add a practical or written technical assessment before a final behavioural round with the wider team.

1. Walk me through how you'd take a new medical device component from initial concept through to something ready for regulatory submission.

Why they ask

This checks whether you understand the full design-to-compliance pathway, not just isolated CAD or testing skills.

How to structure your answer

Answer as a sequential walkthrough: requirements gathering, design and prototyping, testing and validation, documentation, and submission, noting where clinicians and regulatory standards come into each stage.

Example answer

“I'd start by clarifying the clinical requirement with the end users, since a device spec that looks fine on paper often misses something a clinician would flag immediately. From there I'd move into CAD design in SolidWorks, building in engineering standards from the start rather than retrofitting them later. Once I had a prototype, I'd run it through validation testing against the relevant AS/NZS and ISO 13485 requirements, documenting results as I went so the technical file wasn't a last-minute scramble. Any non-conformances get resolved and re-tested before the design is locked in for submission.”

2. Tell me about a time you had to troubleshoot a piece of medical equipment that was giving unreliable results in a clinical setting.

Why they ask

This is a direct behavioural check on your practical troubleshooting skills, which the role relies on heavily given the maintenance and support component of the job.

How to structure your answer

Use STAR: describe the situation and the equipment involved, your specific task, the diagnostic steps you took, and the result.

Example answer

“A monitoring device on a ward was intermittently giving readings that didn't match what the clinical staff were observing. My task was to work out whether the fault was in the device itself, its calibration, or the way it was being used. I checked the calibration logs first, then ran the device through its diagnostic self-test, and finally observed it in use to rule out an operator or setup issue. It turned out to be a loose sensor connection that only showed up under certain movement conditions. I fixed the connection, re-tested it against known reference values, and got it back into service within the shift so the ward wasn't left without a working unit.”

3. A ward reports that a patient monitor has been giving inconsistent readings overnight and nursing staff are asking whether it's safe to keep using. How do you handle this?

Why they ask

This scenario tests judgement under time pressure and how you weigh patient safety against operational disruption, which is central to hospital-based biomedical engineering work.

How to structure your answer

Structure the answer around immediate risk assessment first, then investigation steps, then communication back to clinical staff, showing you'd rather take equipment out of service than leave doubt unresolved.

Example answer

“My first move would be to assess whether the device poses an immediate patient safety risk, and if there's genuine doubt, I'd recommend taking it out of service and switching the patient to a backup monitor rather than leaving staff uncertain overnight. Once the immediate risk is managed, I'd investigate the fault properly, checking calibration, connections and any recent maintenance history. I'd keep the nursing staff updated on what I'd found and when the device would be back in service, because they need to trust the equipment they're using, and vague reassurance without evidence doesn't help them.”

4. How do you make sure a device you're working on actually meets TGA and ISO 13485 requirements rather than just ticking boxes at the end?

Why they ask

This probes whether you treat regulatory compliance as integrated into engineering work or as paperwork bolted on afterward, which matters given the role's compliance responsibilities.

How to structure your answer

Explain your working knowledge of the standards and describe how you build compliance checks into the design and testing process from the start.

Example answer

“I try to bring regulatory requirements in at the design stage rather than treating them as a final hurdle. That means checking early on which ISO 13485 quality processes and TGA classification requirements apply to the device, and building test protocols around ISO 14971 risk management from the outset. Documentation gets written as the project progresses rather than reconstructed at the end, which makes the final technical file more accurate and saves time when questions come back from a regulatory reviewer.”

5. Describe a time you had to explain a technical issue with a device to a clinician or hospital staff member who had no engineering background.

Why they ask

Stakeholder communication with non-technical clinical staff is a core, recurring part of this role, and interviewers want evidence you can do this without frustration on either side.

How to structure your answer

Use STAR, with particular focus on how you adapted your language and confirmed understanding, since that's the skill being tested.

Example answer

“A specialist wanted to understand why a piece of diagnostic equipment needed to go offline for recalibration rather than a quick fix. Instead of explaining the technical detail of the calibration drift, I focused on what it meant for them: the readings couldn't be trusted for patient decisions until it was corrected, and I gave them a realistic timeframe. I checked they understood by asking if they had questions about how it would affect their patient list that day, rather than assuming the explanation had landed.”

6. What CAD or simulation tools have you used, and can you describe a specific project where you applied them?

Why they ask

This checks genuine, hands-on familiarity with tools like SolidWorks, AutoCAD or ANSYS rather than a tool being listed on a resume without real experience behind it.

How to structure your answer

Give a specific project example and walk through what the tool was used for and why, rather than a general list of software names.

Example answer

“I've used SolidWorks for detailed component design and AutoCAD for broader technical drawings, and ANSYS for simulating stress and fatigue behaviour before physical prototyping. On one project, I used ANSYS to model how a prosthetic component would handle repeated load cycles, which let me identify a weak point in the design before we committed to manufacturing a physical prototype. That saved a round of physical testing that would have picked up the same issue later, but at greater cost in time and materials.”