



CUTTING-EDGE ANESTHESIA: Visualizing patient vital signs during surgery

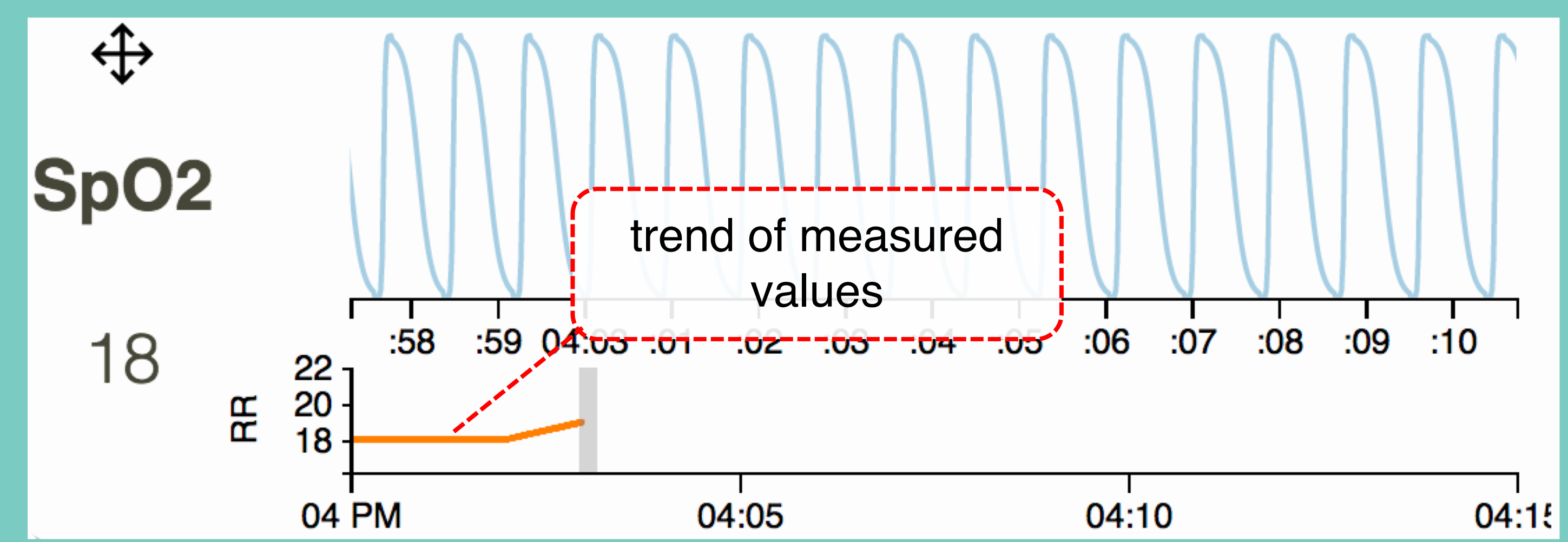
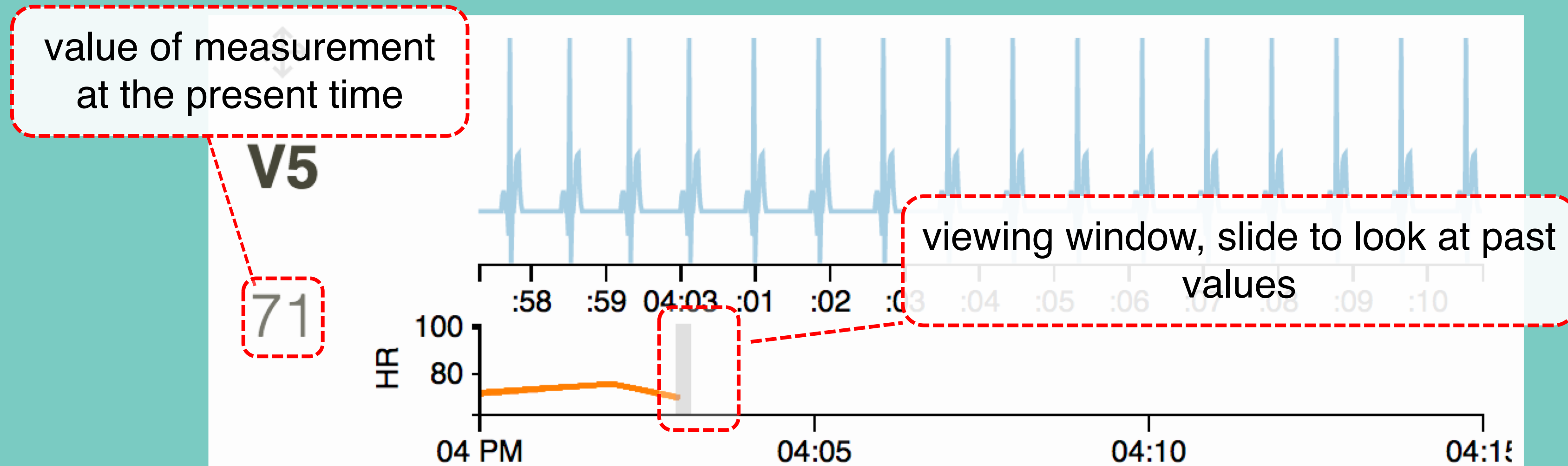
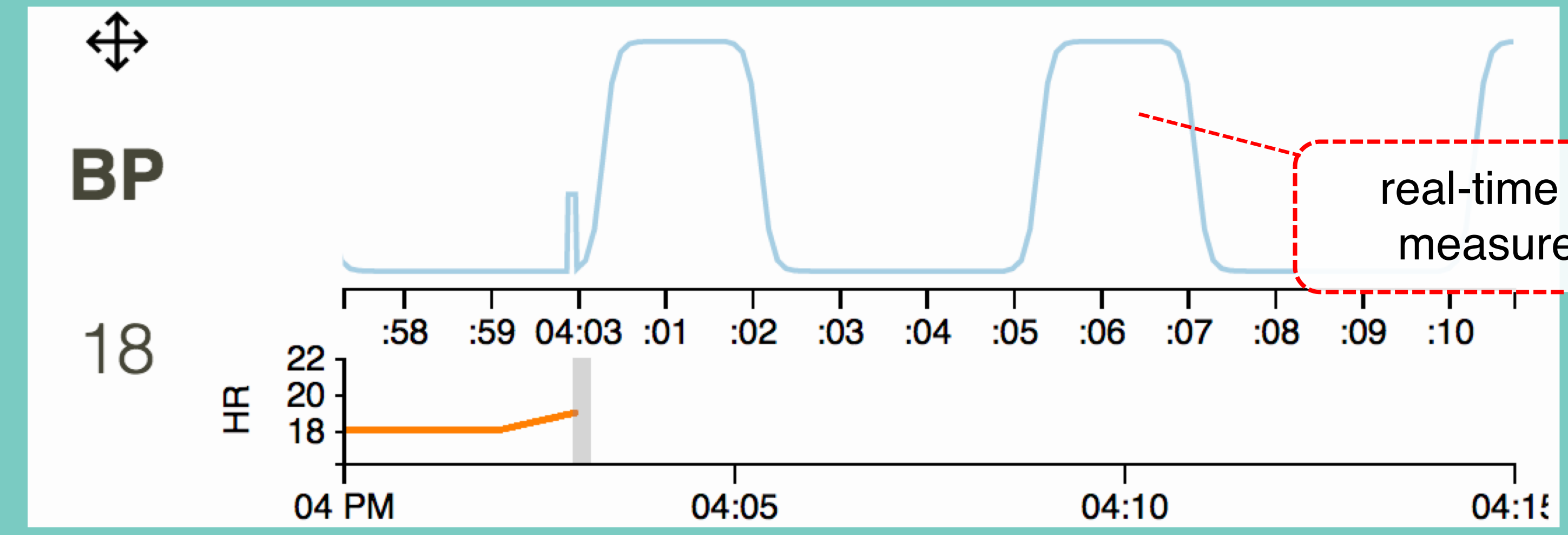
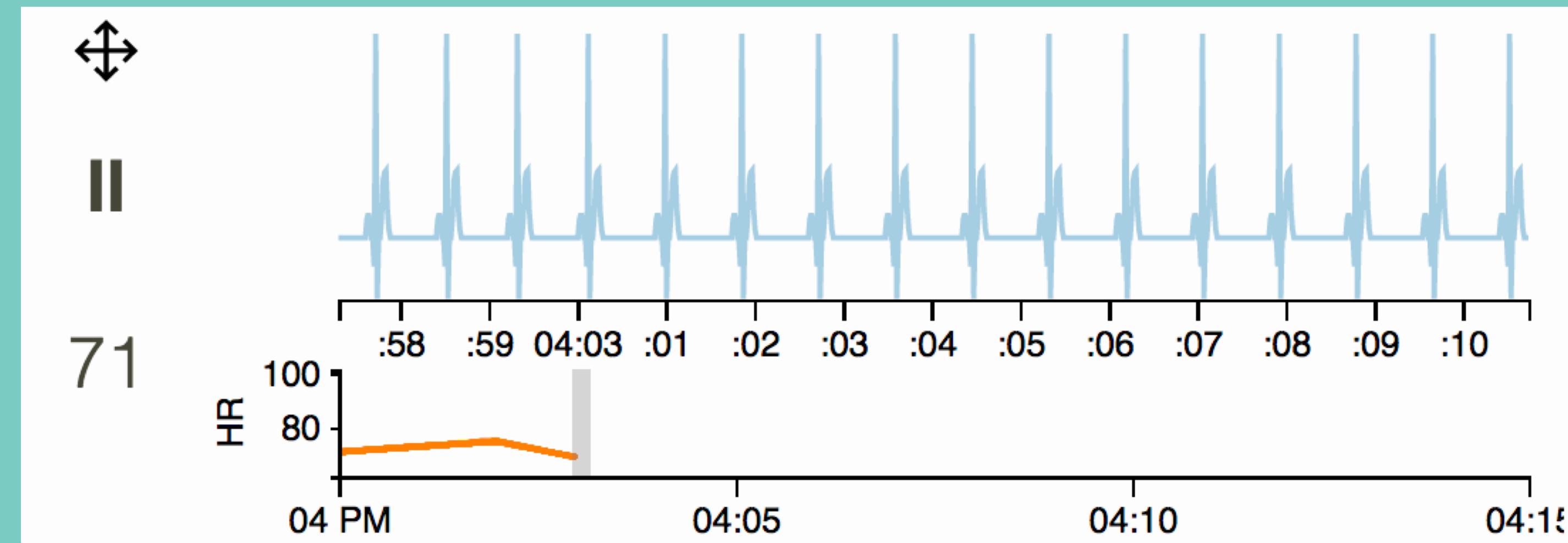
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Can we efficiently increase the amount of patient information conveyed to doctors during surgery?

Current vital monitors are **NOT** customizable

Current screens do **NOT** include vitals trend visualization—crucial to preventing adverse events during surgery

Current screens do **NOT** allow extensive exploration of past measurements nor automatic calculation of vitals statistics



drag to reposition plot

View EKG II View EKG V5 View SpO2 View Art View BP
View ETCO2 View QRS View ST View QT View PR
View SystBP View DiasBP View MAP

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select to display custom traces

calculate and plot some vitals statistics of interest automatically

restore all plots to default settings
Restore All Defaults

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| <p>1 Interview anesthesiologists</p> <ul style="list-style-type: none"> Identify monitors most frequently used Identify difficulties in vitals monitoring | <p>2 Surgical observation</p> <ul style="list-style-type: none"> Historical trends not easily available Statistics require manual calculation by the user Current screen difficult to customize | <p>3 Brainstorm redesign</p> <ul style="list-style-type: none"> Provide access a patient's entire vital sign history Interactivity to allow user to specify and follow long-term trends, and compute statistics from raw data | <p>4 Implement redesign with D3</p> <ul style="list-style-type: none"> Use synthetic health data Focus + content brushing Draggable elements Customizable display | <p>5 Product testing (Future Work)</p> <ul style="list-style-type: none"> Comparison of previous monitor to our design using students. Maybe expand to anesthesiologists following further redesign. |
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