Based on the provided predicates for the safety case pattern of the Generic Patient-Controlled Analgesia (GPCA) system, here is the instantiated safety case in a hierarchical tree format:

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GPCA Safety Case:

- G1: Operational safety is verified in GPCA system

- S1: Argument over the satisfaction of all specs over GPCA system (undeveloped)

- G2: All operational hazards are mitigated

- S3: Argument over operational hazards

- G3: Overinfusion is mitigated

- G3: Underinfusion is mitigated

- S4: Argument over the applied scenarios of Overinfusion

- G4: Overinfusion is mitigated under excessive bolus request scenario

- S5: Argument over all specs related to excessive bolus request scenario

- G5: Low dose limit spec is appropriate for excessive bolus request

- S6: Argument the appropriateness of low dose limit spec over properties

- G6: Flow rate sensor property is appropriate for low dose limit spec

- S7: Argument over the source of the flow rate sensor property definition

- G7: FDA standard is appropriate and trustworthy

- G8: Flow rate sensor definition is sufficient

- Sn1: Source: FDA standard

- Sn2: Property: Flow rate sensor is equipped

- C3: All related scenarios are given by Overinfusion

- C3: All related scenarios are given by Underinfusion

- G3: Underinfusion is mitigated under low programmed rate scenario

- S4: Argument over the applied scenarios of Underinfusion

- G4: Underinfusion is mitigated under low programmed rate scenario

- S5: Argument over all specs related to low programmed rate scenario

- G5: Dose limit exceeded spec is appropriate for low programmed rate

- S6: Argument the appropriateness of dose limit exceeded spec over properties

- G6: Bolus volume property is appropriate for dose limit exceeded spec

- S7: Argument over the source of the bolus volume property definition

- G7: Expert opinion is appropriate and trustworthy

- G8: Bolus volume definition is sufficient

- Sn1: Source: Expert opinion

- Sn2: Property: Bolus volume/concentration too high

- C1: All specs are given by operational safety specs of GPCA

- S2: Argument over reliability in all suitable levels of GPCA system (undeveloped)

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This safety case hierarchically explains how the goals, strategies, and solutions are identified and supported for operational hazards in a GPCA system. The structure also demonstrates how each component is related and argues for the effectiveness and trustworthiness of each safety measure. This instantiation includes specific scenarios for operational hazards and relates them to the specified GPCA assumptions, all influenced by external standards and expert opinions.