**Feature Title: Smart Summarization**

**Goal:**

Enable caregivers to generate automated, easy-to-understand summary reports based on logged health vitals and observation/activity notes across selected timeframes (day, week, month, or custom range). This supports proactive care and efficient handoffs between caregivers.

**User Story**

As a caregiver supporting someone with complex care needs, I want to generate a summary of care recipient data over a selected period, so that I can quickly understand trends, anomalies, and patterns to make better care decisions or share insights with other stakeholders.

**Functional Requirements**

**1. Input Selection**

* **FR1.1** The system shall allow the caregiver to select a summary timeframe:
  + Predefined ranges: Today, Past 7 Days, Past 30 Days
  + Custom range: Start Date – End Date (calendar selector)
* **FR1.2** The system shall allow the caregiver to select data types to include:
  + All observations - Note: Higher weight given to observations flagged as “Important”
  + Activities
  + Health vitals (e.g., sleep, heart rate, O₂, respiratory rate)

**2. Data Aggregation**

* **FR2.1** The system shall retrieve all relevant logged entries (structured and unstructured) from the selected period and categories.
* **FR2.2** The system shall structure input data into a standardized format for summarization (e.g., JSON or tabular).

**3. Summarization Process**

* **FR3.1** The system shall provide two summarization modes:
  + **LLM-based** summarization (using GPT, Claude, etc.)
  + **Template-based** summarization (UI-driven, with logic rules for text generation)
* **FR3.2** The summarizer shall extract:
  + Key trends (e.g., “Sleep duration improved over the week”)
  + Notable events (e.g., “Seizure episode occurred after new medication added”)
  + Suggestions/alerts if applicable (e.g., “Possible correlation between poor sleep and irregular breathing detected”)
* **FR3.3** The system shall support caregiver-friendly language output (6th–8th grade readability level).

**4. Report Generation & Output**

* **FR4.1** The system shall generate a summary report containing:
  + Title and time range
  + Key observations (bulleted or paragraph form)
  + Trend charts (optional, based on data)
  + Notable events or flaggable insights
  + A final section labeled “Next Steps / Suggested Considerations”
* **FR4.2** The system shall provide options to:
  + View the report on screen
  + Download as PDF
  + Share via email with other authorized users
* **FR4.3** The system shall save a copy of the report for future reference and history tracking.

**5. UI/UX Considerations**

* **FR5.1** The UI shall include:
  + A date picker
  + Checkbox/toggle filters for data inclusion
  + “Generate Summary” button
  + Loading animation while generating the summary
  + “Download” and “Share” options on the output screen
* **FR5.2** Caregivers shall be able to give feedback on the usefulness of each summary (thumbs up/down, with optional comments).

**Non-Functional Requirements**

* **NFR1:** Summaries shall generate in less than 30 seconds for <30-day periods.
* **NFR2:** LLM-based summaries must be de-identified before being processed if sent externally.
* **NFR3:** Output language should be empathetic, concise, and avoid clinical jargon unless configured otherwise.

**Stretch Goals**

* Smart auto-highlighting (color-coded sentiment or urgency tagging)
* Auto-suggested tags for new entries
* Multilingual summaries