**UI/UX Design Specification Document for Neuro-Assistant**

**1. Overview**

This document provides a comprehensive blueprint for developing a neuro-assistant application designed for physicians. The application streamlines the process of assessing stroke cases by guiding doctors through data entry, image uploads, and protocol-based analysis. The UI must be intuitive, efficient, and compliant with medical data security standards. It should serve both desktop and mobile users with responsive and adaptive layouts.

**2. Application Architecture & User Flow**

**2.1. Main Navigation & Dashboard**

* **Navigation Bar:**
  + **Tabs/Menu Items:** Home, New Case, History, Guidelines, Settings.
  + **Quick Access:** A prominently placed “Activate Code Stroke” button for emergencies.
* **Dashboard Overview:**
  + Summary of recent cases, notifications, and quick access to urgent functions.

**2.2. New Case Workflow**

The data entry process is broken into a guided, step-by-step procedure:

**Step 1: Patient Details & Symptoms**

* **Input Fields:**
  + **Patient Identifier:** Text input for patient ID or name.
  + **Time of Last Normal:** A date/time picker with a visual timeline (e.g., slider or clock widget).
  + **Symptom Description:**
    - Free-text textbox for symptoms (e.g., “arm weakness,” “facial droop,” “speech changes”).
    - Optional structured checkboxes to select common stroke symptoms.
* **Contextual Help:** Tooltips or info icons that explain each field (e.g., “Specify the exact time the patient was last normal”).

**Step 2: Upload & Annotate Images**

* **Image Upload Options:**
  + Drag-and-drop interface and “Take Photo” functionality (for mobile).
  + Support for multiple file types (CT, MRI, etc.).
  + Display of thumbnail previews.
* **Annotation Tools:**
  + Ability to zoom in on images.
  + Tools for drawing markers/annotations directly on the image.

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**Step 3: Additional Data (Labs/Vitals)**

* **Data Entry Forms:**
  + Quick-entry forms for lab values (CBC, glucose, etc.) and vital signs (BP, HR, O₂ saturation).
  + Clear field labels and input validation.

**Final Submission**

* A fixed “Submit for Analysis” button is available at the bottom of the screen throughout the process, ensuring that the call-to-action is always visible.

**3. Output Section (Results/Report)**

**3.1. Report Display**

* **Report Overview:**
  + A summary at the top highlights key findings (e.g., “Large Vessel Occlusion Detected” or “Thrombolysis Candidate”).
  + Critical values (time thresholds, BP targets) are clearly highlighted using color-coded alerts.
* **Detailed Report:**
  + A scrollable text area with clearly segmented sections:
    - Imaging findings
    - Lab results
    - Treatment recommendations (with protocol references)
  + Use of headings, bullet points, and inline color coding (red for alerts, green for normal values).

**3.2. Image Overlay (Desktop Specific)**

* **Side-by-Side View:**
  + Display the uploaded scan next to the report.
  + Enable visual annotations where markers on the image are directly linked to text descriptions in the report.

**3.3. Interactive Follow-Up**

* **Features:**
  + Option to ask follow-up questions or flag items for review.
  + Buttons for saving or exporting the report (PDF download, text copy).
* **Progress & Feedback:**
  + A visible progress spinner/message (“Analyzing…”) during processing.
  + Notifications (or mobile push notifications) if analysis takes longer than expected.

**4. History & Case Management**

**4.1. Case History List**

* **Display Format:**
  + Timeline or list view showing previous cases.
  + Each case includes:
    - Date/Time stamp
    - Brief summary of key findings
    - Status indicators (Completed, In-Progress, Archived)

**4.2. Search & Filter**

* **Functionality:**
  + Quick search bar to filter cases by patient ID, date, or keywords (e.g., “thrombolysis”).

**4.3. Case Details View**

* **Upon Selecting a Case:**
  + Opens a detailed view similar to the output report section.
  + Options available to re-run the analysis, share the report, or add follow-up notes.
* **Organizational Tools:**
  + Ability to tag or mark critical cases for easy retrieval.
  + Option to export history for integration into broader patient records.

**5. Responsive & Consistent Design**

**5.1. Cross-Platform Adaptability**

* **Mobile Layout:**
  + Single-column, step-by-step wizard interface.
  + Large, easy-to-tap buttons with a simplified layout.
* **Desktop Layout:**
  + Multi-column interface where forms and live previews/guidelines can appear side-by-side.
  + Resizable panels to let users prioritize information based on task needs.

**5.2. Aesthetic Guidelines**

* **General Look & Feel:**
  + Clean and minimalist design.
  + Use of legible fonts and ample white space.
  + Consistent color schemes that emphasize alerts without overwhelming the user (e.g., red for critical alerts, subdued tones for background elements).
* **Iconography & Visuals:**
  + Intuitive icons for common actions (upload, annotate, save, share).
  + Clear visual indicators for input errors and successful submissions.

**6. Additional Considerations**

**6.1. Security & Compliance**

* **Data Privacy:**
  + Ensure secure login processes and data encryption, in line with medical data security standards.
* **User Access:**
  + Role-based access controls and audit trails for actions taken within the application.

**6.2. Guidelines & Protocols Access**

* **Quick Reference:**
  + A dedicated section (within the Guidelines tab) to access clinical protocols (e.g., “Acute Stroke Protocol,” “ICH Protocol”).
* **Inline Linking:**
  + Throughout the data entry and output sections, include links or icons that allow quick access to detailed protocol information.

**7. Detailed UI Component Specifications**

**7.1. Navigation Bar**

* **Desktop:**
  + Horizontal bar at the top with clearly labeled tabs.
  + “Activate Code Stroke” should be a highlighted button (potentially in a contrasting color).
* **Mobile:**
  + Bottom or hamburger menu with clear icons.
  + Quick access emergency button placed prominently on the home screen.

**7.2. Input Forms & Controls**

* **Text Inputs:**
  + Standard text fields with placeholders and real-time validation.
* **Date/Time Picker:**
  + Intuitive, with a timeline slider or calendar integration.
* **Checkboxes & Radio Buttons:**
  + Clearly label options; group related checkboxes under “Stroke Symptoms.”
* **Tooltips/Info Icons:**
  + Hover or tap-to-display brief explanations for fields.

**7.3. Image Upload & Annotation**

* **Upload Mechanism:**
  + Support for drag-and-drop as well as button-triggered file selection.
* **Image Preview:**
  + Display thumbnails with zoom and annotation options.
* **Annotation Tools:**
  + Simple drawing tools to mark areas of interest on scans.

**7.4. Report Generation & Interactivity**

* **Report Layout:**
  + A header for key findings followed by detailed sections.
  + Scrollable text areas and side-by-side image overlays (desktop only).
* **Interactivity:**
  + Buttons for follow-up actions, such as “Ask a Question” or “Export Report.”

**7.5. History & Case Management Interface**

* **List/Timeline Views:**
  + Clearly display each case with summary information.
* **Search & Filter Options:**
  + A persistent search bar with filters for date, patient ID, and keywords.
* **Case Detail Navigation:**
  + Clicking a case should seamlessly transition to a detailed view that mimics the output section.

**8. Wireframes & Prototyping**

**Note to Design Team:**

* Develop low-fidelity wireframes for both desktop and mobile views based on this specification.
* Iterate to high-fidelity prototypes with a focus on usability and clarity.
* Validate design decisions with stakeholder feedback, particularly from clinicians, to ensure the workflow aligns with real-world usage.

**9. Conclusion**

This document outlines a robust, clinician-centric interface for a neuro-assistant application that supports rapid stroke assessment and management. The design emphasizes clarity, ease-of-use, and accessibility on both desktop and mobile platforms, ensuring that critical information is always at hand during time-sensitive scenarios.

Please review the specifications carefully and proceed with creating wireframes, interactive prototypes, and style guides that align with the outlined requirements.