# **Provider Portal - Patient Registration**

## **Epic: Patient Onboarding**

**Epic Description**

The Patient Onboarding Epic enables healthcare providers to efficiently register new patients into the EHR system through multiple data entry methods, including manual entry, EHR import, and CSV file upload. This comprehensive patient registration process captures all necessary demographic, contact, insurance, and preference information required for healthcare delivery while maintaining HIPAA compliance.

**Business Value**

* **Operational Efficiency**: Streamlines patient registration process, reducing administrative overhead by 40%
* **Data Accuracy**: Multiple validation layers ensure high-quality patient data entry
* **Compliance**: Maintains HIPAA compliance throughout the patient onboarding process
* **Flexibility**: Supports multiple data entry methods to accommodate various workflow preferences
* **Cost Reduction**: Reduces manual data entry errors and associated correction costs

**Value to Provider User**

* **Time Savings**: Batch patient import capabilities reduce individual registration time
* **Error Prevention**: Built-in validation prevents incomplete or incorrect patient records
* **Workflow Integration**: Seamless integration with existing EHR workflows
* **User Experience**: Intuitive multi-step form design reduces training requirements

**Stakeholders Using Feature**

* **Primary Users**: Front desk staff, Medical assistants, Practice administrators
* **Secondary Users**: Healthcare providers, Billing staff, IT administrators
* **Beneficiaries**: Patients (improved registration experience), Healthcare organizations (operational efficiency)

### User Story 1: Manual Patient Entry

**Summary**: As a front desk staff member, I should be able to manually enter new patient details through a comprehensive multi-step form so that I can register patients who walk in or call for appointments.

**Description**: Front desk staff need the ability to manually register new patients by entering their complete demographic, contact, insurance, and preference information through an intuitive 6-step form interface (Provider Information, Patient Details, Contact Information, Emergency Contact, Insurance, Preferences). This process should capture all necessary patient information required for healthcare delivery while providing real-time validation and error handling.

**Core Entities and Attributes:**

**Patient Entity**:

* Patient ID (Auto-generated)
* First Name (Required)
* Middle Name (Optional)
* Last Name (Required)
* Date of Birth (Required)
* Gender (Required)
* Marital Status (Optional)
* Timezone (Optional)
* Language (Optional)
* SSN (Optional)
* Race (Optional)
* Ethnicity (Optional)
* Registration Date (Optional)
* Profile Picture (Optional)

**Contact Information Entity**:

* Mobile Number (Required)
* Home Number (Optional)
* Email (Required)
* Fax Number (Optional)
* Address Line 1 (Required)
* Address Line 2 (Optional)
* City (Required)
* State (Required)
* Country (Required)
* Zipcode (Required)

**Emergency Contact Entity**:

* Relationship with Patient (Required)
* Last Name (Required)
* First Name (Required)
* Mobile Number (Required)
* Email (Optional)

**Guardian Information Entity**:

* Relationship with Patient (Required)
* Last Name (Required)
* First Name (Required)
* Mobile Number (Required)
* Email (Optional)
* Keep same information as emergency contact (Checkbox)

**Insurance Information Entity**:

* Insurance Type (Required)
* Insurance Name (Required)
* Member ID (Required)
* Plan Name (Required)
* Plan Type (Optional)
* Group ID (Optional)
* Group Name (Optional)
* Effective Start Date & End Date (Optional)
* Patient Relationship to Insured (Self/Spouse/Child/Other)
* Insured Person Details (First Name, Last Name, Date of Birth, Gender, Address)
* Insurance Card Upload (Front and Back)

**Provider Information Entity**:

* Primary Provider (Optional)
* Provider Group Location (Optional)

**Preferences Entity**:

* Pharmacy (Optional)
* Lab Name (Optional)
* Radiology (Optional)
* Communication Method (Optional)

**Proof of ID Entity**:

* Proof of ID Type (Optional)
* ID Number (Optional)
* ID Document Upload (Front and Back)

**Acceptance Criteria:**

1. **Multi-Step Form Navigation**
   * Form should be divided into 6 logical steps with clear navigation
   * Progress indicator showing current step with checkmarks for completed steps
   * Users can only proceed to next step after completing required fields
   * Form data should be preserved when navigating between steps
   * Auto-save functionality should preserve data during session
2. **Step 1: Provider Information**
   * Provider Group Location dropdown populated with available locations
   * Primary Provider dropdown filtered by selected location
   * Registration Date with calendar picker (defaults to current date)
   * Default Communication Channel dropdown (Email, SMS, Phone, Portal)
3. **Step 2: Patient Details**
   * Profile Picture upload with drag-and-drop functionality
   * Complete patient demographic information capture
   * Proof of ID section with document upload capabilities
   * All required fields properly validated
4. **Step 3: Contact Information**
   * Complete contact details with validation
   * Emergency Contact information capture
   * Guardian Information with checkbox for same as emergency contact
   * Address validation and auto-population features
5. **Step 4: Emergency Contact**
   * Mandatory relationship and contact details
   * Optional email field
   * "Add Emergency Contact" for multiple contacts
   * Guardian information toggle functionality
6. **Step 5: Insurance**
   * Active/Inactive status selection
   * Complete insurance details capture
   * Subscriber and Employer information sections
   * Insurance card upload (front and back)
   * "Add Another Insurance" for secondary coverage
7. **Step 6: Preferences**
   * Provider preference selection
   * Pharmacy, Lab, and Radiology preferences
   * Communication method selection
   * Consent management for Email, Call, Message

**UI Requirements:**

**Step 1: Provider Information**

**Provider Group Location Field**:

* **UI Type**: Dropdown/Select
* **Placeholder**: "Select Provider Group Location"
* **Required**: Yes (marked with red asterisk)
* **Validation**: Selection from available options only
* **Error Message**: "Please select a Provider Group Location"

**Primary Provider Field**:

* **UI Type**: Dropdown/Select
* **Placeholder**: "Select Primary Provider"
* **Required**: Yes
* **Dependency**: Filtered by selected Provider Group Location
* **Validation**: Selection from filtered provider list
* **Error Message**: "Please select a Primary Provider"

**Registration Date Field**:

* **UI Type**: Date picker with calendar icon
* **Placeholder**: "Choose Date"
* **Required**: No
* **Default Value**: Current date
* **Format**: MM-DD-YYYY
* **Validation**: Date cannot be in the future
* **Error Message**: "Registration date cannot be in the future"

**Default Communication Channel Field**:

* **UI Type**: Dropdown/Select
* **Options**: Email, SMS, Phone, Portal
* **Placeholder**: "Select"
* **Required**: No
* **Validation**: Selection from predefined options
* **Error Message**: "Please select a valid communication channel"

**Step 2: Patient Details**

**Profile Picture Upload**:

* **UI Type**: Drag and drop upload area with browse button
* **Supported Formats**: jpg, jpeg, png, svg
* **File Size Limit**: 5MB
* **Display**: Dashed border upload area with upload icon
* **Preview**: Thumbnail preview after upload
* **Required**: No
* **Validation**: File format and size validation
* **Error Messages**:
  + "File size exceeds 5MB limit"
  + "Please upload a valid image file (jpg, jpeg, png, svg)"

**First Name Field**:

* **UI Type**: Text input
* **Placeholder**: "Enter Name"
* **Required**: Yes (marked with red asterisk)
* **Character Limit**: 50 characters
* **Validation**: Alphabetic characters, spaces, hyphens, apostrophes only
* **Error Messages**:
  + "First Name is required"
  + "First Name can only contain letters, spaces, hyphens, and apostrophes"
  + "First Name cannot exceed 50 characters"

**Middle Name Field**:

* **UI Type**: Text input
* **Placeholder**: "Enter Name"
* **Required**: No
* **Character Limit**: 50 characters
* **Validation**: Alphabetic characters, spaces, hyphens, apostrophes only
* **Error Messages**:
  + "Middle Name can only contain letters, spaces, hyphens, and apostrophes"
  + "Middle Name cannot exceed 50 characters"

**Last Name Field**:

* **UI Type**: Text input
* **Placeholder**: "Enter Name"
* **Required**: Yes (marked with red asterisk)
* **Character Limit**: 50 characters
* **Validation**: Alphabetic characters, spaces, hyphens, and apostrophes only
* **Error Messages**:
  + "Last Name is required."
  + "Last Name can only contain letters, spaces, hyphens, and apostrophes."
  + "Last Name cannot exceed 50 characters"

**Date of Birth Field**:

* **UI Type**: Date picker with calendar icon
* **Placeholder**: "Choose Date"
* **Required**: Yes (marked with red asterisk)
* **Format**: MM-DD-YYYY
* **Validation**: Past date only, realistic age range (0-150 years)
* **Auto-calculation**: Age display based on DOB
* **Error Messages**:
  + "Date of Birth is required."
  + "Date of Birth cannot be in the futur.e"
  + "Please enter a valid date of birth"

**Gender Field**:

* **UI Type**: Dropdown/Select
* **Options**: Male, Female, Other, Prefer not to say
* **Placeholder**: "Select"
* **Required**: Yes (marked with red asterisk)
* **Validation**: Selection from predefined options
* **Error Message**: "Please select a gender."

**Time Zone Field**:

* **UI Type**: Dropdown/Select with search
* **Options**: Standard time zones (UTC-12 to UTC+12)
* **Placeholder**: "Central Standard Time (UTC-6)"
* **Required**: No
* **Default**: System/browser timezone
* **Validation**: Selection from predefined time zones
* **Error Message**: "Please select a valid time zone."

**Language Field**:

* **UI Type**: Dropdown/Select with search
* **Options**: English, Spanish, French, etc.
* **Placeholder**: "Select"
* **Required**: No
* **Validation**: Selection from supported languages
* **Error Message**: "Please select a valid language."

**SSN Field**:

* **UI Type**: Text input with masking
* **Placeholder**: "Enter SSN"
* **Format**: XXX-XX-XXXX
* **Input Mask**: Automatic formatting while typing
* **Required**: No
* **Validation**: 9-digit numeric validation
* **Error Messages**:
  + "SSN must be in format XXX-XX-XXXX"
  + "SSN must contain exactly 9 digits."
  + "Please enter a valid SSN"

**Race Field**:

* **UI Type**: Dropdown/Select
* **Options**: Standard race categories per government guidelines
* **Placeholder**: "Select Race"
* **Required**: No
* **Validation**: Selection from predefined options
* **Error Message**: "Please select a valid race category."

**Ethnicity Field**:

* **UI Type**: Dropdown/Select
* **Options**: Hispanic/Latino, Not Hispanic/Latino, Prefer not to say
* **Placeholder**: "Select Ethnicity"
* **Required**: No
* **Validation**: Selection from predefined options
* **Error Message**: "Please select a valid ethnicity"

**Marital Status Field**:

* **UI Type**: Dropdown/Select
* **Options**: Single, Married, Divorced, Widowed, Separated, Other
* **Placeholder**: "Select"
* **Required**: No
* **Validation**: Selection from predefined options
* **Error Message**: "Please select a valid marital status"

**MRN Field**:

* **UI Type**: Text input (auto-generated or manual)
* **Placeholder**: "Enter MRN"
* **Required**: No
* **Format**: Alphanumeric
* **Validation**: Unique MRN check
* **Error Messages**:
  + "MRN already exists"
  + "MRN can only contain letters and numbers"

**Step 3: Contact Information**

**Mobile Number Field**:

* **UI Type**: Text input with phone format
* **Placeholder**: "Enter Number"
* **Required**: Yes (marked with red asterisk)
* **Format**: (XXX) XXX-XXXX
* **Input Mask**: Automatic formatting
* **Validation**: 10-digit US phone number
* **Error Messages**:
  + "Mobile Number is required"
  + "Please enter a valid 10-digit phone number"
  + "Phone number must be in format (XXX) XXX-XXXX"

**Home Number Field**:

* **UI Type**: Text input with phone format
* **Placeholder**: "Enter Number"
* **Required**: No
* **Format**: (XXX) XXX-XXXX
* **Input Mask**: Automatic formatting
* **Validation**: 10-digit US phone number if provided
* **Error Message**: "Please enter a valid 10-digit phone number"

**Email Field**:

* **UI Type**: Email input
* **Placeholder**: "Enter Email"
* **Required**: Yes (marked with red asterisk)
* **Character Limit**: 100 characters
* **Validation**: Valid email format
* **Error Messages**:
  + "Email is required"
  + "Please enter a valid email address"
  + "Email cannot exceed 100 characters"

**Fax Number Field**:

* **UI Type**: Text input with phone format
* **Placeholder**: "Enter Fax Number"
* **Required**: No
* **Format**: (XXX) XXX-XXXX
* **Input Mask**: Automatic formatting
* **Validation**: 10-digit US phone number if provided
* **Error Message**: "Please enter a valid 10-digit fax number"

**Patient doesn't have a mobile phone. Checkbox**:

* **UI Type**: Checkbox
* **Label**: "Patient doesn't have a mobile phone"
* **Functionality**: Makes the mobile number field optional when checked
* **Validation**: Either the mobile number or the checkbox must be selected

**Patient doesn't have an email address. Checkbox**:

* **UI Type**: Checkbox
* **Label**: "Patient doesn't have an email address"
* **Functionality**: Makes email field optional when checked
* **Validation**: Either email or a checkbox must be selected

**Address Line 1 Field**:

* **UI Type**: Text input
* **Placeholder**: "Enter Address Line 1"
* **Required**: Yes (marked with red asterisk)
* **Character Limit**: 100 characters
* **Validation**: Address format validation
* **Error Messages**:
  + "Address Line 1 is required"
  + "Address cannot exceed 100 characters"

**Address Line 2 Field**:

* **UI Type**: Text input
* **Placeholder**: "Enter Address Line 2"
* **Required**: No
* **Character Limit**: 50 characters
* **Validation**: Address format validation
* **Error Message**: "Address Line 2 cannot exceed 50 characters"

**City Field**:

* **UI Type**: Text input
* **Placeholder**: "Enter City"
* **Required**: Yes (marked with red asterisk)
* **Character Limit**: 50 characters
* **Validation**: Alphabetic characters and spaces
* **Error Messages**:
  + "City is required"
  + "City can only contain letters and spaces"
  + "City cannot exceed 50 characters"

**State Field**:

* **UI Type**: Dropdown/Select with search
* **Options**: All US states and territories
* **Placeholder**: "Select State"
* **Required**: Yes (marked with red asterisk)
* **Validation**: Selection from state list
* **Error Message**: "Please select a state"

**Country Field**:

* **UI Type**: Dropdown/Select with search
* **Options**: All countries
* **Default**: United States
* **Placeholder**: "Select Country"
* **Required**: Yes (marked with red asterisk)
* **Validation**: Selection from country list
* **Error Message**: "Please select a country"

**Zip Code Field**:

* **UI Type**: Text input
* **Placeholder**: "Enter Zip Code"
* **Required**: Yes (marked with red asterisk)
* **Format**: XXXXX or XXXXX-XXXX
* **Validation**: 5 or 9 digit zip code format
* **Auto-population**: City and state based on zip code
* **Error Messages**:
  + "Zip Code is required"
  + "Please enter a valid zip code (XXXXX or XXXXX-XXXX)"

**Family Member/Emergency Contact Section**

**Relationship With Patient Field**:

* **UI Type**: Dropdown/Select
* **Options**: Parent, Spouse, Child, Sibling, Guardian, Friend, Other
* **Placeholder**: "Select relationship"
* **Required**: Yes (marked with red asterisk)
* **Validation**: Selection from predefined relationships
* **Error Message**: "Please select relationship to patient"

**Emergency Contact First Name Field**:

* **UI Type**: Text input
* **Placeholder**: "Enter First Name"
* **Required**: Yes (marked with red asterisk)
* **Character Limit**: 50 characters
* **Validation**: Alphabetic characters, spaces, hyphens, apostrophes only
* **Error Messages**:
  + "Emergency Contact First Name is required"
  + "Name can only contain letters, spaces, hyphens, and apostrophes"

**Emergency Contact Last Name Field**:

* **UI Type**: Text input
* **Placeholder**: "Enter Last Name"
* **Required**: Yes (marked with red asterisk)
* **Character Limit**: 50 characters
* **Validation**: Alphabetic characters, spaces, hyphens, apostrophes only
* **Error Messages**:
  + "Emergency Contact Last Name is required"
  + "Name can only contain letters, spaces, hyphens, and apostrophes"

**Emergency Contact Mobile Number Field**:

* **UI Type**: Text input with phone format
* **Placeholder**: "Enter Number"
* **Required**: Yes (marked with red asterisk)
* **Format**: (XXX) XXX-XXXX
* **Validation**: 10-digit US phone number
* **Error Messages**:
  + "Emergency Contact Mobile Number is required"
  + "Please enter a valid 10-digit phone number"

**Emergency Contact Email Field**:

* **UI Type**: Email input
* **Placeholder**: "Enter Email"
* **Required**: No
* **Validation**: Valid email format if provided
* **Error Message**: "Please enter a valid email address"

**Add Emergency Contact Button**:

* **UI Type**: Link button with plus icon
* **Functionality**: Adds additional emergency contact forms
* **Label**: "+ Add Emergency Contact"
* **Behavior**: Expands form to include additional contact sections

**Step 4: Emergency Contact (Detailed)**

**Guardian Information Toggle**:

* **UI Type**: Checkbox
* **Label**: "Keep same information as emergency contact"
* **Functionality**: Auto-populates guardian fields with emergency contact data
* **Behavior**: When checked, guardian fields become read-only with emergency contact data

**Step 5: Insurance**

**Insurance Details Active/Inactive Toggle**:

* **UI Type**: Toggle switch
* **Options**: Active (default), Inactive
* **Required**: Yes
* **Default**: Active
* **Validation**: Must select one option
* **Error Message**: "Please select insurance status"

**Payer Name Field**:

* **UI Type**: Dropdown/Select with search
* **Placeholder**: "Select payer"
* **Required**: Yes (marked with red asterisk)
* **Options**: Populated from insurance database
* **Validation**: Selection from available payers
* **Error Message**: "Please select a payer"

**Plan Name Field**:

* **UI Type**: Text input
* **Placeholder**: "Enter plan name"
* **Required**: Yes (marked with red asterisk)
* **Character Limit**: 200 characters
* **Validation**: Text validation
* **Error Messages**:
  + "Plan Name is required"
  + "Plan Name cannot exceed 200 characters"

**Plan Type Field**:

* **UI Type**: Text input
* **Placeholder**: "Plan Type"
* **Required**: No
* **Character Limit**: 100 characters
* **Validation**: Text validation
* **Error Message**: "Plan Type cannot exceed 100 characters"

**Coverage Type Field**:

* **UI Type**: Text input
* **Placeholder**: "Coverage Type"
* **Required**: No
* **Character Limit**: 100 characters
* **Validation**: Text validation
* **Error Message**: "Coverage Type cannot exceed 100 characters"

**Order of Benefits Field**:

* **UI Type**: Dropdown/Select
* **Options**: Primary, Secondary, Tertiary
* **Placeholder**: "Order of Benefits"
* **Required**: No
* **Validation**: Selection from predefined options
* **Error Message**: "Please select a valid order of benefits"

**Insurance ID Field**:

* **UI Type**: Text input
* **Placeholder**: "Enter Insurance ID"
* **Required**: Yes (marked with red asterisk)
* **Character Limit**: 50 characters
* **Validation**: Alphanumeric validation
* **Error Messages**:
  + "Insurance ID is required"
  + "Insurance ID cannot exceed 50 characters"

**Group ID Field**:

* **UI Type**: Text input
* **Placeholder**: "Enter Group ID"
* **Required**: No
* **Character Limit**: 50 characters
* **Validation**: Alphanumeric validation
* **Error Message**: "Group ID cannot exceed 50 characters"

**Effective Start Date Field**:

* **UI Type**: Date picker
* **Placeholder**: "MM-DD-YYYY"
* **Required**: No
* **Format**: MM-DD-YYYY
* **Validation**: Date validation, cannot be future date beyond reasonable coverage period
* **Error Message**: "Please enter a valid effective start date"

**Effective End Date Field**:

* **UI Type**: Date picker
* **Placeholder**: "MM-DD-YYYY"
* **Required**: No
* **Format**: MM-DD-YYYY
* **Validation**: Must be after start date if both provided
* **Error Message**: "End date must be after start date"

**Provider Field**:

* **UI Type**: Dropdown/Select
* **Placeholder**: "Select Provider"
* **Required**: No
* **Options**: Available providers
* **Validation**: Selection from provider list
* **Error Message**: "Please select a valid provider"

**Co-pay Details Section**

**Co-pay Amount Field**:

* **UI Type**: Currency input
* **Placeholder**: "Enter Co-pay Amount"
* **Required**: No
* **Format**: $XX.XX
* **Validation**: Numeric with 2 decimal places, positive values only
* **Error Messages**:
  + "Co-pay amount must be a positive number"
  + "Please enter amount in correct format ($XX.XX)"

**Co-insurance Percentage Field**:

* **UI Type**: Number input with % symbol
* **Placeholder**: "Co-insurance Percentage"
* **Required**: No
* **Format**: XX.XX%
* **Range**: 0-100
* **Validation**: Numeric between 0-100
* **Error Messages**:
  + "Co-insurance percentage must be between 0 and 100"
  + "Please enter a valid percentage"

**Deductible Amount Field**:

* **UI Type**: Currency input
* **Placeholder**: "Deductible Amount"
* **Required**: No
* **Format**: $XXXX.XX
* **Validation**: Numeric with 2 decimal places, positive values only
* **Error Messages**:
  + "Deductible amount must be a positive number"
  + "Please enter amount in correct format ($XXXX.XX)"

**Authorizations Field**:

* **UI Type**: Text input
* **Placeholder**: "Authorizations"
* **Required**: No
* **Character Limit**: 200 characters
* **Validation**: Text validation
* **Error Message**: "Authorizations cannot exceed 200 characters"

**Coverage Level Field**:

* **UI Type**: Text input
* **Placeholder**: "Enter coverage Level"
* **Required**: No
* **Character Limit**: 100 characters
* **Validation**: Text validation
* **Error Message**: "Coverage Level cannot exceed 100 characters"

**Subscriber Information Section (Expandable)**

**Relationship to Insured Field**:

* **UI Type**: Dropdown/Select
* **Options**: Self, Spouse, Child, Other
* **Placeholder**: "Select relationship"
* **Required**: Yes when section is expanded
* **Validation**: Selection from predefined options
* **Error Message**: "Please select relationship to insured"

**Subscriber First Name Field**:

* **UI Type**: Text input
* **Placeholder**: "First Name"
* **Required**: Yes when relationship is not "Self"
* **Character Limit**: 50 characters
* **Validation**: Alphabetic characters, spaces, hyphens, apostrophes only
* **Error Message**: "Please enter subscriber's first name"

**Subscriber Middle Name Field**:

* **UI Type**: Text input
* **Placeholder**: "Middle Name"
* **Required**: No
* **Character Limit**: 50 characters
* **Validation**: Alphabetic characters, spaces, hyphens, apostrophes only
* **Error Message**: "Middle name can only contain letters, spaces, hyphens, and apostrophes"

**Subscriber Last Name Field**:

* **UI Type**: Text input
* **Placeholder**: "Last Name"
* **Required**: Yes when relationship is not "Self"
* **Character Limit**: 50 characters
* **Validation**: Alphabetic characters, spaces, hyphens, apostrophes only
* **Error Message**: "Please enter subscriber's last name"

**Subscriber Gender Field**:

* **UI Type**: Dropdown/Select
* **Options**: Male, Female, Other
* **Placeholder**: "Gender"
* **Required**: No
* **Validation**: Selection from predefined options
* **Error Message**: "Please select a valid gender"

**Subscriber Social Security Number Field**:

* **UI Type**: Text input with masking
* **Placeholder**: "Social Security Number"
* **Required**: No
* **Format**: XXX-XX-XXXX
* **Validation**: 9-digit numeric validation
* **Error Message**: "Please enter a valid SSN in format XXX-XX-XXXX"

**Subscriber Mobile Number Field**:

* **UI Type**: Text input with phone format
* **Placeholder**: "Enter Number"
* **Required**: No
* **Format**: (XXX) XXX-XXXX
* **Validation**: 10-digit US phone number
* **Error Message**: "Please enter a valid 10-digit phone number"

**Subscriber Address Fields**:

* Same validation and UI requirements as patient address fields

**Employer Information Section (Expandable)**

**Employer Name Field**:

* **UI Type**: Text input
* **Placeholder**: "Employer Name"
* **Required**: No
* **Character Limit**: 200 characters
* **Validation**: Text validation
* **Error Message**: "Employer Name cannot exceed 200 characters"

**Employer Address Fields**:

* Same validation and UI requirements as standard address fields

**Upload Insurance Card Section**

**Front Side Upload**:

* **UI Type**: Drag and drop upload area
* **Placeholder**: "Click here to Upload Front Side. Drag and Drop Your File or Browse"
* **Supported Formats**: jpg, jpeg, png, svg
* **File Size Limit**: 5MB
* **Required**: No
* **Validation**: File format and size validation
* **Error Messages**:
  + "File size exceeds 5MB limit"
  + "Please upload a valid image file (jpg, jpeg, png, svg)"

**Back Side Upload**:

* **UI Type**: Drag and drop upload area
* **Placeholder**: "Click here to Upload Back Side. Drag and Drop Your File or Browse"
* **Supported Formats**: jpg, jpeg, png, svg
* **File Size Limit**: 5MB
* **Required**: No
* **Validation**: File format and size validation
* **Error Messages**:
  + "File size exceeds 5MB limit"
  + "Please upload a valid image file (jpg, jpeg, png, svg)"

**Add Another Insurance Button**:

* **UI Type**: Link button with plus icon
* **Label**: "+ Add Another Insurance"
* **Functionality**: Adds secondary insurance form
* **Behavior**: Expands to show additional insurance details form

**Step 6: Preferences**

**Preferences Field**:

* **UI Type**: Multi-select dropdown
* **Placeholder**: "Select preferences"
* **Options**: Pharmacy, Laboratory, Radiology, Other
* **Required**: No
* **Validation**: Selection from available options
* **Error Message**: "Please select valid preferences"

**Add New Preferences Button**:

* **UI Type**: Link button with plus icon
* **Label**: "+ Add New Preferences"
* **Functionality**: Adds custom preference fields
* **Behavior**: Opens additional preference input fields

**Consent Section**

**Consent to Email Checkbox**:

* **UI Type**: Checkbox
* **Label**: "Consent to Email"
* **Default**: Checked
* **Required**: No
* **Validation**: Boolean validation
* **Behavior**: Controls email communication permissions

**Consent to Call Checkbox**:

* **UI Type**: Checkbox
* **Label**: "Consent to Call"
* **Default**: Checked
* **Required**: No
* **Validation**: Boolean validation
* **Behavior**: Controls phone communication permissions

**Consent to Message Checkbox**:

* **UI Type**: Checkbox
* **Label**: "Consent to Message"
* **Default**: Checked
* **Required**: No
* **Validation**: Boolean validation
* **Behavior**: Controls SMS communication permissions

**Signer Name Field**:

* **UI Type**: Text input
* **Placeholder**: "Enter Name"
* **Required**: Yes if any consent is given
* **Character Limit**: 100 characters
* **Validation**: Alphabetic characters, spaces, hyphens, apostrophes only
* **Error Messages**:
  + "Signer name is required when consent is provided"
  + "Name can only contain letters, spaces, hyphens, and apostrophes"

**Consent Date Field**:

* **UI Type**: Date picker
* **Placeholder**: "Choose Date"
* **Required**: Yes if any consent is given
* **Default**: Current date
* **Format**: MM-DD-YYYY
* **Validation**: Cannot be future date
* **Error Messages**:
  + "Consent date is required"
  + "Consent date cannot be in the future"

**Upload File Button**:

* **UI Type**: File upload button
* **Label**: "Upload File"
* **Supported Formats**: PDF, jpg, jpeg, png
* **File Size Limit**: 10MB
* **Required**: No
* **Validation**: File format and size validation
* **Error Messages**:
  + "File size exceeds 10MB limit"
  + "Please upload a valid file (PDF, jpg, jpeg, png)"

**Remove Button**:

* **UI Type**: Text link
* **Label**: "Remove"
* **Functionality**: Removes uploaded consent file
* **Behavior**: Clears file upload field

**Add Another Consent Button**:

* **UI Type**: Link button with plus icon
* **Label**: "+ Add Another consent"
* **Functionality**: Adds additional consent forms
* **Behavior**: Expands to show additional consent sections

**Form Navigation and Control Buttons**

**Cancel Button**:

* **UI Type**: Secondary button
* **Label**: "Cancel"
* **Position**: Bottom left of each step
* **Functionality**: Exits form without saving
* **Confirmation**: "Are you sure you want to cancel? All unsaved changes will be lost."

**Save Button**:

* **UI Type**: Primary button
* **Label**: "Save"
* **Position**: Bottom right of final step
* **Functionality**: Saves all patient information
* **Validation**: Triggers complete form validation
* **Success Message**: "Patient created successfully"
* **Loading State**: Shows spinner and "Saving..." text

**Step Navigation**:

* **UI Type**: Step indicator with clickable steps
* **Behavior**: Shows current step, completed steps (checkmarks), and remaining steps
* **Validation**: Can only advance to next step if the current step validation passes
* **Error Indication**: Shows error state on steps with validation errors

**Global Form Validation Rules**

**Required Field Validation**:

* Visual indicator: Red asterisk (\*) next to field labels
* Real-time validation: Error message appears on field blur
* Form submission: Prevents form submission until all required fields completed
* Error styling: Red border on invalid fields

**Format Validation**:

* Triggers on field blur and form submission
* Specific format requirements for phone, email, SSN, dates
* Input masking for formatted fields (phone numbers, SSN, dates)
* Clear error messages with format examples

**Business Logic Validation**:

* Age calculation and validation based on DOB
* Address validation and auto-completion
* Insurance effective date range validation
* Duplicate patient prevention (name + DOB combination)

**File Upload Validation**:

* File type validation on selection
* File size validation before upload
* Upload progress indication
* Success/error feedback after upload

**Accessibility Requirements**

**Keyboard Navigation**:

* All form fields accessible via Tab key
* Logical tab order through form sections
* Enter key submits form from last field
* Escape key cancels current action

**Screen Reader Support**:

* Proper ARIA labels for all form elements
* Error messages associated with form fields
* Clear form section headings
* Required field indicators announced

**Visual Design**:

* High contrast colors for readability
* Clear visual hierarchy with proper spacing
* Error states clearly distinguishable
* Loading states for better user feedback

**HIPAA Compliance Requirements**

**Data Transmission**:

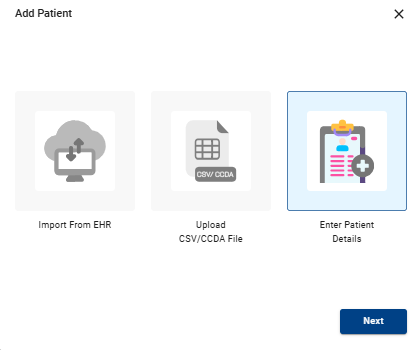
* All form data encrypted in transit (TLS 1.2+)
* Session timeout after 15 minutes of inactivity
* Secure form submission endpoints
* Error messages don't expose sensitive data

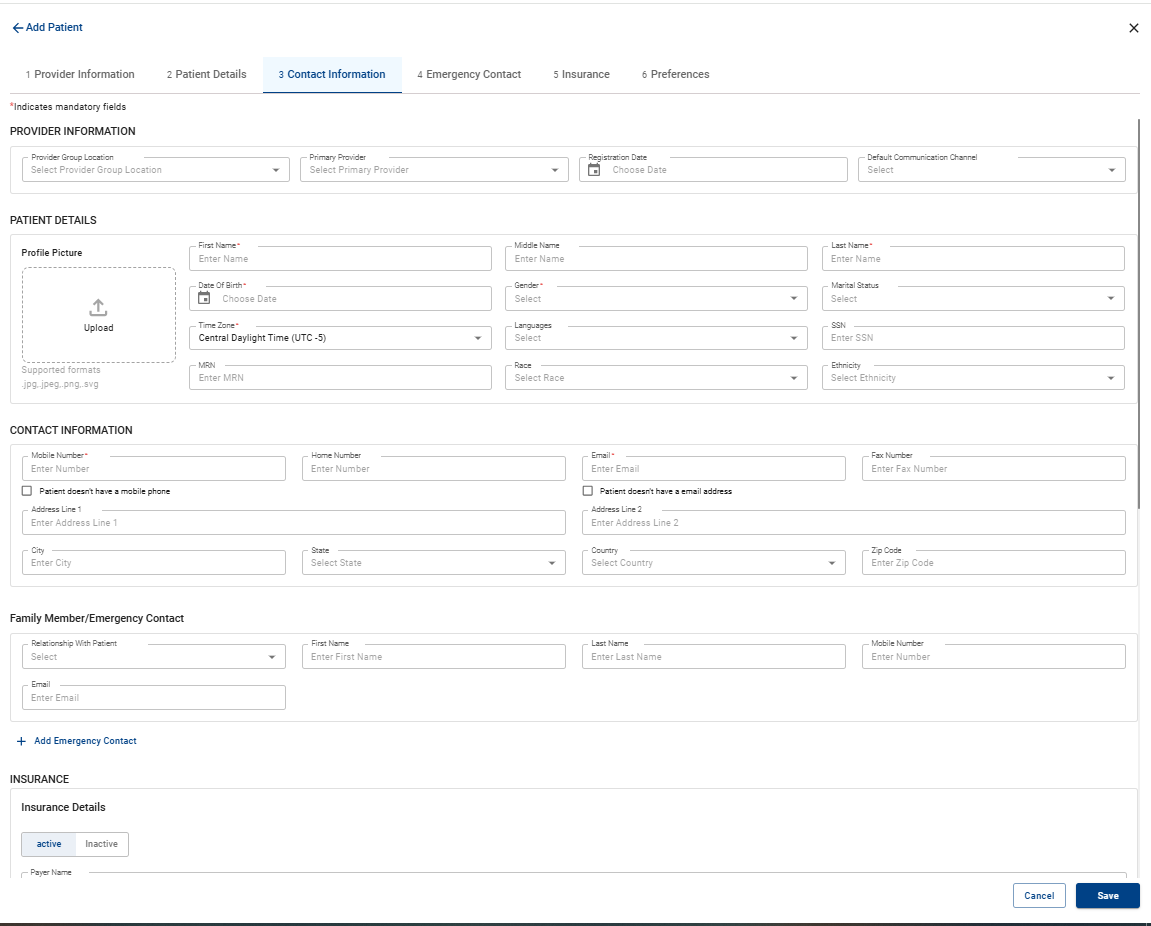
**Access Control**:

* Role-based access to patient creation functionality
* User authentication required for form access
* Audit logging of all form submissions
* Data access restricted to authorized personnel

**Data Storage**:

* Encrypted storage of all patient information
* Secure handling of uploaded files
* Proper data retention policies
* Regular security audits and compliance checks





### User story 2- Patient List Display

**Description**

The Patient List Display module provides healthcare providers and administrative staff with a comprehensive, searchable, and filterable view of all patients in the system. This module serves as the primary interface for patient management, allowing users to view patient demographics, appointment information, insurance status, and perform essential actions like editing and deleting patient records. The interface supports efficient patient lookup, bulk operations, and seamless navigation to detailed patient profiles.

**Sub-User Stories**

As a healthcare provider or administrative staff member, I want to view a comprehensive list of all patients with their key information displayed in an organized table format, so that I can quickly locate patients, review their status, and perform necessary management actions efficiently.

**Supporting User Stories**

**1-Patient Search** As a user, I want to search for patients by name so that I can quickly locate specific patients without scrolling through the entire list.

**2-Patient Filtering** As a user, I want to filter the patient list by various criteria (provider, status, appointment dates) so that I can focus on specific patient groups relevant to my current tasks.

**3- Export Patient Data** As an administrator, I want to export the patient list so that I can generate reports or perform data analysis outside the system.

**4- Patient Record Management** As an authorized user, I want to edit or delete patient records directly from the list view so that I can maintain accurate patient information efficiently.

5- **Insurance Status Verification** As a healthcare provider, I want to quickly see each patient's insurance validation status so that I can identify potential billing issues before appointments.

**Core Entities and Attributes in patient list**

**Patient Entity**

* **Patient ID** (String, Unique Identifier)
  + Format: Alphanumeric (e.g., "161B4585", "BD85CE50")
  + Primary key for patient identification
* **Patient Name** (String, Required)
  + Full name display with age and gender in parentheses
  + Format: "FirstName LastName (Age) - (Gender)"
  + Example: "Robert Fox (32 yrs Male)"
* **Date of Birth (DOB)** (Date, Required)
  + Format: MM-DD-YYYY
  + Used for age calculation and patient verification
* **Contact Information** (Object)
  + Phone Number (String): Primary contact number
  + Email Address (String): Primary email for communications
  + Format: "(XXX) XXX-XXXX" for phone
* **Provider Information** (Object)
  + Provider Name (String): Assigned primary care provider
  + Provider Specialty (String): Medical specialty area
  + Examples: "Dr. Corina Neurology", "Dr. Miller Dermatology"
* **Appointment Data** (Object)
  + Next Appointment (DateTime): Upcoming scheduled appointment
  + Last Appointment (DateTime): Most recent completed appointment
  + Format: "MM-DD-YYYY, HH:MM AM/PM"
* **Insurance Status** (Object)
  + Valid Insurance (Boolean): Insurance verification status
  + Displayed as checkmark (✓) or warning (⚠) icons
* **Patient Status** (Enum)
  + Values: "Active", "Inactive"
  + Color-coded: Green for Active, Red for Inactive
* **Profile Avatar** (Image/String)
  + Patient profile picture or generated avatar
  + Fallback to initials if no image available

**Acceptance Criteria**

**01: Patient List Display**

* **Given** a user accesses the Patients module
* **When** the page loads
* **Then** the system shall display a table with all patients showing:
  + Patient ID, Patient Name (with age/gender), DOB, Contact info, Provider, Next Appointment, Last Appointment, Insurance Status, Patient Status
* **And** each row shall include a profile avatar/image
* **And** the list shall be paginated with configurable rows per page (default: 10)

**02: Search Functionality**

* **Given** a user is viewing the patient list
* **When** they enter text in the "Search Patient" field
* **Then** the system shall filter results in real-time to show patients whose names contain the search term
* **And** the search shall be case-insensitive
* **And** if no results are found, display "No patients found matching your search"

**03: Filter Functionality**

* **Given** a user clicks the "Filter" button
* **When** the filter panel opens
* **Then** the system shall provide filter options for:
  + Provider (dropdown with all available providers)
  + Patient Status (Active/Inactive)
  + Insurance Status (Valid/Invalid)
  + Date Range (for appointments)
* **And** filters shall be applied in combination (AND logic)
* **And** active filters shall be indicated with a badge on the Filter button

**04: Export Functionality**

* **Given** a user clicks the "Export List" button
* **When** the export is initiated
* **Then** the system shall generate a downloadable file (CSV/PDF) containing:
  + All currently displayed patient data (respecting applied filters)
  + Standard filename format: "PatientList\_YYYY-MM-DD\_HHMMSS"
* **And** show export progress indicator during processing

**05: Pagination**

* **Given** there are more patients than the set page size
* **When** the user views the list
* **Then** the system shall display pagination controls showing:
  + Current page number and total pages ("1 of 100 Pages")
  + Previous/Next navigation buttons
  + Rows per page selector (10, 25, 50, 100 options)
* **And** pagination state shall be maintained when applying filters

**06: Patient Actions (Edit/Delete)**

* **Given** a user has appropriate permissions
* **When** they click on a patient row or action menu
* **Then** the system shall provide options to:
  + Edit patient information
  + Delete patient record (with confirmation)
* **And** actions shall be permission-based and logged for audit

**07: Insurance Status Indicators**

* **Given** a patient has insurance information
* **When** viewing the patient list
* **Then** the system shall display:
  + Green checkmark (✓) for validated insurance
  + Yellow warning triangle (⚠) for pending/expired insurance
  + Red X or empty for no insurance information

**08: Responsive Design**

* **Given** a user accesses the patient list on different devices
* **When** the screen size changes
* **Then** the table shall adapt to maintain usability:
  + Hide non-essential columns on smaller screens
  + Maintain search and primary action functionality
  + Ensure horizontal scrolling for full data access

**UI Requirements**

**Header Section**

* **Page Title**: "Patients" (left-aligned, prominent typography)
* **Search Bar**:
  + Placeholder text: "Search Patient"
  + Search icon on the right side
  + Real-time search with debouncing (300ms delay)
* **Action Buttons** (right-aligned):
  + **Export List Button**: Download icon + "Export List" text
  + **Filter Button**: Filter icon + "Filter" text + badge for active filters

**Table Structure**

* **Columns** (left to right):
  1. **Checkbox Column**: Bulk selection (30px width)
  2. **Patient ID**: Alphanumeric identifier (100px width)
  3. **Patient Name**: Avatar + Name with age/gender (250px width)
  4. **DOB**: Date format MM-DD-YYYY (120px width)
  5. **Contact**: Phone number and email (180px width)
  6. **Provider**: Doctor name and specialty (180px width)
  7. **Next Appointment**: Date and time (150px width)
  8. **Last Appointment**: Date and time (150px width)
  9. **Valid Insurance**: Icon indicator (80px width)
  10. **Status**: Color-coded badge (100px width)
  11. **Actions**: Edit/Delete buttons (80px width)

**Action Menu Design**

* **Edit Button**: Pencil icon, blue color, "Edit Patient" tooltip
* **Delete Button**: Trash icon, red color, "Delete Patient" tooltip
* **Actions** can be in dropdown menu (⋮) or inline buttons based on space

### User Story 3. Patient Edit

**Description:** User can update patient details from patient list by opting patient edit button .

**User Story:** As a healthcare provider, I want to edit patient demographic and contact information so that I can keep patient records up-to-date and accurate.

**Core Entities and Attributes:**

* **Provider Information:** Group Location, Primary Provider
* **Patient Details:** Name, DOB, Gender, etc.
* **Contact Information:** Mobile, Email, Address
* **Emergency Contact:** Name, Relationship, Phone
* **Insurance Details:** Insurance Provider, Policy Numbers, Coverage Details
* **Preferences:** Pharmacy, Lab, Radiology preferences
* **Consent Options:** Email consent, Call consent, Message consent

**Acceptance Criteria:**

* System shall present existing patient details with options to edit
* When provider updates fields such as demographics, contact information, or insurance, system shall save changes immediately
* System shall validate required fields before allowing save operation
* System shall display error prompts for incomplete mandatory fields
* Updated information shall be reflected immediately in the patient record
* All modifications shall be logged for audit purposes

**UI Requirements:**

* Edit option should be available in action menu with appropriate permissions
* Form should support inline editing or modal-based editing
* Required fields should be clearly marked with asterisks
* Auto-suggestions for Provider, Location, and Pharmacy fields
* Date picker for DOB and Insurance dates
* Dropdowns for predefined values (Gender, State, Country)
* Upload section for insurance cards
* Save and Cancel buttons with clear actions

### User story 4. Patient Delete

**Description:** While not explicitly documented as a standalone feature, delete functionality is referenced in various management modules throughout the system.

**User Story:** As a healthcare administrator, I want to delete patient records when necessary (following proper protocols) so that I can maintain data accuracy and comply with data retention policies.

**Core Entities and Attributes:**

* Patient ID
* Patient Name
* Deletion timestamp
* User who performed deletion
* Reason for deletion
* Archive/Soft delete status

**Acceptance Criteria:**

* Only authorized users should have access to delete patient records
* System shall prompt confirmation dialog before deletion: "Are you sure you want to delete this patient record?"
* System shall validate if patient has active appointments or pending billing before allowing deletion
* System should implement soft delete (archiving) rather than permanent deletion for audit trail
* System shall log all deletion activities with timestamp and user information
* Deleted/archived patients should not appear in regular patient lists but should be accessible for audit purposes

**UI Requirements:**

* Delete option should be available in action menu with appropriate permissions
* Confirmation modal with clear warning message
* Reason field for deletion (optional)
* Color-coded delete button (typically red) to indicate destructive action
* Success message after successful deletion
* Error handling for failed deletion attempts

### User Story 5-Patient Demographics Section in Patient Chart

**Description**

The Patient Demographics Section is a comprehensive interface within the patient chart that displays essential patient information organized in structured sections. It serves as the primary information hub for healthcare providers to access patient demographics, registration details, emergency contacts, preferences, consent information, and status data. The section provides both read-only viewing and editing capabilities with proper access controls and validation mechanisms.

**User Story**

As a healthcare provider, I want to view and manage comprehensive patient demographic information in an organized, tabbed interface within the patient chart, so that I can access all relevant patient details efficiently during clinical encounters, update information when necessary, and ensure accurate patient identification and contact information for care coordination.

**Core Entities and Attributes**

**Patient Header Information**

* **Patient Name** (String, Required): Full patient name
* **MRN (Medical Record Number)** (String, Unique): Patient identifier (e.g., "2367427533")
* **Profile Image** (Image/File): Patient photograph or avatar
* **Patient Flags** (Array): Status indicators
  + Flag Status (Boolean): General flag indicator
  + Diabetic Status (Boolean): Diabetes indicator
* **Primary Contact** (Object):
  + Phone Number (String): Format "(XXX) XXX-XXXX"
  + Email Address (String): Primary email contact
* **Language Preference** (String): Preferred communication language
* **Timezone** (String): Patient's timezone (e.g., "PST")

**Basic Information Section**

* **Contact Details** (Object):
  + Contact Number (String, Required): Primary phone
  + Email (String, Validated): Email address with validation
  + SSN (String, Encrypted): Social Security Number (masked display)
* **Personal Information** (Object):
  + Marital Status (Enum): Single, Married, Divorced, Widowed, etc.
  + Languages (Array): Spoken languages
  + Race (String): Racial identification
  + Ethnicity (String): Ethnic background
  + Gender (Enum): Male, Female, Other, Prefer not to say
* **Address Information** (Object):
  + Street Address (String): Complete street address
  + City (String): City name
  + State (String): State abbreviation
  + Zip Code (String): Postal code
  + Country (String): Country name

**Registration Information**

* **Primary Provider** (Object):
  + Provider Name (String): Assigned primary care provider
  + Provider Specialty (String): Medical specialty
* **Registration Details** (Object):
  + Registered Date (Date): Initial registration date
  + Patient Registration Address (String): Address at time of registration

**Emergency Contact Information**

* **Emergency Contacts** (Array of Objects):
  + Relationship With Patient (String): Brother, Sister, Spouse, etc.
  + Name (String, Required): Emergency contact full name
  + Mobile Number (String, Required): Contact phone number
  + Email Address (String): Contact email address

**Preferences Section**

* **Healthcare Preferences** (Object):
  + Pharmacy Details (Object):
    - Type (String): "Pharmacy"
    - Name (String): Pharmacy name
    - Address (String): Pharmacy complete address
    - Fax Number (String): Pharmacy fax
    - Contact Number (String): Pharmacy phone
  + Lab Preferences (Object): Laboratory service preferences
  + Radiology Preferences (Object): Imaging service preferences

**Consent Management**

* **Privacy Consent** (Object):
  + Privacy Consent Status (Boolean): General privacy agreement
* **Communication Consents** (Object):
  + Consent Form (Object):
    - Status (Boolean): Yes/No
    - Signed Date (Date): Date of signature
  + Consent To Text (Boolean): SMS communication consent
  + Consent To Voice Call (Boolean): Phone call consent
  + Consent To Video Call (Boolean): Video consultation consent
* **Other Consent Types** (Object):
  + Verbal Consent (Boolean): Verbal agreement status
  + Digital Consent (Boolean): Electronic consent status
  + Written Consent (Boolean): Physical document consent

**Patient Status Information**

* **Current Status** (Enum): Active, Inactive, Deceased, etc.
* **Portal Access** (Object):
  + Portal Status (String): Patient portal access status
  + Last Login (DateTime): Last portal access timestamp

**Acceptance Criteria**

**AC-01: Demographics Tab Display**

* **Given** a provider accesses a patient chart and clicks on the Demographics tab
* **When** the demographics section loads
* **Then** the system shall display all patient demographic information organized in clearly defined sections
* **And** the patient name, MRN, and profile image shall be prominently displayed in the header
* **And** all sections shall be properly formatted with consistent styling

**AC-02: Information Section Organization**

* **Given** the demographics section is displayed
* **When** a provider views the content
* **Then** the system shall organize information into the following sections:
  + Basic Information (left column)
  + Registration Information (right column)
  + Emergency Contact (full width table)
  + Preferences (full width table)
  + Consent (full width grid)
  + Patient Status (bottom section)
* **And** each section shall have clear headers and proper spacing

**AC-03: Tab Navigation**

* **Given** a provider is viewing patient demographics
* **When** they interact with the tab navigation
* **Then** the system shall provide seamless navigation between Demographics, Insurance, Eligibility, and Authorization tabs
* **And** the active tab shall be clearly highlighted
* **And** tab switching shall preserve any unsaved changes with appropriate warnings

**AC-04: Edit Functionality Access**

* **Given** a provider has appropriate permissions
* **When** they view the demographics section
* **Then** the system shall display an "Edit Demographics" button prominently
* **And** clicking the button shall open the edit interface
* **And** users without edit permissions shall not see the edit button

**AC-05: Data Validation and Display**

* **Given** patient demographic data is loaded
* **When** the system displays the information
* **Then** all required fields shall be properly validated and formatted
* **And** missing information shall display as "Not Provided" or appropriate placeholders
* **And** sensitive information (SSN) shall be masked appropriately
* **And** dates shall be formatted consistently (DD Month YYYY)

**AC-06: Contact Information Interaction**

* **Given** contact information is displayed
* **When** a provider clicks on phone numbers or email addresses
* **Then** the system shall provide appropriate action options (call, email)
* **And** clicking shall trigger the respective communication application
* **And** all contact information shall be properly formatted and validated

**AC-07: Emergency Contact Management**

* **Given** emergency contact information is displayed
* **When** a provider views the emergency contact section
* **Then** the system shall display all emergency contacts in a clear table format
* **And** multiple emergency contacts shall be properly organized
* **And** relationship types shall be clearly indicated

**AC-08: Consent Status Tracking**

* **Given** consent information is available
* **When** the consent section is displayed
* **Then** the system shall show all consent types with clear Yes/No indicators
* **And** signed dates shall be displayed for applicable consents
* **And** consent status shall be visually distinguishable (color coding, icons)

**UI Requirements**

**Header Design**

* **Patient Photo**: Circular avatar (80px x 80px) with fallback to initials
* **Patient Name**: Large, bold typography (24px)
* **MRN Display**: Smaller text (14px) with "MRN -" prefix
* **Demographics Line**: Age, gender in parentheses format
* **Contact Icons**: Phone and email with clickable functionality
* **Action Buttons**:
  + Invite Patient (secondary button)
  + Flag indicator (if applicable)
  + Diabetic badge (if applicable)
  + Create Visit Note dropdown (primary button)

**Tab Navigatio**n

* **Tab Design**: Horizontal tabs with underline indicator for active state
* **Tab Spacing**: Equal width distribution across available space
* **Active State**: Blue underline (#3B82F6) with bold text
* **Inactive State**: Gray text (#6B7280) with hover effects

**Information Sections Layout**

**Two-Column Layout (Basic + Registration)**

* **Left Column (50%)**: Basic Information
* **Right Column (50%)**: Registration Information
* **Field Layout**: Label-value pairs with consistent spacing
* **Typography**:
  + Labels: 14px, medium weight, gray (#374151)
  + Values: 14px, regular weight, dark gray (#111827)

**Full-Width Sections**

* **Emergency Contact**: Table format with headers and borders
* **Preferences**: Two-column table (Type/Name | Details)
* **Consent**: Grid layout with Yes/No indicators
* **Patient Status**: Highlighted section with status badge

**Error Handling**

**EH-01: Data Loading Errors**

**Scenario: Patient Data Load Failure**

* **Error Code**: PD-001
* **Trigger**: Backend API failure or network timeout
* **Error Message**: "Unable to load patient demographics. Please refresh the page or try again later."
* **UI Behavior**:
  + Display error message in place of demographics content
  + Show retry button with refresh icon
  + Maintain navigation structure
  + Log error details for troubleshooting

**Scenario: Partial Data Load**

* **Error Code**: PD-002
* **Trigger**: Some demographic sections fail to load
* **Error Message**: "Some patient information is currently unavailable. Partial data is displayed below."
* **UI Behavior**:
  + Show available data sections normally
  + Display placeholder text for missing sections
  + Show warning icon next to affected sections
  + Provide refresh option for failed sections

**EH-02: Data Validation Errors**

**Scenario: Invalid Contact Information**

* **Error Code**: PD-005
* **Trigger**: Stored contact data fails validation (malformed phone/email)
* **Error Message**: "Contact information appears to be invalid. Please verify and update."
* **UI Behavior**:
  + Highlight invalid fields with warning color
  + Show validation error icon next to problematic data
  + Disable click-to-call/email functionality for invalid contacts
  + Provide edit option to correct information

**Scenario: Missing Required Information**

* **Error Code**: PD-006
* **Trigger**: Critical patient information is missing
* **Error Message**: "Required patient information is missing. Please complete the patient profile."
* **UI Behavior**:
  + Highlight missing information sections
  + Show "Not Provided" with warning styling
  + Display completion prompts
  + Emphasize edit functionality