# History of Edit

| # | Description | Date Modified | Author |
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|  | First Draft - Patient Visit Details Screen Usecase | 01/25/2021 | Sweta Kumari |
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# Background - Patient Visit Details Screen

The CT General Hospital has gone paperless and started maintaining all the patient records and related data only in digital format. Patient Visit Details Screen enables a hospital management system to capture patient details when a patient visits the physician. This screen should have ability to save data offline. These details are captured during every visit.

* Patient Details - Should auto-populate all the fields from patient details screen.
  + The content should be read only by Nurse or a Physician
  + Physician or or nurse can edit if he finds things are not matching

Following additional information should be captured

* Visit Details
  + Vital Signs
    - Height
    - Weight
    - Blood Pressure (systolic / diastolic)
    - Body Temperature
    - Respiration Rate
* Diagnosis – Dr can enter multiple diagnosis
  + Diagnosis
  + Description
* Procedures– Dr can enter multiple Procedures
  + Procedures
  + Description
* Medication - Dr can enter multiple medications
  + Medication
  + Dosage
  + Description

# Table structure for master tables

The **medication table** has below mentioned attributes

1. DrugData (Refer Product.txt)
   1. Drug\_ID –(Snomed-ct)
   2. Drug\_Name
   3. Drug\_Generic\_Name
   4. Drug\_Brand\_Name
   5. Drug\_Form – (Oral, Injection, Tablet, Powder, Cream, Capsule, Solution, Ointment, Syrup etc.)
   6. Drug\_Strength – (5MG/ML, 20,000 UNITS/ML, 15MG, 12GM/50ML, 5ML/100ML etc.)

The **Diagnosis table** has below mentioned attributes

1. Diagnosis (Ref Revised Appendix A pbl020 IOCE v15.0 user MF ICD10\_Pilot)
   1. Diagnosis\_Code (A00, A00.1, B00)
   2. Diagnosis\_Description (Cholera, Cholera due to Vibrio cholerae 01, biovar cholerae, Typhoid etc)
   3. Diagnosis\_Is\_Depricated (Boolean)

The **Procedure table** has below mentioned attributes

1. Procedure (Refer icd10pcs\_codes\_2020)
   1. Procedure\_Code (001607A)
   2. Procedure\_Description (Bypass Cerebral Ventricle to Subgaleal Space with Autologous Tissue Substitute, Open Approach)
   3. Procedure\_Is\_Depricated (Boolean)

# Out of Scope

1. Patient Details Screen does not capture patient detailed vital signs, and is out of scope of this requirement. Vital signs are limited to Height, Weight, Blood Pressure (systolic / diastolic), Body Temperature, and Respiration Rate
2. Comprehensive Diagnosis, procedure, medication information is out of scope. Procedure details, procedure details, Medication, and dosage are limited to the information available in respective databases
3. Multiple device simultaneous access to Patient Details Screen is not available
4. Relational data linking between diagnosis, medications and procedures in out of scope

# Assumptions

1. Patient details data has been captured in Patient details screen
2. Physician/Nurse is the user of this screen.
3. User Registration is complete for all the users of this usecase
4. User has completed login via valid and verified credentials.
5. User Registration of the patient (whose record is being captured) is completed.
6. Diagnosis Database is accessible to the User
7. Procedure Database is accessible to the User
8. Medication Database is accessible to the User
9. Patient Visit Details screen should have ability to save data offline as well as online
10. Patient Visit Details screen facilitates capture of data after every patient’s visit
11. Patient Portal is downloadable by Patient
12. Hard Delete of patient data is not allowed

# Patient Visit Details Screen - Acceptance Criteria

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| # | Acceptance Criteria | Usecase Reference | Outstanding Items |
|  | Patient details are auto-populated - all the fields from patient details screen | 1.7.1 |  |
|  | All the content of Patient visit screen can only be read by Physician or nurse | 1.7.1 |  |
|  | Physician or nurse are able to edit the details in Patient visit screen | 1.7.1 |  |
|  | The corrected details in Patient Details section (if any) should be duplicated in Patient details screen as well. | 1.7.1 |  |
|  | Vital Sign sections has multiple field. All of the fields are not required | 1.7.1 |  |
|  | Height shall be captured in cm upto a limit of 250 cm. | 1.7.1 |  |
|  | Weight shall be captured in Kg. Value is acceptable upto two decimal points. | 1.7.1 |  |
|  | Blood Pressure (systolic / diastolic) shall be captured in mm Hg | 1.7.1 |  |
|  | Body Temperature shall be captured in Fahrenheit | 1.7.1 |  |
|  | Respiration Rate shall be captured in breaths per minute (BPM) | 1.7.1 |  |
|  | User is able to capture procedure details | 1.7.2 |  |
|  | User is able to capture diagnosis details | 1.7.3 |  |
|  | User is able to capture medication details | 1.7.4 |  |
|  | User id able to capture and visualize the Patient visit data in Patient Portal Screen | 1.7.1 |  |
|  | Patient is able to download and view patient visit data from its Patient Portal Screen | 1.7.1 |  |

# Functional Use Case

# Patient Details and Visit Details section for CT General Hospital

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| **Sr. No.** | **Description:** | Physician or Nurse shall be able to obtain patient details from data captured in Patient details screen that includes Patient demographic information, emergency details and patient’s allergy details.  Physician or Nurse shall be able to capture Patients details in Patient Visit Section that includes Height, Weight, Blood Pressure (systolic / diastolic), Body Temperature, and Respiration Rate |
| **A** | **Trigger:** | User click enter the patient visit details button |
| **B** | **Pre-Conditions/Inputs:** | 1. Patient information from Patient details screen  * Demographics   + First Name   + Last Name   + Date of Birth (DOB)   + Age – Auto Populate based on DOB   + Gender –   + Race   + Ethnicity   + Languages Known   + Email   + Home Address   + Contact Number   + Emergency Contact Info     - First Name     - Last Name     - Relationship     - Email Address     - Contact     - Address – allow to select same as above     - Do you need access to patient portal? * Allergy Details- Does Patient has an allergy or not  1. Patient Visit Details  * Vital Signs   + Height (in cm)   + Weight (in Kg)   + Blood Pressure (systolic / diastolic in mm Hg)   + Body Temperature (in Fahrenheit)   + Respiration Rate (in BPM) |
| **C** | **Post-Conditions/Outputs:** | 1. Patient details successfully message shall appear upon click of Save/submit button 2. The user shall be able to view Patient Details after click of save button |
| **D** | **Flow:** | 1. On clicking enter the patient visit details button, the User shall be directed to a Patient Visit Details Screen dashboard 2. All the content of Patient visit screen can only be read by Physician or nurse 3. The Patient Visit Details Screen dashboard has five major subsections    * Patient Details    * Visit Details – Vital Signs    * Diagnosis    * Procedure    * Medication 4. Patient data in following list of fields is auto-populated from data captured in Patient details screen.    * Title – Radio button    * First Name – Text Bar    * Last Name – Text Bar    * Date of Birth (DOB) - Date format DD/MM/YYYY    * Age – Auto Populate based on DOB    * Gender – Radio button    * Race – Text Bar    * Ethnicity – Text Bar    * Languages Known – Text Bar    * Email – Text Bar    * Home Address – Text Area    * Contact Number – Text Bar    * Emergency Contact Info    * First Name – Text Bar    * Last Name – Text Bar    * Relationship – Radio button    * Email Address – Text Bar    * Contact – Text Bar    * Checkbox -Address same as Patient    * Address – Text Area    * Do you need access to patient portal? – Radio button    * Allergy Details: Patient has any known allergies? – Radio button 5. Auto-populated Patient data may be updated by Physician or Nurse. Updated data would be reflected on Patient details screen data as well (No hard delete). To edit the Patient data, the user is able to perform the following actions.    1. Update Title from these option- Mr. /Ms. /Mrs. /Dr. through Radio button    2. Update First Name details– Text bar; where minimum of 2 alphabets are required    3. Update Last Name details input – Text Bar, where minimum of 2 alphabets are required    4. Update Date of birth (DOB)– the user shall be able to enter dates using the calendar icons in both the dates boxes as per DD/MM/YYYY format    5. Update Gender through radio button. Multiple option selection is disabled in Gender field.    6. User shall be able to update Race in the text field that accept maximum of 50 characters in the text box and minimum of two characters.    7. User shall be able to update Language in the text field that accept maximum of 50 characters in the text box and minimum of two characters.    8. User is able to update the email id in correct format, and response is accepted only when both username and host name are present, Else warning message is displayed    9. Home address may be updated in Text Area, which contains Address details, Landmark, PinCode. State and country.    10. User shall be able to update Contact number that consists of country code and phone number    11. User shall be able to update emergency contact information in the respective section        * Update Title from these option- Mr. /Ms. /Mrs. /Dr. through Radio button        * Update First Name details– Text bar; where minimum of 2 alphabets are required        * Update Last Name details– Text Bar, where minimum of 2 alphabets are required        * Update Emergency Contact section - Relationship is selected from a drop-down list with options Father, Mother, Sibling, Spouse, Friend, Other        * User is able to update the emergency contact email id in correct format, and response is accepted only when both username and host name are present, Else warning message is displayed        * User shall be able to update Contact number that consists of country code and phone number        * User shall be able to update the address in Text Area, which captures Address details, Landmark, PinCode, State and country        * Under Emergency Contact section, User is able to update the response for question “Do you need access to patient portal? “, through selecting Yes or No radio buttons.    12. User shall be able to access expanded Allergy section in case Question “Patient has any known allergies?” is responded with Yes. User shall be able to select (Yes or No) response via radio button. No is default selected answer, and only upon selection of Yes, the expanded tile of allergy details subsection appears    13. User shall be able to save the updated user details in database for Patient Details Screen, using Submit/save button. 6. In Patient Visit – Vital Signs section, following list of fields is displayed for data input (numeric) in following order.    * Vital Signs      + Height (in cm) – Text Bar      + Weight (in Kg) – Text Bar      + Blood Pressure (systolic / diastolic in mm Hg) – Text Bar      + Body Temperature (in Fahrenheit) – Text Bar      + Respiration Rate (in BPM) – Text Bar 7. On the landing Patient Visit – Vital Signs dashboard section, user shall be able to perform following actions    * 1. User shall be able to capture patient’s height - in cm (limit of 250 cm)      2. User shall be able to capture patient’s Weight - in Kg. Value is acceptable till two decimal points      3. User shall be able to capture patient’s Blood Pressure (systolic / diastolic) - in mm Hg      4. User shall be able to capture patient’s Body Temperature - in Fahrenheit      5. User shall be able to capture patient’s Respiration Rate - in breaths per minute (BPM) 8. User shall be able to update Patient’s Diagnosis details – Please refer to section 1.7.2 for more details of this usecase 9. User shall be able to update Patient’s Procedure details – Please refer to section 1.7.3 for more details of this usecase 10. User shall be able to update Patient’s Medication details – Please refer to section 1.7.4 for more details of this usecase 11. User shall be able to save the user details in database for Patient Visit Details Screen, using Submit/save button. 12. In an event of missing values, descriptive error message shall be displayed to the user, beside respective fields in red color. Also, an error message will be shown next to submit button, that will state that the form contains one or more missing values 13. On Press of save button, a successful completion message should be displayed on the landing page. 14. On the landing page, there will be a navigation links pane to the left, showing the following links in the below sequence:     * + - 1. Go back to Patient Visit Details Screen           2. Go to Patient Details Portal           3. Visit Patient History (Functionality shall be covered in different module)           4. Scheduling (Functionality shall be covered in different module)           5. Go to Homepage   User shall be able to visit the tabs in the navigation pane by clicking on any of them from the current screen. The selected tab on the navigation pane shall be highlighted in ‘green’ and the unselected tabs shall be displayed in ‘grey’   1. On the ‘Patient Details Portal” page the user (Physician/Nurse) can view the following columns with corresponding information for each Patient. 2. Patient information 3. Demographics    * + - 1. First Name          2. Last Name          3. Date of Birth (DOB)          4. Age – Auto Populate based on DOB          5. Gender          6. Race          7. Ethnicity          8. Languages Known          9. Email          10. Home Address          11. Contact Number          12. Emergency Contact Info   Name  Relationship  Email Address  Contact  Address  Access to patient portal status   1. Allergy Details 2. Visit Details – Vital Signs 3. Diagnosis 4. Procedure 5. Medication 6. The user can select a single Patient detail from the list and shall be directed to the details of the selected Patient. 7. Patient User shall be able to view and download its own details only, under “Patient Details Portal” page. |
| **E** | **Exceptions/Error Conditions:** | In an event of missing values, descriptive error message shall be displayed to the user, beside respective fields in red color.   1. If the Title – Radio button is not selected then the following error message shall be displayed to the user.   *“Kindly select the title.”*   1. If First Name field is not filled then the following error message shall be displayed to the user.   *“First name cannot be empty.”*   1. If First Name field character length is less than two then the following error message shall be displayed to the user.   *“Please don’t use abbreviations”*   1. If Last Name field is not filled then the following error message shall be displayed to the user.   *“Last name cannot be empty.”*   1. If Last Name field character length is less than two then the following error message shall be displayed to the user.   *“Please don’t use abbreviations”*   1. If date of birth has missing value then the following error message shall be displayed to the user.   *“Please enter a valid date”*   1. If date of birth has a date value from future time, then the following error message shall be displayed to the user.   *“Please enter a valid date of birth”*   1. If Gender radio button has missing value then the following error message shall be displayed to the user.   *“Gender is a required field”*   1. If Race field is not filled then the following error message shall be displayed to the user.   “Race field cannot be empty.”   1. If Race field response’s character length is less than two then the following error message shall be displayed to the user.   “Please don’t use abbreviations”   1. If Ethnicity field is not filled then the following error message shall be displayed to the user.   “Ethnicity field cannot be empty.”   1. If Ethnicity field response’s character length is less than two then the following error message shall be displayed to the user.   “Please don’t use abbreviations”   1. If Languages Known is not filled then the following error message shall be displayed to the user.   “Languages Known cannot be empty.”   1. If Languages Known field response’s character length is less than two then the following error message shall be displayed to the user.   “Please don’t use abbreviations”   1. If username of email-ID is missing then the following error message shall be displayed to the user. Email address example will appear in a lighter font color shade   *“Please enter your email address e.g. exampleusername@xyzdomain,com”*   1. If Address is not captured then the following error message shall be displayed to the user.   “Please provide the postal address.”   1. If Address field response’s character length is less than 10 then the following error message shall be displayed to the user.   “Please provide the postal address”   1. If Contact number Country/Area is not captured then the following error message shall be displayed to the user.   “Please provide the Country/Area code.”   1. If Contact number Country/Area code has other than four digits than then the following error message shall be displayed to the user.   “Please provide the correct country/area code.”   1. If Contact number telephone number is not captured then the following error message shall be displayed to the user.   “Please provide the telephone number.”   1. If Contact number telephone number does not have 7 digits, then the following warning message shall be displayed to the user.   “Please validate the phone number. Telephone number has XX number of digits”   1. If Height is not captured then the following error message shall be displayed to the user.   “Please provide Patient height in cms.”   1. If captured Height is beyond 250cm then the following error message shall be displayed to the user.   “Please check Patient height and provide the data in cms.”   1. If Body Temperature is not captured then the following error message shall be displayed to the user.   “Please provide Patient Body Temperature.”   1. If Weight is not captured then the following error message shall be displayed to the user.   “Please provide Patient’s Weight in Kgs.”   1. If Blood Pressure (systolic / diastolic) is not captured then the following error message shall be displayed to the user.   “Please provide Patient’s Blood Pressure (systolic / diastolic).”   1. If Respiration Rate is not captured then the following error message shall be displayed to the user.   “Please provide Patient’s Respiration Rate.”   1. In an event of one/more missing values, the following error message shall be displayed to the user   *“The form contains one or more missing values”* |
| **F** | **Assumptions:** | 1. CT General Hospital is located in NewYork, U.S. 2. User enter the patient’s vital sign data is the specified units |

# Patient Diagnosis Details Subsection

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| **Sr. No.** | **Description:** | This use case allows the User to access capture Patient’s diagnosis details |
| **A** | **Trigger:** | User click enter the patient visit details button |
| **B** | **Pre-Conditions/Inputs:** | 1. Diagnosis details data base contains following information  * Diagnosis\_Code * Diagnosis\_Description * Diagnosis\_Is\_Depricated (Boolean)  1. User is able to retrieve and analyze the diagnosis data from the master table |
| **C** | **Post-Conditions/Outputs:** | 1. Patient visit details successfully message shall appear upon click of Save/submit button 2. The user shall be able to view Patient diagnosis details after click of save button |
| **D** | **Flow:** | 1. Patient Diagnosis section is following field to capture Physician’s diagnosis for individual patient:    * Diagnosis Code –      + If Diagnosis Code is entered the auto-populate the Diagnosis Description      + If left blank, then auto-populate Diagnosis code after selection of Diagnosis description    * Diagnosis Description– Selected from dropdown list      + Allow User to search Diagnosis description through keywords of more than three characters      + Refine the drop-down list options based on the search keyword/keywords      + Upon selection of Diagnosis description, auto-populate the Diagnosis description    * Diagnosis\_Is\_Depricated      + Allow User to select Yes or No from Radio Button 2. User shall be able to capture Diagnosis Code (via Textbox/Dropdownlist). Based on selected Diagnosis Code, Diagnosis description field is auto-populated. This Field is a mandatory field. 3. User shall be able to capture Diagnosis description through a dropdown menu, in case Diagnosis code is not selected.    1. If any option except Other is selected, a subset of data (Diagnosis code) is displayed on Diagnosis Code.    2. If Other Option is selected by the user       1. A text box shall appear to capture the Diagnosis details (Required field).       2. “Diagnosis code - Not defined” is displayed on Diagnosis Code 4. User shall be able to capture response for Diagnosis\_Is\_Depricated through radio button (Yes/No). |
| **E** | **Exceptions/Error Conditions:** | In an event of missing values, descriptive error message shall be displayed to the user, beside respective fields in red color.   1. If Other Diagnosis Code field is not filled then the following error message shall be displayed to the user.   *“This field cannot be empty.”*   1. If the “Diagnosis\_Is\_Depricated?” section’s– Radio button is not selected then the following error message shall be displayed to the user.   “Kindly provide a response.” |
| **F** | **Assumptions:** | 1. The master data is accessible to the user 2. Diagnosis suggestion based on Patient data is out of scope 3. Relational data linking between diagnosis, medications and procedures in out of scope |

# Patient Procedure Details Subsection

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| --- | --- | --- |
| **Sr. No.** | **Description:** | This use case allows the User to access capture Patient’s Procedure details |
| **A** | **Trigger:** | User click enter the patient visit details button |
| **B** | **Pre-Conditions/Inputs:** | 1. Procedure details data base contains following information  * Procedure\_Code * Procedure\_Description * Procedure\_Is\_Depricated  1. User is able to retrieve and analyze the procedure data from the master table |
| **C** | **Post-Conditions/Outputs:** | 1. Patient visit details successfully message shall appear upon click of Save/submit button 2. The user shall be able to view Patient procedure details after click of save button |
| **D** | **Flow:** | 1. Patient Procedure section is following field to capture Physician’s selection of procedure for individual patient:    * Procedure Code –      + If Procedure Code is entered the auto-populate the Procedure Description      + If left blank, then auto-populate Procedure code after selection of Procedure description    * Procedure Description– Selected from dropdown list      + Allow User to search Procedure description through keywords of more than three characters      + Refine the drop-down list options based on the search keyword/keywords      + Upon selection of Procedure description, auto-populate the Procedure description    * Procedure\_Is\_Depricated      + Allow User to select Yes or No from Radio Button 2. User shall be able to capture Procedure Code (via Textbox/Dropdownlist). Based on selected Procedure Code, Procedure description field is auto-populated. This Field is a mandatory field. 3. User shall be able to capture Procedure description through a dropdown menu, in case Procedure code is not selected.    1. If any option except Other is selected, a subset of data (Procedure code) is displayed on Procedure Code.    2. If Other Option is selected by the user       1. A text box shall appear to capture the Procedure details (Required field).       2. “Procedure code - Not defined” is displayed on Procedure Code 4. User shall be able to capture response for Procedure\_Is\_Depricated through radio button (Yes/No). |
| **E** | **Exceptions/Error Conditions:** | In an event of missing values, descriptive error message shall be displayed to the user, beside respective fields in red color.   1. If Other Procedure Code field is not filled then the following error message shall be displayed to the user.   *“This field cannot be empty.”*   1. If the “Procedure\_Is\_Depricated?” section’s– Radio button is not selected then the following error message shall be displayed to the user.   “Kindly provide a response.” |
| **F** | **Assumptions:** | 1. The master data is accessible to the user 2. Procedure suggestion based on Patient diagnosis is out of scope 3. Relational data linking between diagnosis, medications and procedures in out of scope |

# Patient Medication Details Subsection

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| --- | --- | --- |
| **Sr. No.** | **Description:** | This use case allows the User to access capture Patient’s Medication details |
| **A** | **Trigger:** | User click enter the patient visit details button |
| **B** | **Pre-Conditions/Inputs:** | 1. Medication details data base contains following information  * Drug\_ID –(Snomed-ct) * Drug\_Name * Drug\_Generic\_Name * Drug\_Brand\_Name * Drug\_Form  1. User is able to retrieve and analyze the Medication data from the master table |
| **C** | **Post-Conditions/Outputs:** | 1. Patient visit details successfully message shall appear upon click of Save/submit button 2. The user shall be able to view Patient Medication details after click of save button |
| **D** | **Flow:** | 1. Patient Medication section is following field to capture Physician’s selection of Medication for individual patient:    * Drug\_ID –      + If Drug\_ID is entered the auto-populate the Drug\_Name, Drug\_Generic\_Name, Drug\_Brand\_Name, and Drug\_Form      + If left blank, then auto-populate Drug\_ID after selection of Drug\_Name and Drug\_Form    * Drug\_Name – Selected from dropdown list      + Allow User to search Drug\_Name through keywords of more than three characters      + Refine the drop-down list options based on the search keyword/keywords      + Upon selection of Drug\_Name, pass the information of Drug\_Generic\_Name, Drug\_Brand\_Name, and Drug\_Form to respective functions, for selection through drop down list    * Drug\_Generic\_Name      + Auto-populate the drug generic name after selection of drug name.    * Drug\_Brand\_Name      + Expand the drug’s brand name section with various options of multiple selection of brand name for selected drug name, using available information in master data.      + Multiple selection of brand name may be made possible through checkbox (Optional)    * Drug\_Form      + Allow User to select Drug\_Form through the drop-down list options (refined based on Drug name) 2. User shall be able to capture Drug\_ID (via Textbox/Dropdownlist). Based on selected Drug\_ID, Drug\_Name, Drug\_Generic\_Name, Drug\_Brand\_Name, and Drug\_Form fields are auto-populated. 3. User shall be able to capture Drug\_Name through a dropdown menu, in case Medication code is not selected.    1. If any option except Other is selected, a subset of data is used for creating select data/options for Drug\_ID, Drug\_Generic\_Name, Drug\_Brand\_Name, and Drug\_Form fields.    2. If Other Option is selected by the user       1. A text box shall appear to capture the Medication details (Required field).       2. “Medication code - Not defined” is displayed on Medication Code 4. Drug\_Generic\_Name is autopopulated based on selected Drug name 5. User shall be able to capture response for Drug\_Brand\_Name, from a dropdown list. (Optional) 6. User shall be able to capture response for Drug\_Form, from a dropdown list. |
| **E** | **Exceptions/Error Conditions:** | In an event of missing values, descriptive error message shall be displayed to the user, beside respective fields in red color.   1. If Other Medication Code field is not filled then the following error message shall be displayed to the user.   *“This field cannot be empty.”*   1. If the Drug\_Form field is empty then the following error message shall be displayed to the user.   “Kindly provide a response.” |
| **F** | **Assumptions:** | 1. The master data is accessible to the user 2. Medication suggestion based on Patient diagnosis/procedure is out of scope 3. Relational data linking between diagnosis, medications and procedures in out of scope |