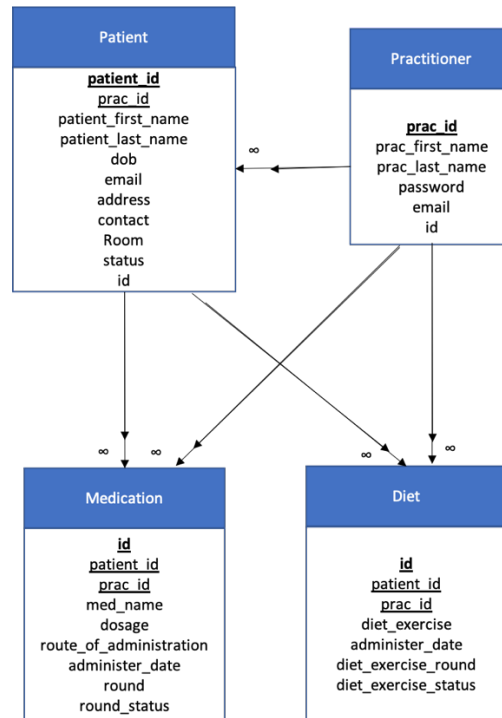


**BIOMED9450 – Major Project (Stella Lau)**  
**A Web-Based Medication and Diet Regime Management System**  
**NSW Health Age Care Home**

Database Design:



- Each patient have a 1 to 1 relationship with Practitioner
    - Each patient is assigned an attending practitioner.
  - Each practitioner have a 1 to many relationship with patients.
  - Each patient have a 1 to many relationship with Medication and Diet.
    - A patient can have many medication and diet records
  - Each practitioner also have a 1 to many relationship to Medication and Diet, as they prescribe many records of medication and diet regime for patients.
    - When practitioner enters prescription data (Will be another system not within the scope of this project), the Medication and Diet database will be populated.
    - Each day, each round (morning, afternoon, evening) is stored as a line of record in the Medication/Diet database.
- This is done so that for every medication and round, a status of the administration of diet/medication can be recorded.

1	A123	z5275703	ibuprofen	200mg	Oral	25/11/2020	morning	prescribed
10	A123	z5275703	ibuprofen	200mg	Oral	26/11/2020	evening	prescribed

Each medication recorded can have the following status:

- Prescribed (default when prescription is entered)
- Given
- Refused
- Fasting
- No stock
- Ceased

<b>Patient</b> Primary Key: patient_id Secondary Key: prac_id		<b>Practitioner</b> Primary Key: prac_id Secondary Key: patient_id	
Patient_id	Short text	Prac_id	Short text
Prac_id	Short text	Patient_id	Short text
Patient_first_name	Short text	Prac_first_name	Short text
Patient_last_name	Short text	Prac_last_name	Short text
dob	Short text	email	Short text
email	Short text	password	Short text
address	Short text	id	Number
contact	Short text		
room	Short text		
status	Short text		
id	Number		

<b>Medication</b> Primary Key: id Secondary Key: prac_id, patient_id		<b>Diet</b> Primary Key: id Secondary Key: prac_id , patient_id	
id	Number	id	Number
Patient_id	Short text	Patient_id	Short text
Prac_id	Short text	Prac_id	Short text
Patient_first_name	Short text	Patient_first_name	Short text
Patient_last_name	Short text	Patient_last_name	Short text
Med_name	Short text	Diet_exercise	Short text
dosage	Short text	Administer_date	Short text
Route_of_administration	Short text	Diet_exercise_round	Short text
Administer_date	Short text	Diet_exercise_status	Short text
round	Short text		
Round_status	Short text		

### Patient Database Records

- For patient records, the following details are recorded:
  - Patient ID (Unique identifier for each patient, alpha numeric)
  - Patient First Name
  - Patient Last Name
  - Date of Birth (DOB)
  - Email
  - Address
  - Contact number
  - Practitioner id (Attending practitioner ID)
  - Room Number
  - Status (Admitted/Discharge/Deceased)
- I have populated the database with 5 patients as follows:

Patient											
ID	patient_id	patient_first	patient_last	dob	email	address	contact	prac_id	room	status	Click to Add
1 A123	1	michelle	keogh	21/07/1989	abc@bbb.com	1 champ way, l	41253433	z5275703	106	Admitted	
2 A135	2	david	jones	3/02/1999	abc@bbb.com	33 Boat Ramp,	41653498	z5275704	107	Admitted	
3 A145	3	iveta	monslave	30/12/1978	abc@bbb.com	44 Beach Road	41253498	z5275703	103	Discharged	
4 A101	4	paul	smith	1/04/1951	abc@bbb.com	1 the gateway,	41253498	z5283420	106	Deceased	
5 A107	5	peter	smith	24/11/2003	abc@bbb.com	1 the gateway,	41234235	z5283420	107	Admitted	
(New)											

### Practitioner Database Records

- For Practitioner Record, the following details are recorded:
  - Practitioner First name
  - Practitioner Last Name
  - Practitioner ID (Unique identifier for each practitioner, alpha-numeric)
  - Password
  - Email
- The email and password is required for login into the system
- I have chosen not to include the practitioner's personal details here, as employee records should be managed by a HR CRM system, and not combined with this patient management system.

ID	prac_first_n	prac_last_n	prac_id	password	email
1	stella	lau	z5275703	Qwerty123	stella.lau@paradise-care.com
2	casey	gill	z5275704	Casey1234	casey.gill@paradise-care.com
3	matt	yang	z5283420	MattY2314	matt.yang@paradise-care.com
4	bee	hive	Z1234567	BuzzBee123	qwerty@paradise-care.com
5	Lucia	Matthews	Z4312561	LuciaMatt123	lucia.matthews@paradise-care.com

### Patient Medication/Diet Database Records

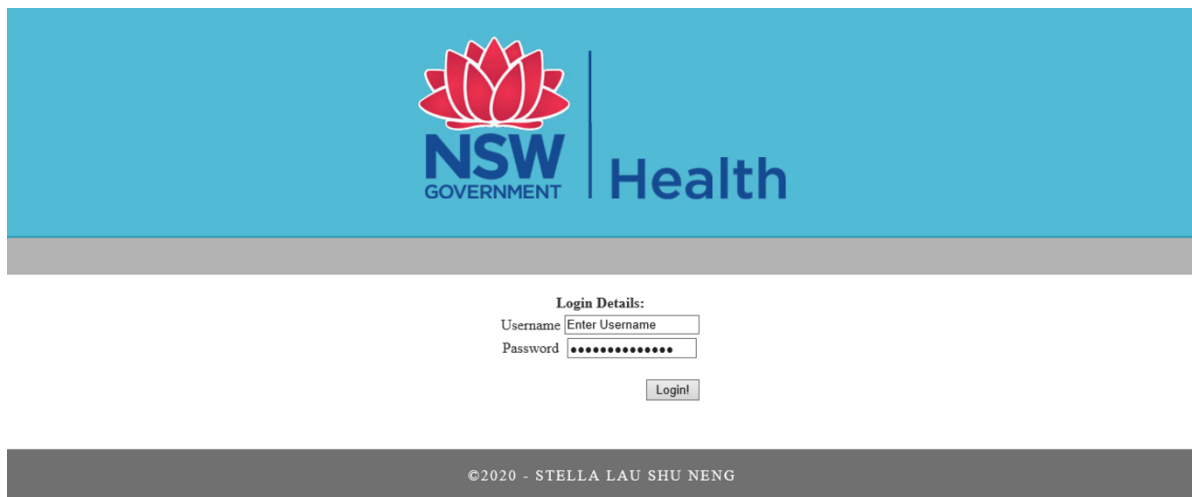
- Date range of records : 28 November 2020 to 12 December 2020
- Each line of record is a round for a particular medication for a particular round for the day. This way, the record of what action is taken for that particular medication for the round can be recorded.
- Patient Conditions:
  - Patient A123: COPD. Trouble swallowing, so put on soft diet

- Patient A145: Hypertension, Low salt diet (Only morning and afternoon. Family brings dinner)
- Patient A135: Gout, Low Protein Diet (Dinner Only)
- Patient A107: Fell and had a big wound. Given topical antibiotics for 10 days (3 Dec to 12 Dec), No diet regime.

### Login Page (index.html)

Username: stella.lau@paradise-care.com

Password: Qwerty123

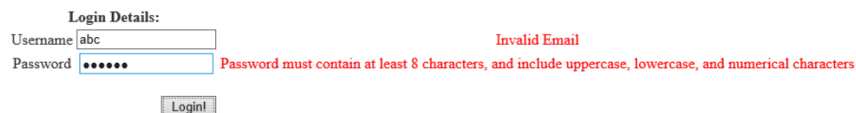


Username:

- email of practitioner
- Validation:
  - Before the '@' you can have any number of a-z,A-Z,0-9,','\_',or'-'
  - After the '@' you can have any number of a-z,A-Z,0-9,','\_',or'-'
  - At the end you can have a '.' followed by between 2 and 4 characters from a-z or A-Z

Password:

- Validation:
  - Password must contain 8 to 15 characters
  - Must include uppercase, lowercase, and numerical characters



Upon login, a new session will be created.

The practitioner ID would be stored as the session ID, as we will be using this to access the practitioner's data later on.

### Practitioner's Daily rounds (practitioner\_main.php)

An overview of the practitioner's Medication diet and medication rounds to make, separated by morning, afternoon and evening rounds for that day will be displayed.


Health

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Morning Medication Rounds

Patient Id	First Name	Last Name	Room No.	Status	Medication Name	Dosage	Route of Administration	Round Status	View Profile	Action
A123	michelle	keogh	105	Admitted	Relvar Ellipta	184 mg/22 mg	Inhalation Powder	Ceased	<a href="#" style="color: #0072bc;">View Profile</a>	<a href="#" style="color: #c00000;">Edit</a>
A145	iveta	monslave	103	Admitted	Dyazide	Hydrochlorothiazide 50 mg-Triamterene 100 mg	Oral	No Stock	<a href="#" style="color: #0072bc;">View Profile</a>	<a href="#" style="color: #c00000;">Edit</a>

Morning Diet Rounds

Patient Id	First Name	Last Name	Room No.	Status	Exercise/Diet	Exercise/Diet Status	View Profile	Action
A123	michelle	keogh	105	Admitted	liquid food - A	Given	<a href="#" style="color: #0072bc;">View Profile</a>	<a href="#" style="color: #c00000;">Edit</a>

Afternoon Medication Rounds

Patient Id	First Name	Last Name	Room No.	Status	Medication Name	Dosage	Route of Administration	Round Status	View Profile	Action
A123	michelle	keogh	105	Admitted	random	3%	injection	prescribed	<a href="#" style="color: #0072bc;">View Profile</a>	<a href="#" style="color: #c00000;">Edit</a>

Afternoon Diet Rounds

Patient Id	First Name	Last Name	Room No.	Status	Exercise/Diet	Exercise/Diet Status	View Profile	Action
A123	michelle	keogh	105	Admitted	liquid food - B	Ceased	<a href="#" style="color: #0072bc;">View Profile</a>	<a href="#" style="color: #c00000;">Edit</a>

Evening Medication Rounds

Patient Id	First Name	Last Name	Room No.	Status	Medication Name	Dosage	Route of Administration	Round Status	View Profile	Action
A145	iveta	monslave	103	Admitted	Acetaminophen	1000mg	Oral	Prescribed	<a href="#" style="color: #0072bc;">View Profile</a>	<a href="#" style="color: #c00000;">Edit</a>

Evening Diet Rounds

Patient Id	First Name	Last Name	Room No.	Status	Exercise/Diet	Exercise/Diet Status	View Profile	Action
A123	michelle	keogh	105	Admitted	liquid food - C	Given	<a href="#" style="color: #0072bc;">View Profile</a>	<a href="#" style="color: #c00000;">Edit</a>

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I chose to do it this way, so at a glance, the practitioner can see his workload for the day. Practitioner is only allowed to view his round, as he is only required to fulfil his rounds, and not get involved in other practitioner's patients. For every record, the practitioner may view the patient's profile.

And as the practitioner makes his round, he can update each medication record round status as he goes. Real-time updates on the status of each round of records can be seen on this page.

- Medication Status:
  - Prescribed (default)
  - Given
  - Refused
  - Fasting
  - No Stock
  - Ceased
- Diet Status:
  - Prescribed(default)
  - Given
  - Refused
  - Fasting
  - Ceased

Every time a medication or diet record is updated as “Refused”, it will trigger the system to send an email to the aged-care facility director with the following details:

- Patient ID
- Practitioner ID
- Patient First Name
- Patient Last Name
- Medication Name
- Dosage
- Route of Administration
- Medication Round (morning/afternoon/evening)
- Status: “Refused”

```
if($add_round_status == "Refused"){
    $to = "stella.snla@gmail.com";
    $subject = "Medication Refused (P.ID:".$add_p_id.")";

    $message = "<h1><b>Notice of Medication Refusal</b></h1>";
    $message .= "Date : ".$sc_t_date;
    $message .= "Practitioner ID: ".$add_prac_id;
    $message .= "Patient ID: ".$add_p_id;
    $message .= "Medication Name: ".$add_med_name;
    $message .= "Dosage: ".$add_dose;
    $message .= "Route of Administration: ".$add_route;
    $message .= "Medication Round: ".$add_round;

    $headers = 'From: stella.snla@gmail.com' . "\r\n" .
        'Reply-To: stella.snla@gmail.com' . "\r\n" .
        'MIME-Version: 1.0' . "\r\n" .
        'Content-type: text/html; charset=iso-8859-1' . "\r\n" .
        'X-Mailer: PHP/' . phpversion();

    mail($to,$subject,$message, $headers);
}
```

However, the code to trigger the email to be sent is not working.

We do not have access to configure the php.ini files to setup the mail sending configurations.

### Add New Patient(add\_patient.php)

The screenshot displays the NSW Health system interface. At the top, there is a blue header with the NSW Government logo and the text 'NSW Health'. Below the header is a navigation bar with links: 'Today's Rounds', 'Add New Patient', 'Patient Records', 'Search Patient', 'Reports', and 'Log Out'. The 'Add New Patient' link is highlighted. Below the navigation bar, the 'Add New Patient' form is visible. It contains several input fields: 'Patient ID', 'First Name', 'Last Name', 'DOB(dd/mm/yyyy)', 'Room', 'Status', 'Email', 'Address', 'Contact', and 'Upload photo'. Each field has a placeholder text indicating what to enter. There is a 'Browse...' button next to the 'Upload photo' field. At the bottom right of the form is an 'Add' button.

Practitioner can add a new patient which enters into the facility.

Practitioner will be prompted to fill in the following fields in the form, which would be validated each time the cursor move away from the field:

NSW GOVERNMENT | Health

[Today's Rounds](#) [Add New Patient](#) [Patient Records](#) [Search Patient](#) [Reports](#) [Log Out](#)

Add New Patient

Patient ID:

First Name:

Last Name:

DOB (dd/mm/yyyy):

Room:

Status:

Email:

Address:

Contact:

Upload photo:

First name should contain only letters, apostrophes, spaces and hyphens

Last name should contain only letters, apostrophes, spaces and hyphens

Wrong DOB format

Invalid Email

Contact should contain 10 Digits only

- Patient ID
- Patient First Name
  - Validation:
    - Must contain only letters, apostrophes, spaces and hyphens
- Patient Last Name
  - Validation:
    - Must contain only letters, apostrophes, spaces and hyphens
- Patient DOB
  - Validation:
    - Must be dd/mm/yyyy format
- Room
- Status
  - Dropdown list:
    - Admitted
    - Discharged
    - Deceased
- Email
  - Validation:
    - Before the '@' you can have any number of a-z,A-Z,0-9,','\_',or'-'
    - After the '@' you can have any number of a-z,A-Z,0-9,','\_',or'-'
    - At the end you can have a '.' followed by between 2 and 4 characters from a-z or A-Z
- Address
- Contact
  - Validation:
    - Only numbers allowed
    - Must be 10 digits
- Upload Photo (Ensure that file name is saved as Patient ID)
  - Files will be uploaded into **'Images'** folder
  - Validation:


- Check if file already exist
- File size must be less then 500KB
- Must be in either Jpg or Jpeg or Png or GIF format

When form is submitted, we would check the database for duplicate records using the combination of patient first name + patient last name + date of birth.

After adding patient record, the newly added patient's profile page will be shown.

### **Patient Records(patient\_records.php)**

Practitioner can view all records of patients in the database.


Health

[Today's Rounds](#)  
 [Add New Patient](#)  
[Patient Records](#)  
[Search Patient](#)  
[Reports](#)  
[Log Out](#)

**Patient Records Database**

Patient Id	Practitioner ID	First Name	Last Name	DOB	Room No.	Status	Email	Address	Contact		
A101	z5283420	paul	smith	04-01-1951	106	Deceased	abc@bbb.com	1 the gateway, NSW, Australia	41253498	<a href="#" style="color: #0072bc; text-decoration: none;">Edit</a>	<a href="#" style="color: #0072bc; text-decoration: none;">View Profile</a>
A107	z5283420	peter	smith	01-01-1970	107	Admitted	abc@bbb.com	1 the gateway, NSW, Australia	41234235	<a href="#" style="color: #0072bc; text-decoration: none;">Edit</a>	<a href="#" style="color: #0072bc; text-decoration: none;">View Profile</a>
A123	z5275703	michelle	keogh	01-01-1970	105	Admitted	abc@bbb.com	1 champ way, NSW, Australia	41253433	<a href="#" style="color: #0072bc; text-decoration: none;">Edit</a>	<a href="#" style="color: #0072bc; text-decoration: none;">View Profile</a>
A135	z5275704	david	jones	02-03-1999	107	Admitted	abc@bbb.com	33 Boat Ramp, NSW, Australia	41653498	<a href="#" style="color: #0072bc; text-decoration: none;">Edit</a>	<a href="#" style="color: #0072bc; text-decoration: none;">View Profile</a>
A145	z5275703	iveta	monslave	01-01-1970	103	Admitted	abc@bbb.com	44 Beach Road	41253498	<a href="#" style="color: #0072bc; text-decoration: none;">Edit</a>	<a href="#" style="color: #0072bc; text-decoration: none;">View Profile</a>

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Practitioner can choose to view the profile of any patient in the facility.


Health

[Today's Rounds](#)  
[Add New Patient](#)  
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[Search Patient](#)  
[Log Out](#)



Patient Name: michelle keogh  
 Patient ID: A123  
 Practitioner ID: z5275703  
 Room Number: 106  
 Status: Admitted  
 Date of Birth: 21/07/1989  
 Email: abc@bbb.com  
 Address: 1 champ way, NSW, Australia  
 Contact: 41253433

Practitioner can also edit the details of a patient record.



### Edit Patient Record

First Name:	<input type="text" value="michelle"/>
Last Name:	<input type="text" value="keogh"/>
DOB(dd/mm/yyyy):	<input type="text" value="21/07/1989"/>
Room:	<input type="text" value="106"/>
Status:	<input type="text" value="Admitted"/>
Email:	<input type="text" value="abc@bbb.com"/>
Address:	<input type="text" value="1 champ way, NSW, Aus"/>
Contact:	<input type="text" value="41253433"/>

In the edit patient record page, the practitioner ID and Patient ID will be hidden, as these fields should not be edited.

Validation of form fields is same as the add patient form.

### Searching for patient in Database (search\_patient.php)

Practitioner can search for patients using **any one** of these search fields:

- Search by Patient ID
- Search by Patient Name – First Name + Last Name (there may be duplicate first name or last name)
- Search by Room
- Search by Practitioner ID
- Search by admission status

### Search Patient Records Database

**Search By Patient ID**

Patient ID:

**Search By Patient Name**

Patient First Name:

Patient Last Name:

**Search By Room**

Room Number:

**Search By Practitioner ID**

Practitioner Id:

**Search By Admission Status**

Admission Status:

Search Patient Records Database

Search By Patient ID

Patient ID:  x

Patient Records Found:

Patient Id	Practioner ID	First Name	Last Name	DOB	Room No.	Status	Address	Contact		
A123	z5275703	michelle	keogh	01-01-1970	106	Admitted	1 champ way, NSW, Australia	41253433	<a href="#">Edit</a>	<a href="#">View Profile</a>

Search By Patient Name

Patient First Name:

Patient Last Name:  x

Patient Records Found:

Patient Id	Practioner ID	First Name	Last Name	DOB	Room No.	Status	Address	Contact		
A123	z5275703	michelle	keogh	01-01-1970	106	Admitted	1 champ way, NSW, Australia	41253433	<a href="#">Edit</a>	<a href="#">View Profile</a>

Search By Room

Room Number:  x

Patient Records Found:

Patient Id	Practioner ID	First Name	Last Name	DOB	Room No.	Status	Address	Contact		
A101	z5283420	paul	smith	04-01-1951	107	Deceased	1 the gateway, NSW, Australia	41253498	<a href="#">Edit</a>	<a href="#">View Profile</a>
A107	z5283420	peter	smith	01-01-1970	107	Admitted	1 the gateway, NSW, Australia	41234235	<a href="#">Edit</a>	<a href="#">View Profile</a>
A135	z5275704	david	jones	02-03-1999	107	Admitted	33 Boat Ramp, NSW, Australia	41653498	<a href="#">Edit</a>	<a href="#">View Profile</a>

Search By Practitioner ID

Practitioner Id:  x

Patient Records Found:

Patient Id	Practioner ID	First Name	Last Name	DOB	Room No.	Status	Address	Contact		
A000	z5275703	Patients	ZeroYAY	12-12-2001	A999	Admitted	112 asd asd	1234567898	<a href="#">Edit</a>	<a href="#">View Profile</a>
A123	z5275703	michelle	keogh	01-01-1970	106	Admitted	1 champ way, NSW, Australia	41253433	<a href="#">Edit</a>	<a href="#">View Profile</a>
A145	z5275703	iveta	monslave	01-01-1970	103	Discharged	44 Beach Road	41253498	<a href="#">Edit</a>	<a href="#">View Profile</a>

Search By Admission Status

Admission Status:  x

Patient Records Found:

Patient Id	Practioner ID	First Name	Last Name	DOB	Room No.	Status	Address	Contact		
A000	z5275703	Patients	ZeroYAY	12-12-2001	A999	Admitted	112 asd asd	1234567898	<a href="#">Edit</a>	<a href="#">View Profile</a>
A107	z5283420	peter	smith	01-01-1970	107	Admitted	1 the gateway, NSW, Australia	41234235	<a href="#">Edit</a>	<a href="#">View Profile</a>
A123	z5275703	michelle	keogh	01-01-1970	106	Admitted	1 champ way, NSW, Australia	41253433	<a href="#">Edit</a>	<a href="#">View Profile</a>
A135	z5275704	david	jones	02-03-1999	107	Admitted	33 Boat Ramp, NSW, Australia	41653498	<a href="#">Edit</a>	<a href="#">View Profile</a>

## [View report \(reports.php\)](#)

Practitioner can view performance of Medication rounds (number of patients seen) made in the past 7 days.



[Today's Rounds](#) [Add New Patient](#) [Patient Records](#) [Search Patient](#) [Reports](#) [Log Out](#)

Medication Round Performance of last 7 days

Date	Total Patients Seen
01/12/2020	3
28/11/2020	5
29/11/2020	2
30/11/2020	2

Select Type of Report to View

View Type:

Report Type:

Past/Present View:

[View Report](#)

Practitioner can select any of the following combinations to view report:

- View Type
  - All Patient
  - My Patient
- Report Type
  - Medication
  - Diet
- Past/Present View
  - Past 7 days
  - Next 7 days

Select Type of Report to View

View Type:

Report Type:

Past/Present View:

[View Report](#)

Practioner ID	Patient Id	First Name	Last Name	Admission Status	Room No.	Medication Name	Dosage	Route	Date Administered	Round	Round Status
z5275703	A123	michelle	keogh	Admitted	105	Relvar Ellipta	184 mg/22 mg	Inhalation Powder	01/01/1970	morning	No Stock
z5275703	A145	iveta	monslave	Admitted	103	Salbutamol Sulfate B.P.	1 puff	Inhalation	01/01/1970	morning	prescribed
z5275703	A145	iveta	monslave	Admitted	103	meth	loads	injection	01/01/1970	afternoon	prescribed
z5275703	A145	iveta	monslave	Admitted	103	panadol	500mg	Oral	01/01/1970	afternoon	prescribed
z5275703	A145	iveta	monslave	Admitted	103	Salbutamol Sulfate	1 puff	Inhalation	01/01/1970	evening	prescribed
z5275703	A123	michelle	keogh	Admitted	105	Relvar Ellipta	184 mg/22 mg	Inhalation Powder	01/01/1970	morning	No Stock
z5275703	A123	michelle	keogh	Admitted	105	Relvar Ellipta	184 mg/22 mg	Inhalation Powder	01/01/1970	morning	No Stock
z5275703	A123	michelle	keogh	Admitted	105	Relvar Ellipta	184 mg/22 mg	Inhalation Powder	12/01/2020	morning	Ceased
z5275703	A123	michelle	keogh	Admitted	105	Relvar Ellipta	184 mg/22 mg	Inhalation Powder	12/02/2020	morning	No Stock
z5275703	A123	michelle	keogh	Admitted	105	Relvar Ellipta	184 mg/22 mg	Inhalation Powder	12/03/2020	morning	No Stock
z5275703	A123	michelle	keogh	Admitted	105	Relvar Ellipta	184 mg/22 mg	Inhalation Powder	12/04/2020	morning	No Stock
z5275703	A123	michelle	keogh	Admitted	105	Relvar Ellipta	184 mg/22 mg	Inhalation Powder	12/05/2020	morning	No Stock

### **Logout (logout.php)**

When practitioner log out from the system, it would end the current session.

Session data will all be deleted.

User will be re-directed back to the login page.