**MINISTRY OF EDUCATION AND TRAINING**

**FPT UNIVERSITY**

Capstone Project Report 6

**The Laboratory Tests   
Management System**

|  |  |
| --- | --- |
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| **Capstone Project Code** | eLTMS |

- Ho Chi Minh City, 14 September 2018 -

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# Software User’s Manual

## Installation Guide

### Setting up environment:

#### Hardware requirement

* For server

|  |  |  |
| --- | --- | --- |
| Hardware | Minimum Requirements | Recommended |
| Internet Connection | Cable, Wi-Fi (6 Mbps) | Cable, Wi-Fi (16 Mbps) |
| Operating System | Window Server 2012 | Window Server 2012 |
| Computer Processor | Intel® Core i3-8100 (3.6Ghz/6MB Smart Cache) | Intel® Core  i7-8850H (2.6Ghz/9MB Smart Cache) |
| Computer Memory | 8GB RAM | 16GB RAM |

Table 1 - Hardware requirement for Server

* For web development:

|  |  |  |
| --- | --- | --- |
| * **Hardware** | Minimum Requirements | Recommended |
| Internet Connection | Cable, Wi-Fi (4 Mbps) | Cable, Wi-Fi (8 Mbps) |
| Operating System | Windows 7 or above | Windows 7 or above |
| Computer Processor | Intel® Core  i3-6300 (3.8Ghz/4MB Smart Cache) | Intel® Core i5-6500 (3.6Ghz/6MB Smart Cache) |
| Computer Memory | 4GB RAM | 8GB RAM |

Table 2 - Hardware requirement for web development

* For mobile development:

|  |  |  |
| --- | --- | --- |
| * **Hardware** | Minimum Requirements | Recommended |
| Internet Connection | Wi-Fi (2 Mbps),3G-4G | Wi-Fi (4 Mbps), 3G-4G |
| Operating System | Android 4.4.2 | Android 6.0 |
| Memory | 4GB RAM | 8GB RAM |

Table 3 - Hardware requirement for mobile development

#### Software requirement

|  |  |
| --- | --- |
| Software | Name / Version |
| Operating system | Windows 7 or above |
| Environment | C#.NET, Spring framework, JQuery, Bootstrap |
| Modeling tool | Offline: WhiteStartUML  Online: draw.io |
| IDE | Visual Studio 2017, Android studio |
| DBMS | SQL Server 2014 |
| Source control | SourceTree, Git |
| Web browser | Chrome 42 or above |

Table 4 - Software requirement

### Deployment at Server side:

#### Prepare deployment package

* Install JDK 8.0
* Install IntelliJ IDEA, Spring plugin
* Install Visual Studio 2017
* Install Android Studio
* Install SQL Server and restore database “eLTMS”

#### Configure Server before deploy

Open file application.properties in folder eBOS-backend\src\main\resources\  
+ Edit your database’s url at property “spring.datasource.url”.  
+ Edit your username to MySQL “spring.datasource.username”.  
+ Edit your password to MySQL “spring.datasource.password”.

#### Deploy Server

Open terminal in the root of project directory and type *mvn spring-boot:run* or Open project in Intellj IDEA and click  button.

### Deployment at Client side

#### Prepare deployment package

* For mobile: Install JDK 8.0, Android SDK, Gradle, Node.js.
* For web: Install Surge.
* Install Visual Studio 2017.

#### Deploy Mobile Application

* Build apk
  + Open terminal in the root of project directory.
  + Type: *react-native bundle --dev false --platform android --entry-file index.android.js --bundle-output ./android/app/build/intermediates/assets/debug/index.android.bundle --assets-dest ./android/app/build/intermediates/res/merged/debug.*
  + Type: *cd android/ &&* *./gradlew assembleDebug.*
  + Then apk will be generated, type following command to get where apk is: *cd app/build/outputs/apk/*
* Install apk on device
  + Open terminal in the root of project directory.
  + Check that device is the only connected device with: *adb devices.*
  + Install the apk with: *cd android && ./gradlew installDebug.*
* Now, mobile application is installed on the device.

#### Deploy Web Application

* Setup deployment configuration.
  + Open terminal in the root of project directory.
  + Type: *surge.*
  + Type email.
  + Type password*.*
  + Hit Enter when confirming project path.
  + Type domain.
  + Hit Enter when everything is OK, Surge will deploy the web application to the domain.
* Use the web.
  + Open web browser and type the domain on url bar, then hit Enter.

## User Guide

### Admin web application

#### Login

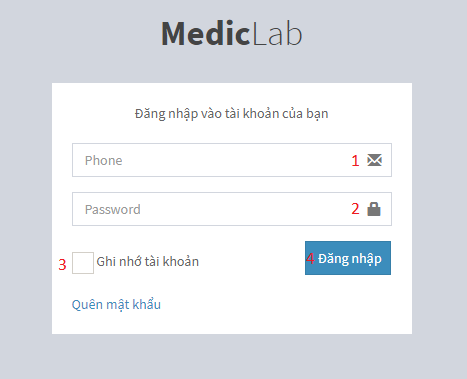


Figure 1 - Admin web application Guide <Login>

|  |  |
| --- | --- |
| **Step** | **Description** |
| 1 | Enter phone number |
| 2 | Enter password |
| 3 | Check “Ghi nhớ tài khoản”checkbox (optional) |
| 4 | Click on “Đăng nhập” button to sign in |

Table 5 - Admin web application Guide <Login>

#### View Hospital Receptionist Page

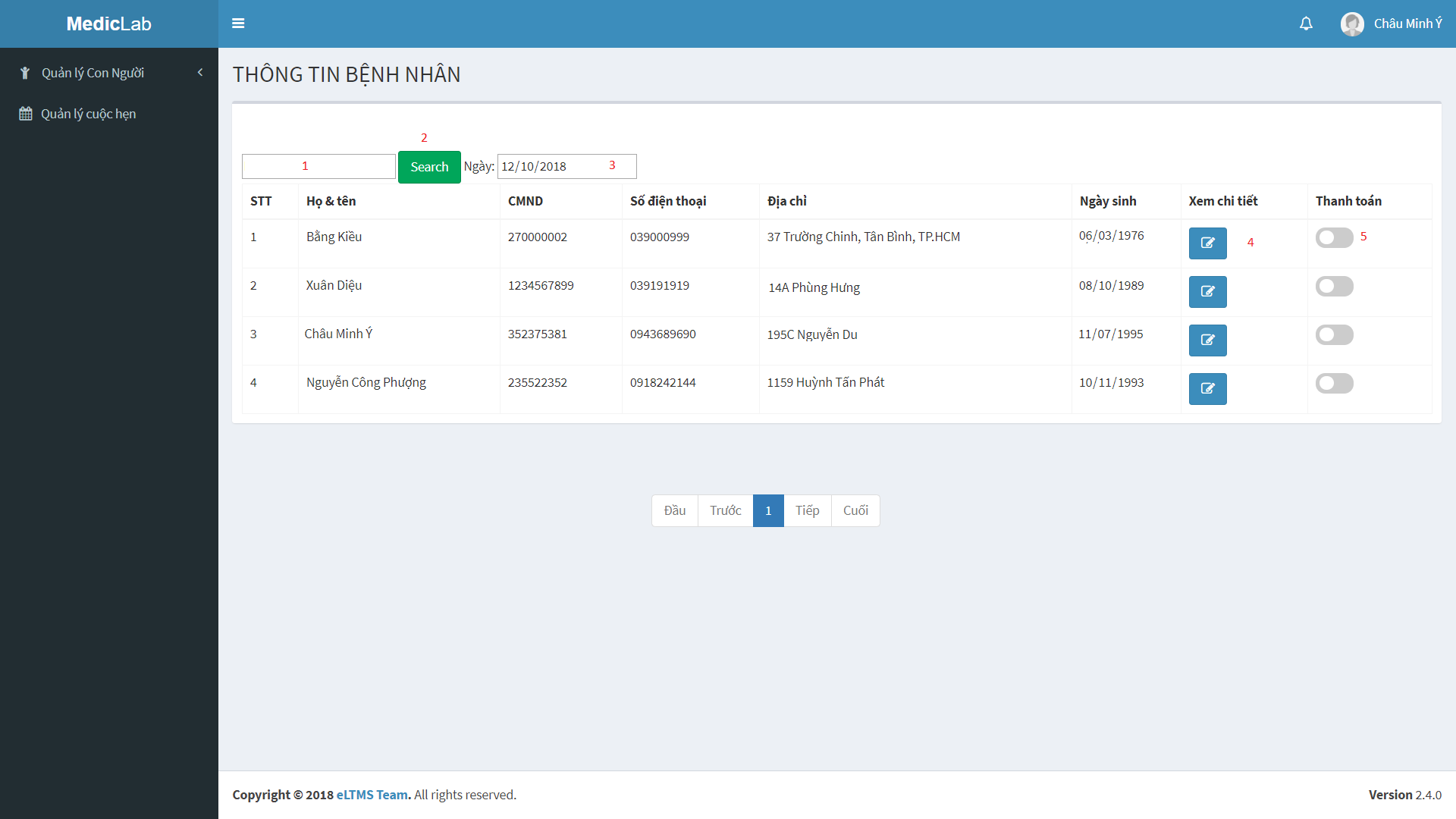


Figure 2 - Admin web application Guide <View Hospital Receptionist>

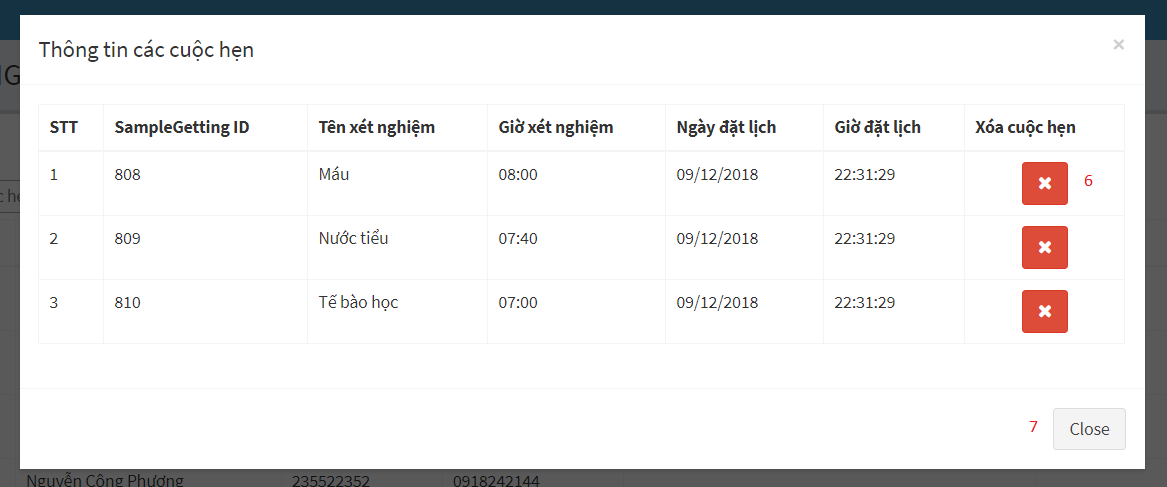


Figure 3 - Admin web application Guide <View Hospital Receptionist>



Figure 4 - Admin web application Guide <View Hospital Receptionist>

|  |  |
| --- | --- |
| **Step** | **Description** |
| 1 | Type keyword at textbox area to find patient by keyword |
| 2 | Click on “Search” button to perform action |
| 3 | Click on date area and choose date which you want to show list of patient |
| 4 | Click on blue button at “Xem chi tiết” column to view patient’s details of appointment |
| 5 | Click on switch checkbox at “Thanh toán” column to change status of appointment when patient pay the bill |
| 6 | After clicking on blue button in step 5, the popup will show patient’s details of appointment. You can click red button to delete a appointment |
| 7 | Click “close” button to close popup |
| 8 | After clicking on switch checkbox at “Thanh toán” column, the popup will show the bill. You can click “Có” button to pay the bill or “Không” button to cancel |

Table 6 - Admin web application Guide <View Hospital Receptionist>

#### View Department Receptionist Page

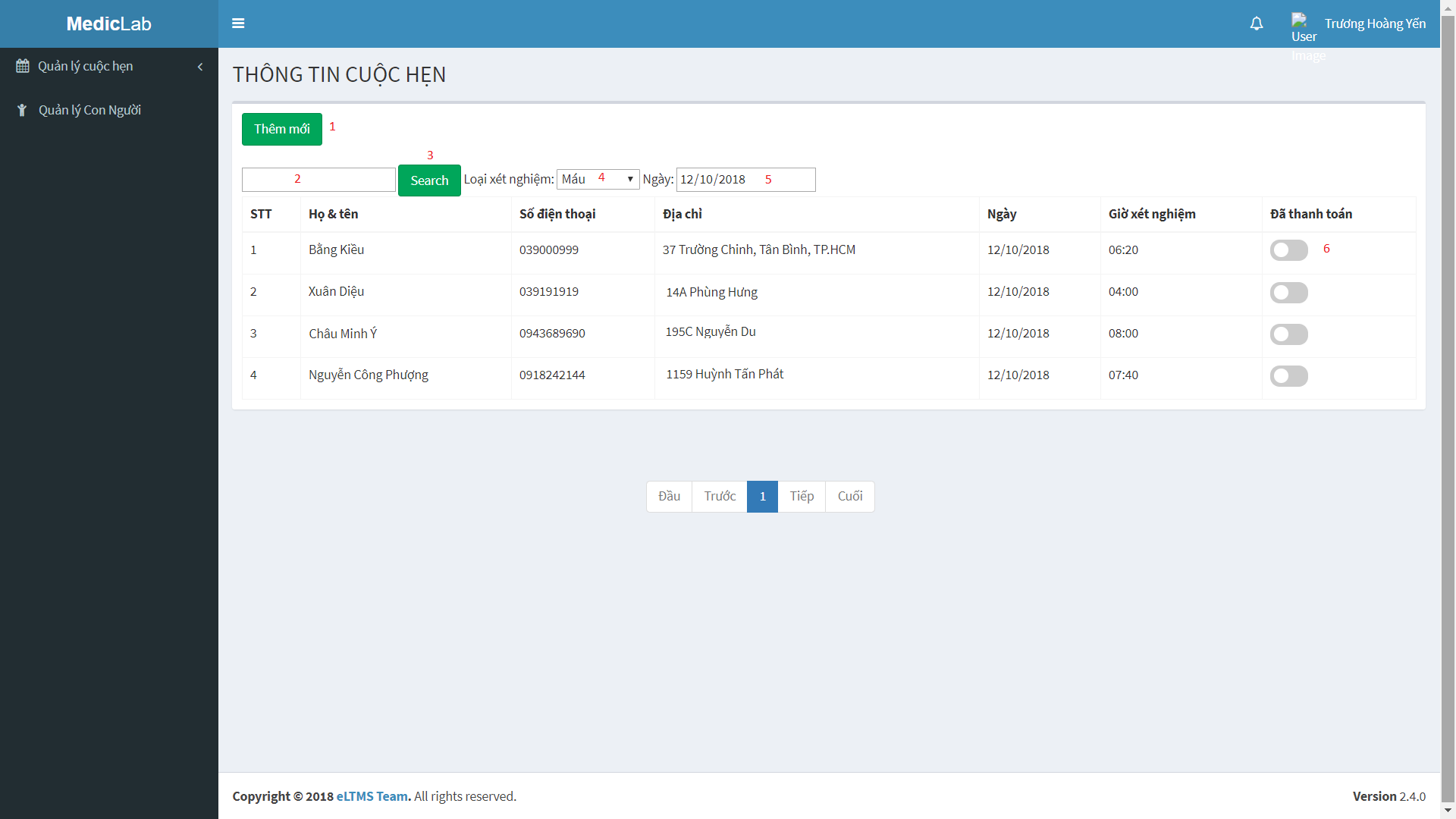


Figure 5 - Admin web application Guide <View Department Receptionist>

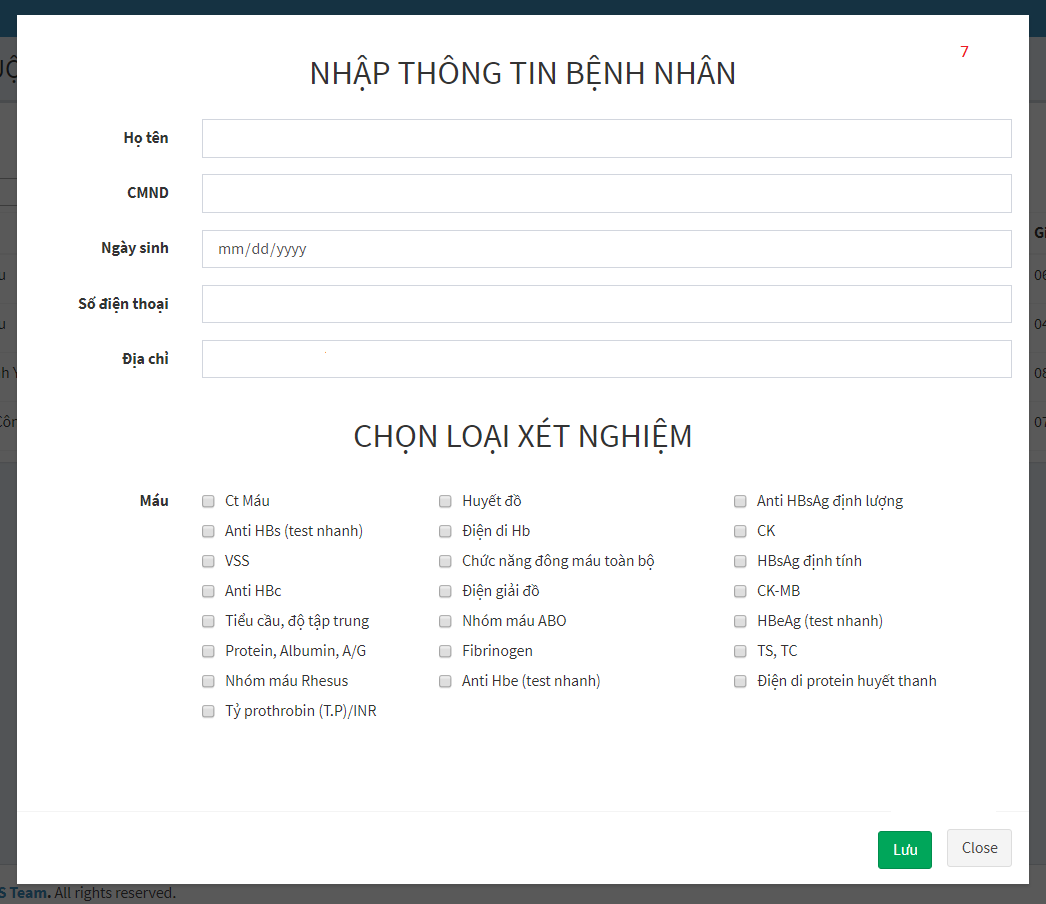


Figure 6 - Admin web application Guide <View Department Receptionist>



Figure 7 - Admin web application Guide <View Department Receptionist>

|  |  |
| --- | --- |
| **Step** | **Description** |
| 1 | Click on “Thêm mới” button to book a new appointment for patient who has no booking before |
| 2 | Type keyword at textbox area to find appointment by keyword |
| 3 | Click on “Search” button to perform action |
| 4 | Click and choose sample name which is used to filter appointment |
| 5 | Click on date area and choose date which you want to show list of appointment |
| 6 | Click on switch checkbox at “Thanh toán” column to change status of appointment when patient pay the bill |
| 7 | After click on “Thêm mới” button in step 1. You have to fill all of patient’s information and choose labtest. Then, click on “Lưu” button to create a new appointment or “Close” to cancel. |
| 8 | After clicking on switch checkbox at “Thanh toán” column, the popup will show the bill. You can click “Có” button to pay the bill or “Không” button to cancel |

Table 7 - Admin web application Guide <View user management>

#### View Nurse Page

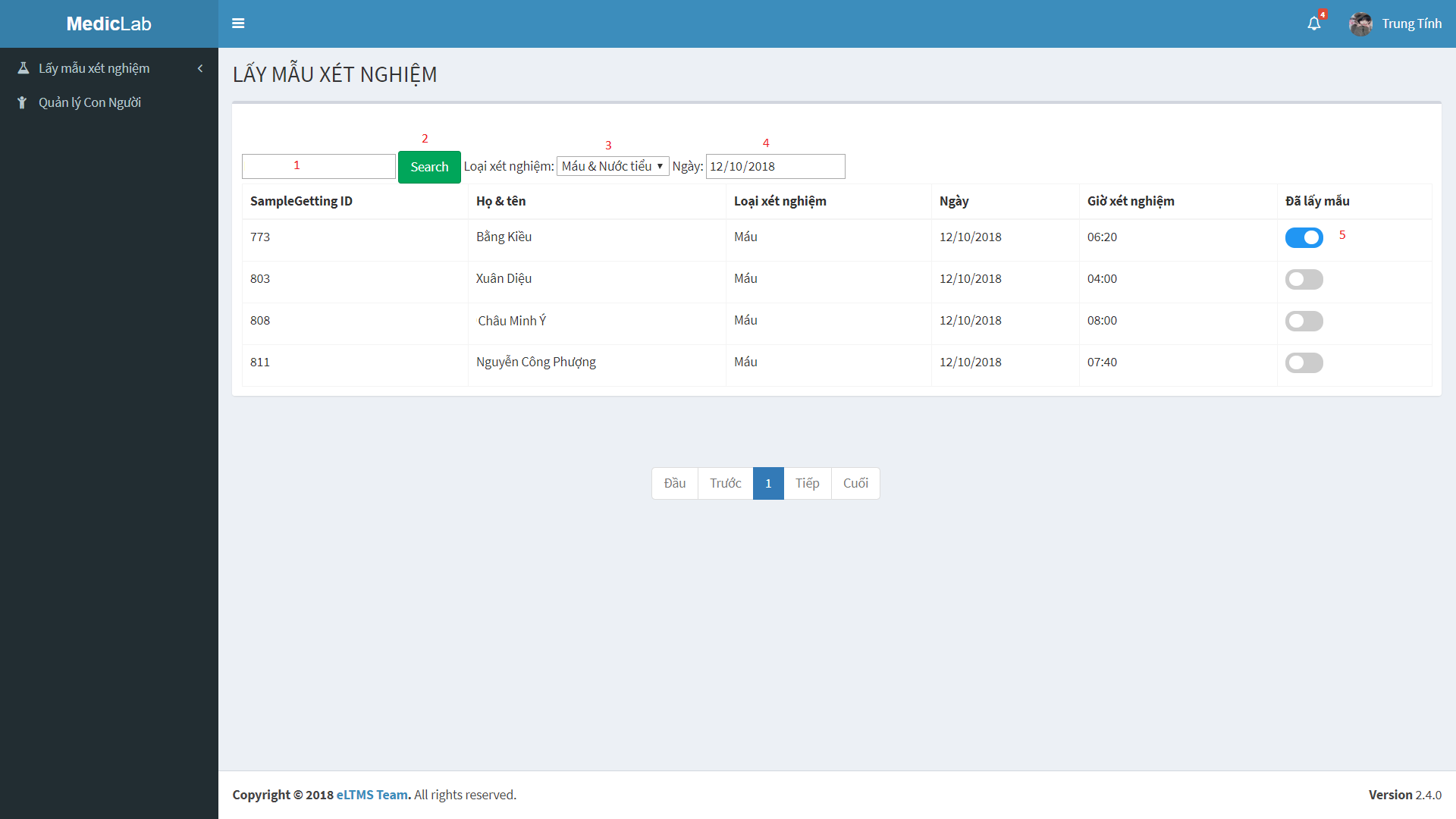


Figure 8 - Admin web application Guide <View Nurse>

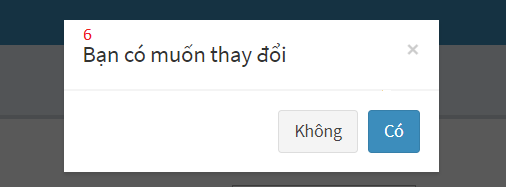
x

Figure 9 - Admin web application Guide <View Nurse>

|  |  |
| --- | --- |
| **Step** | **Description** |
| 1 | Type keyword at textbox area to find appointment by keyword |
| 2 | Click on “Search” button to perform action |
| 3 | Click and choose sample group which is used to filter appointment |
| 4 | Click on date area and choose date which you want to show list of appointment |
| 5 | Click on switch checkbox at “Đã lấy mẫu” column to change status of appointment when nurse got specimen |
| 6 | After clicking on switch checkbox at “Đã lấy mẫu” column, the popup to confirm action. You can click “Có” button to change status of appointment or “Không” button to cancel |

Table 8 - Admin web application Guide <View Nurse>

#### View Laboratory Technician Page

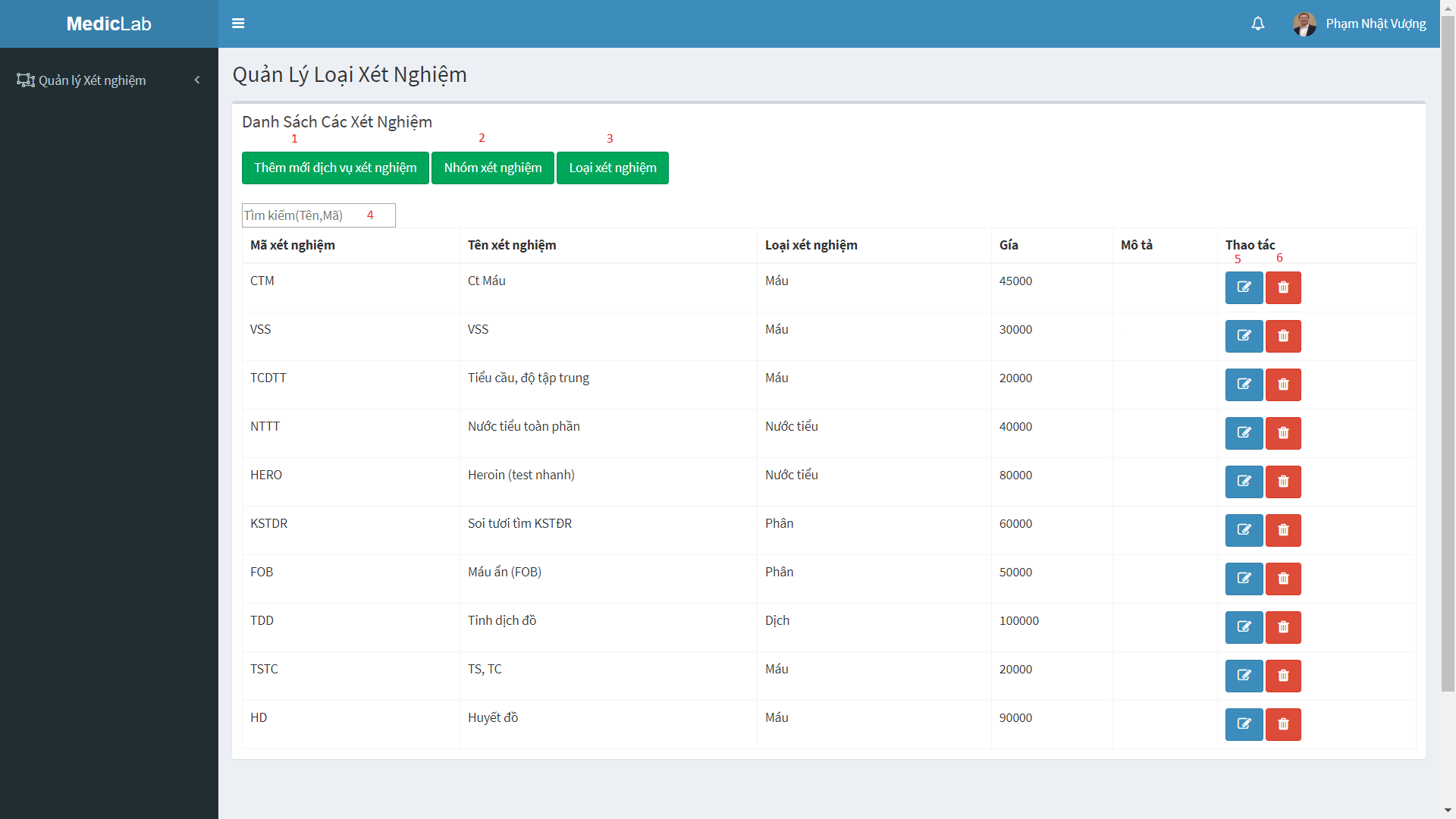


Figure 10 - Admin web application Guide <View Laboratory Technician>

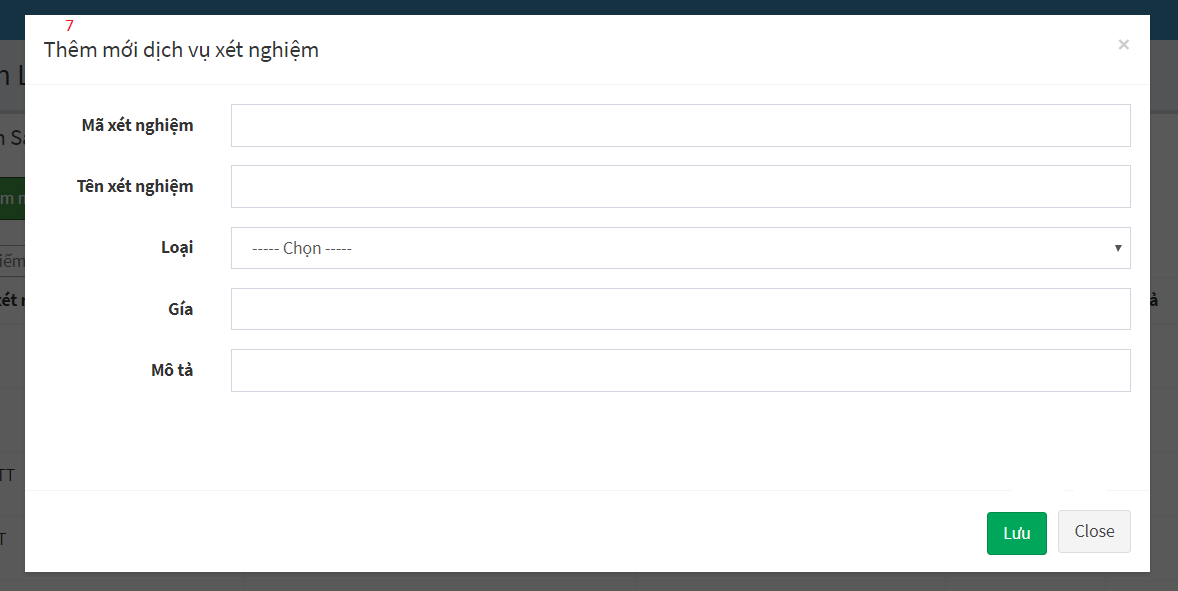


Figure 11 - Admin web application Guide <Laboratory Technician>



Figure 12 - Admin web application Guide <View Laboratory Technician>

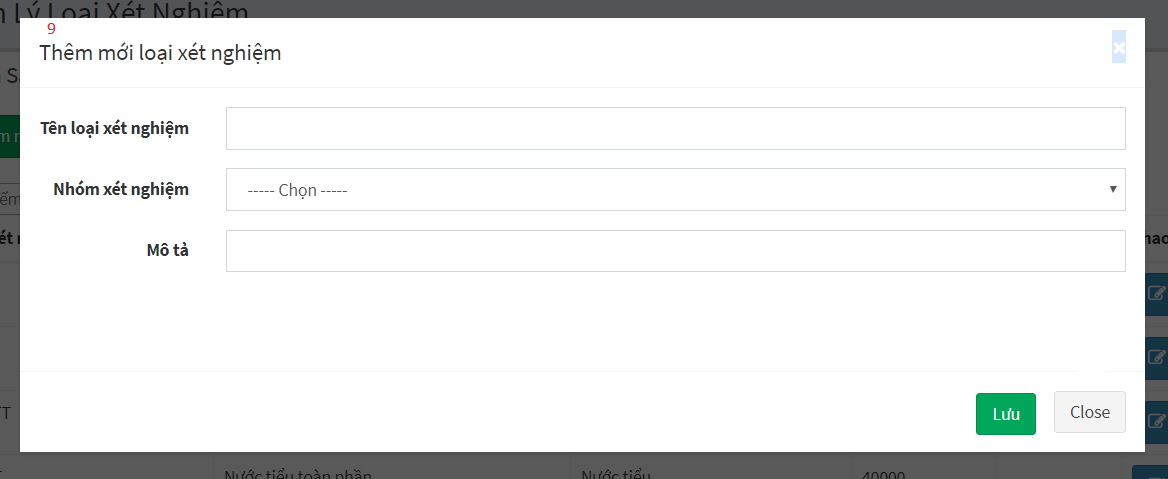


Figure 13 - Admin web application Guide <View Laboratory Technician>

|  |  |
| --- | --- |
| **Step** | **Description** |
| 1 | Click on “Thêm mới dịch vụ xét nghiệm” button to add new labtest |
| 2 | Click on “Nhóm xét nghiệm” button to add new sample group |
| 3 | Click on “Loại xét nghiệm” button to add new sample |
| 4 | Type keyword at textbox area to find labtest by keyword |
| 5 | Click on blue button at “Thao tác” column to edit labtest’s information |
| 6 | Click on red button at “Thao tác” column to delete a labtest |
| 7 | After clicking on “Thêm mới dịch vụ xét nghiệm” button in step 1, you have to fill all of labtest’s information. Then, click on “Lưu” button to add a new labtest or “Close” button to cancel |
| 8 | After clicking on “Nhóm xét nghiệm” button in step 2, you have to fill all of sample group’s information. Then, click on “Lưu” button to add a new sample group or “Close” button to cancel |
| 9 | After clicking on “Loại xét nghiệm” button in step 3, you have to fill all of sample’s information. Then, click on “Lưu” button to add a new sample or “Close” button to cancel |

Table 9 - Admin web application Guide <Laboratory Technician>

#### View Doctor Page

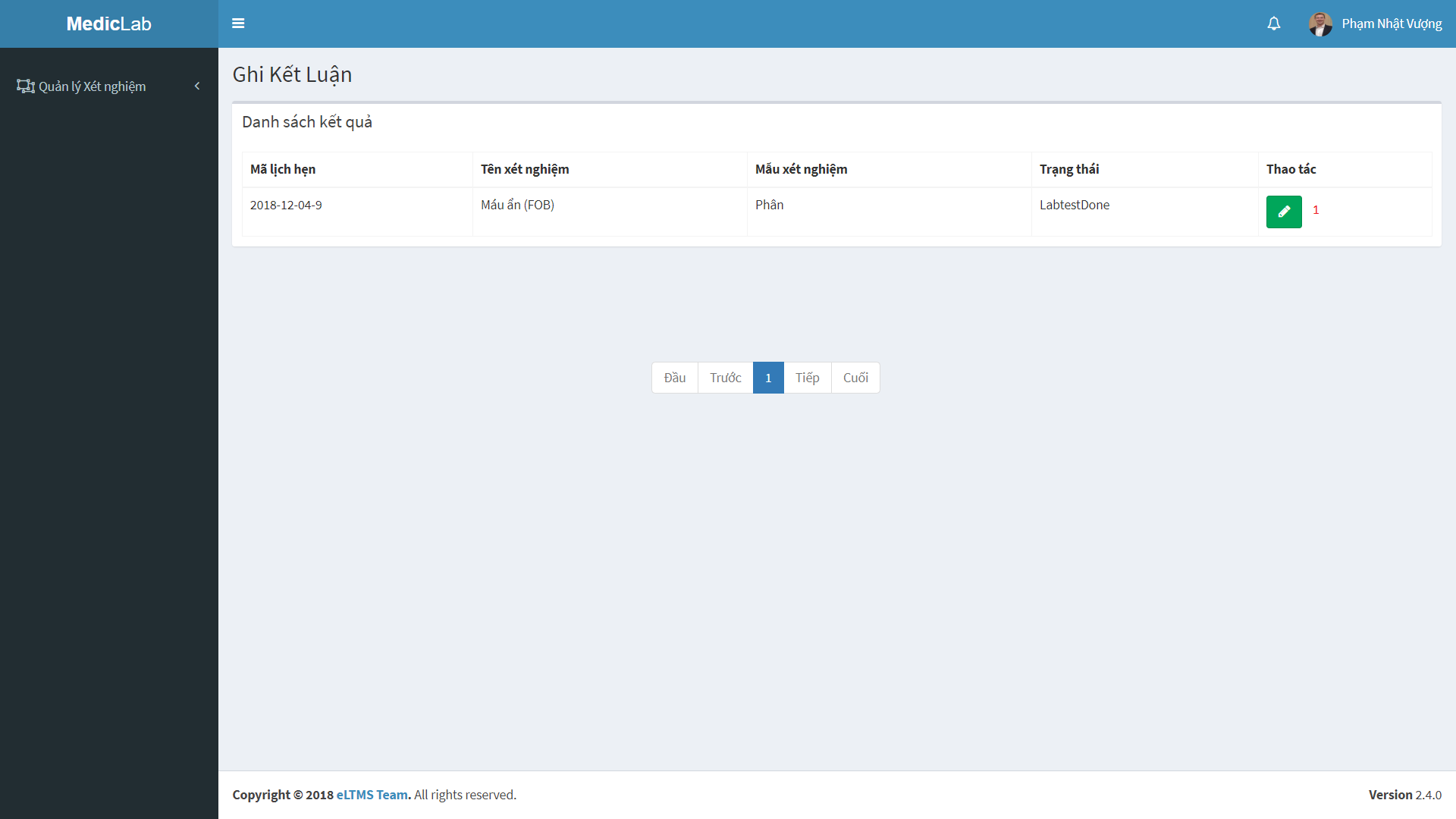


Figure 14 - Admin web application Guide <View Doctor>

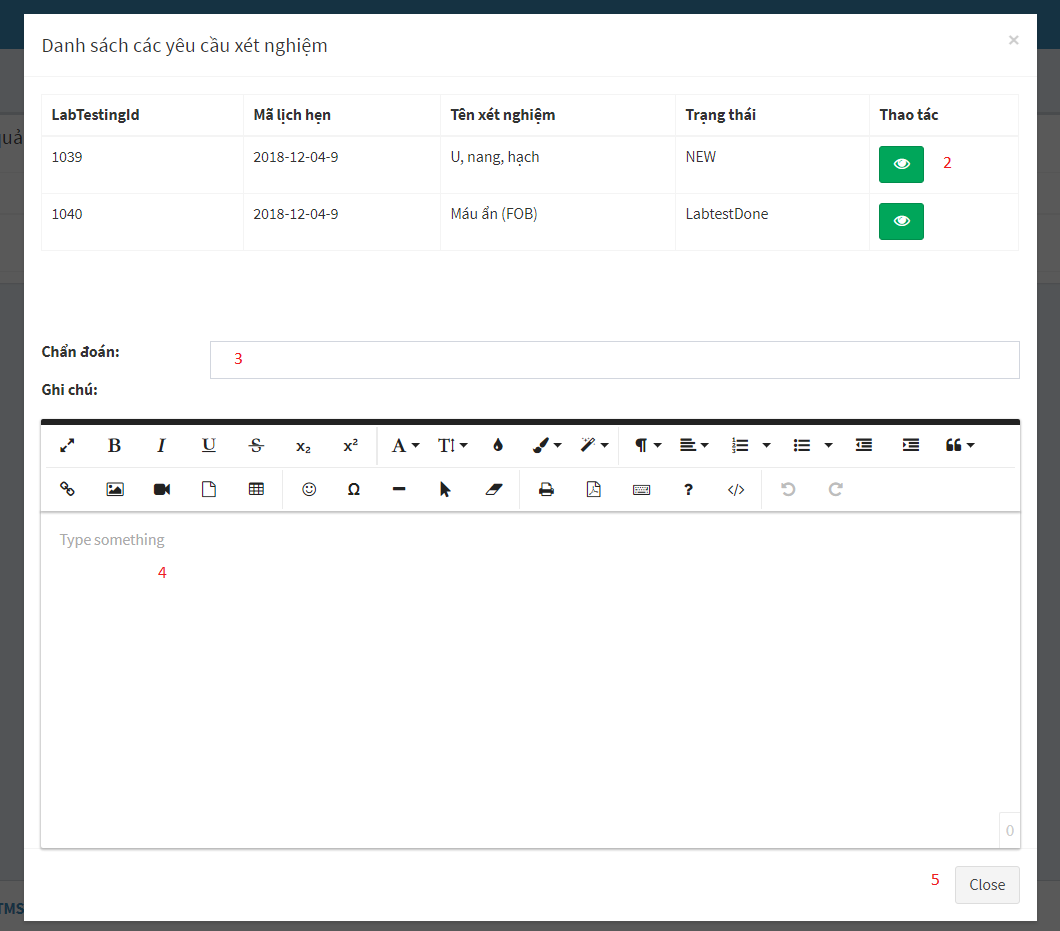


Figure 15 - Admin web application Guide <View Doctor>



Figure 16 - Admin web application Guide <View Doctor>

|  |  |
| --- | --- |
| **Step** | **Description** |
| 1 | Click on green button at “Thao tác” column to view testing result, write note and conclusion |
| 2 | Click on green button at “Thao tác” column to view details of testing result |
| 3 | Type text conclusion at textbox area |
| 4 | Write note (Advise for patient) at textbox area |
| 5 | Click on “Close” button cancel |
| 6 | After clicking on green button at “Thao tác” column to view details of testing result in step 2, you can request re-testing when you see something wrong about testing result |

Table 10 - Admin web application Guide <View Doctor>

### User web application

#### Login

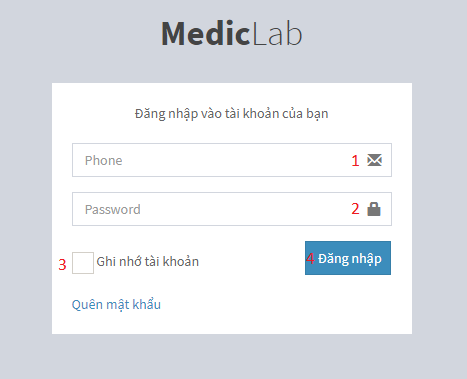


Figure 17 – User web application Guide <Login>

|  |  |
| --- | --- |
| **Step** | **Description** |
| 1 | Enter phone number |
| 2 | Enter password |
| 3 | Check “Ghi nhớ tài khoản”checkbox (optional) |
| 4 | Click on “Đăng nhập” button to sign in |

Table 11 – User web application Guide <Login>

#### Sign up

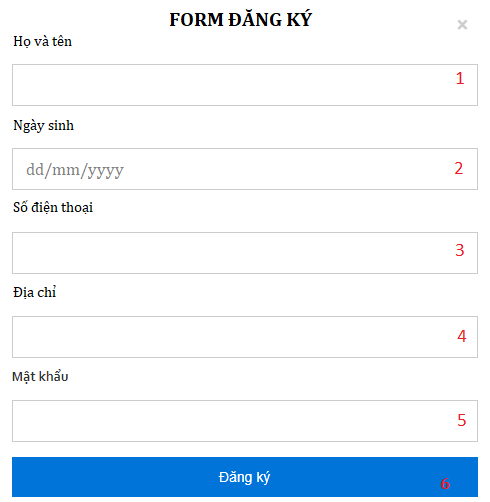


Figure 18 – User web application Guide <Sign up>

|  |  |
| --- | --- |
| **Step** | **Description** |
| 1 | Fill username into field: “Họ và tên”. |
| 2 | Pick birthdate from field: “Ngày sinh”. |
| 3 | Fill phone in field: “Số điện thoại”. |
| 4 | Fill full address in field: “Địa chỉ”. |
| 5 | Fill password in field: “Mật khẩu”. |
| 6 | Click on “Đăng ký” button to sign up. |

Table 12 – User web application Guide <Sign up>

#### Logout

Figure 19 - User web application Guide <Log out>

|  |  |
| --- | --- |
| **Step** | **Description** |
| 1 | Click on username on top right of the page. |
| 2 | Click on button “Đăng xuất ” to log out. |

Table 13 - User web application Guide <Log out>

#### Home page

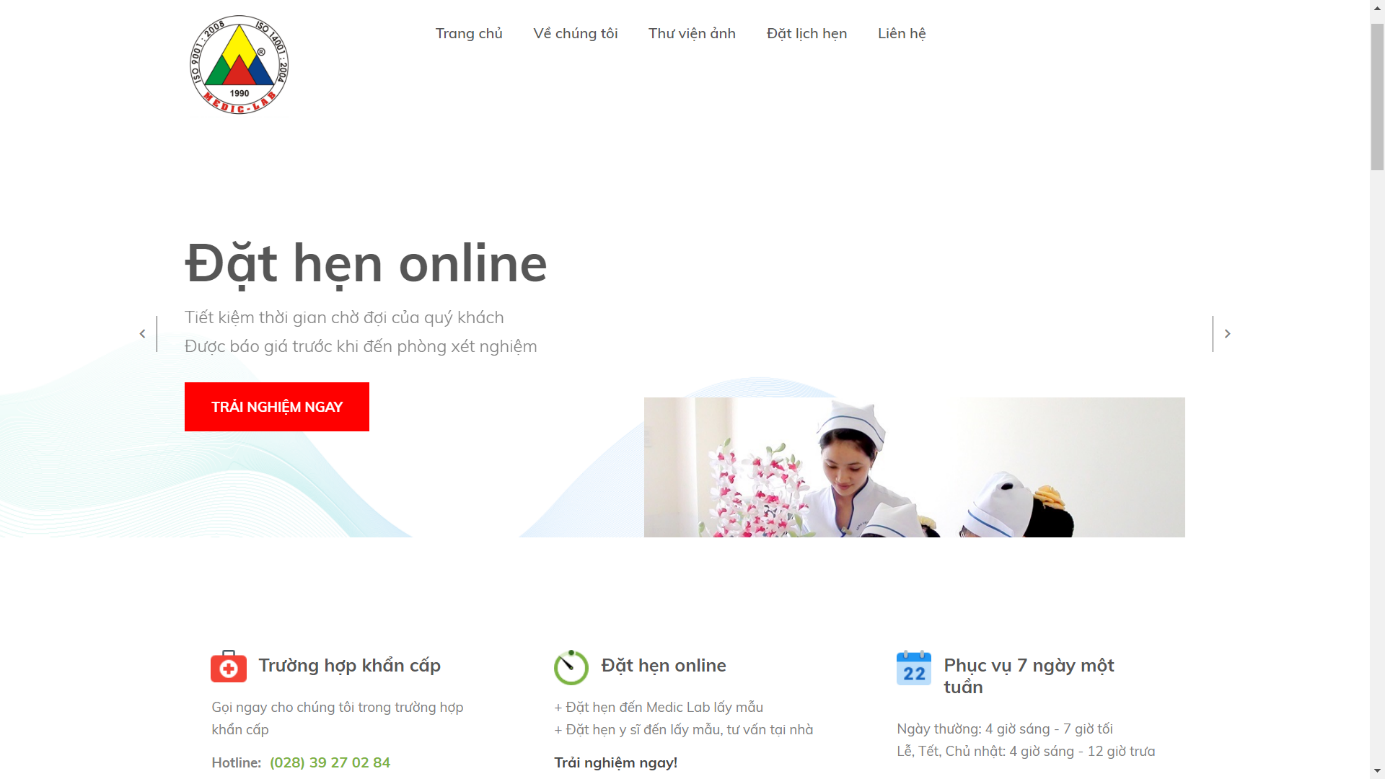


Figure 20 - User web application Guide <Home page>

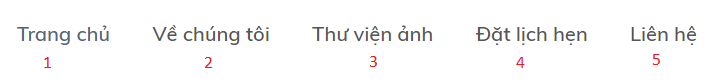


Figure 21 - User web application Guide <Home page - Menu bar and Categories>

|  |  |
| --- | --- |
| **Step** | **Description** |
| 1 | Click to navigate to “Trang chủ” to load Home page |
| 2 | Click to navigate to “Về chúng tôi” to view our information |
| 3 | Click to navigate to “Thư viện ảnh” to go to Photo Library Page |
| 4 | Click to navigate to “Đặt lịch hẹn” to book appointment |
| 5 | Click to navigate to “Liên hệ“ to view our contact |

Table 14 - User web application Guide <Home page>

#### View Book Appointment

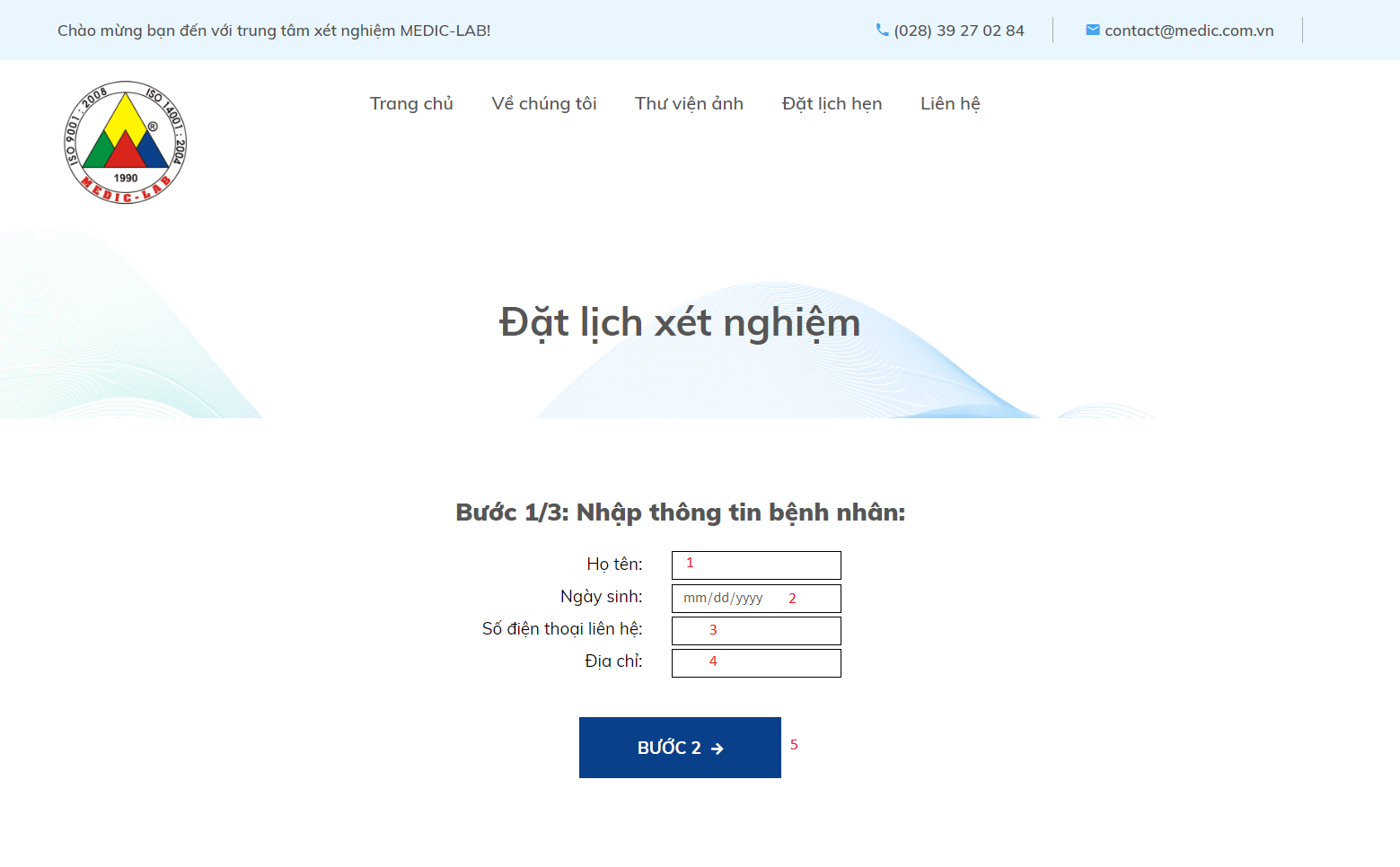


Figure 22 - User web application Guide <Book appointment>

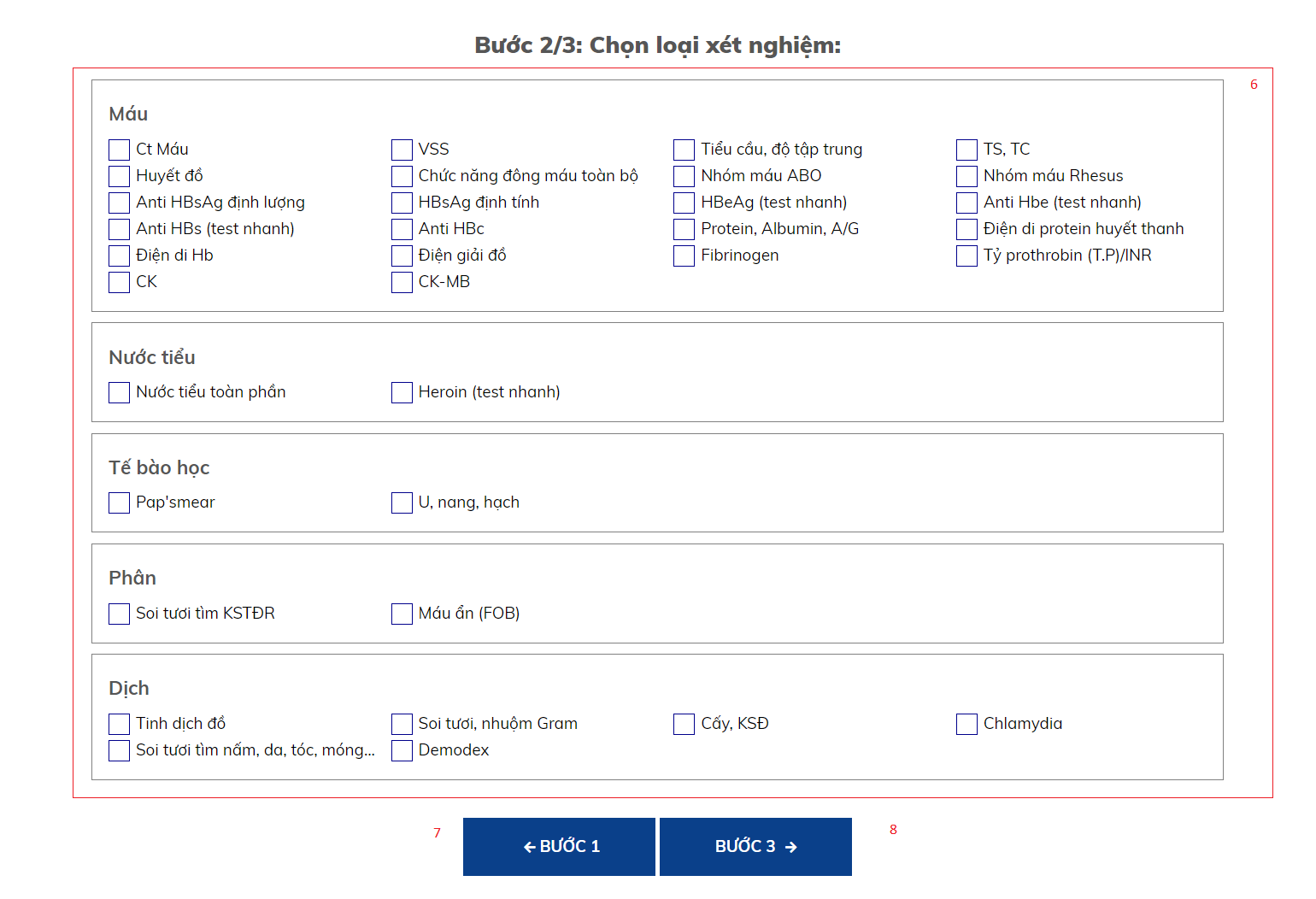


Figure 23 - User web application Guide <Book appointment>



Figure 24 - User web application Guide <Book appointment>

|  |  |
| --- | --- |
| **Step** | **Description** |
| 1 | Fill username into field: “Họ tên”. |
| 2 | Pick birthdate from field: “Ngày sinh”. |
| 3 | Fill phone in field: “Điện thoại liên hệ”. |
| 4 | Fill full address in field: “Địa chỉ”. |
| 5 | Click on “Bước 2” button to go to step 2 |
| 6 | Choose labtest which you want to test |
| 7 | Click on “Bước 1” button to go back to step 1 |
| 8 | Click on “Bước 3” button to go to step 3 |
| 9 | Choose appropriate time that you want to test |
| 10 | Choose appropriate time that you want to test |
| 11 | Click on “Bước 2” button to go back to step 2 |
| 12 | Click on “Đặt lịch” button book appointment |

Table 15 - User web application Guide < Submit Auction >

#### View list of Booked Appoinments

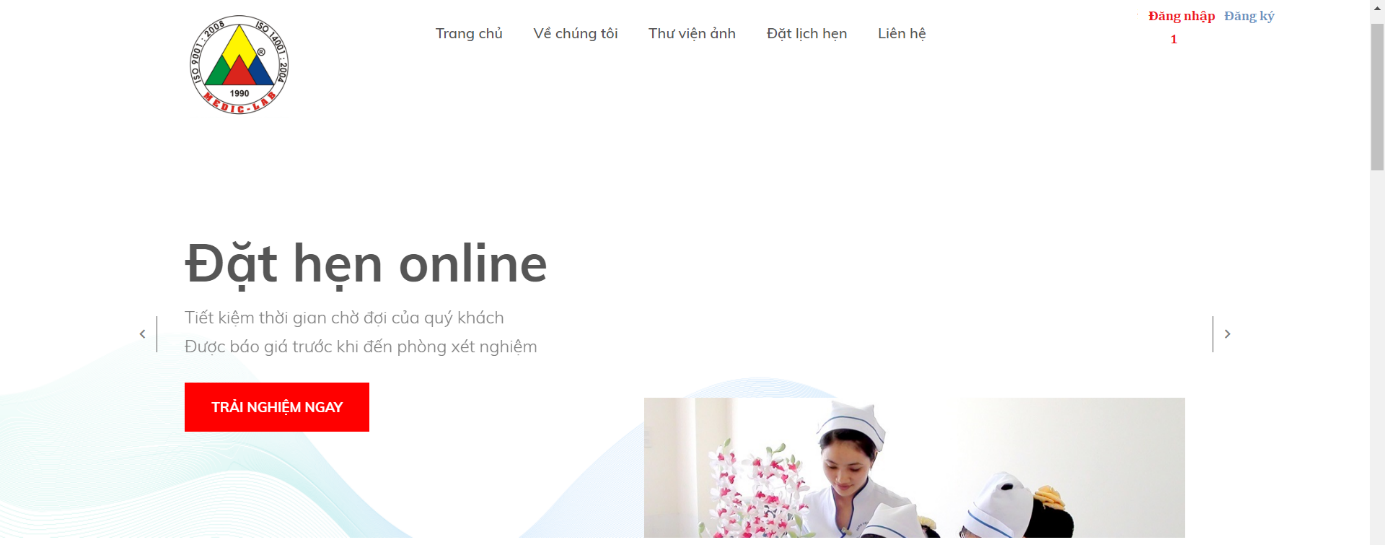


Figure 25 - User web application Guide <View list of Booked Appoinments>

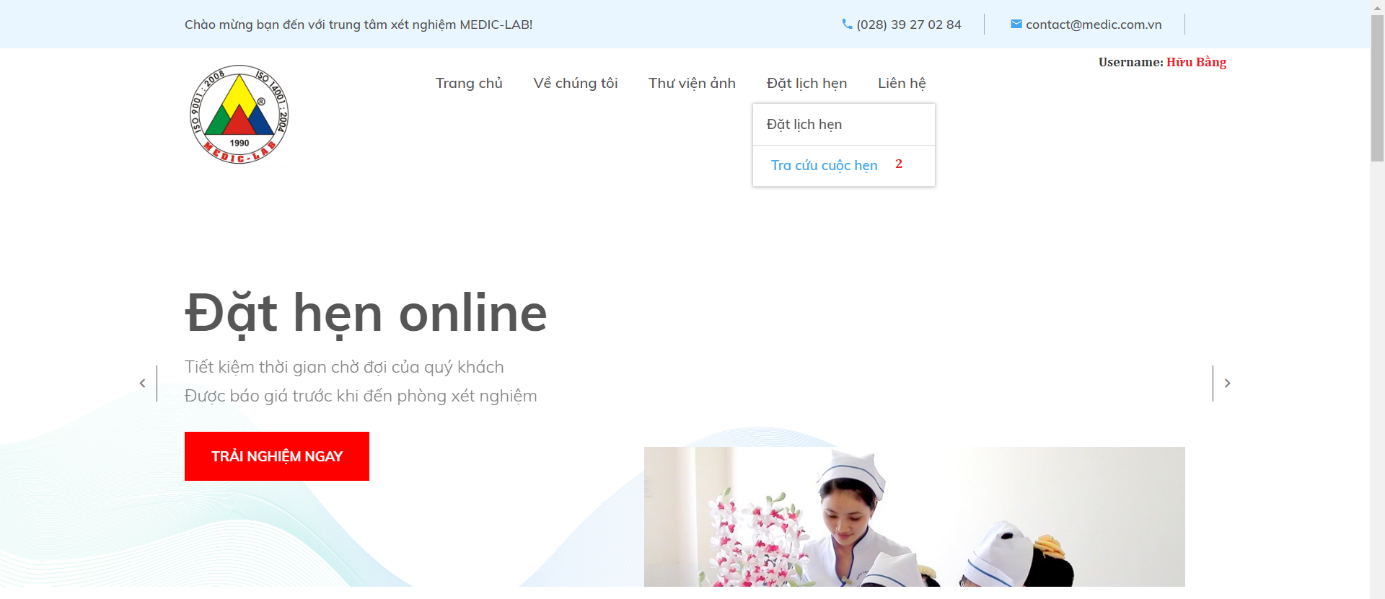


Figure 26 - User web application Guide <View list of Booked Appoinments>

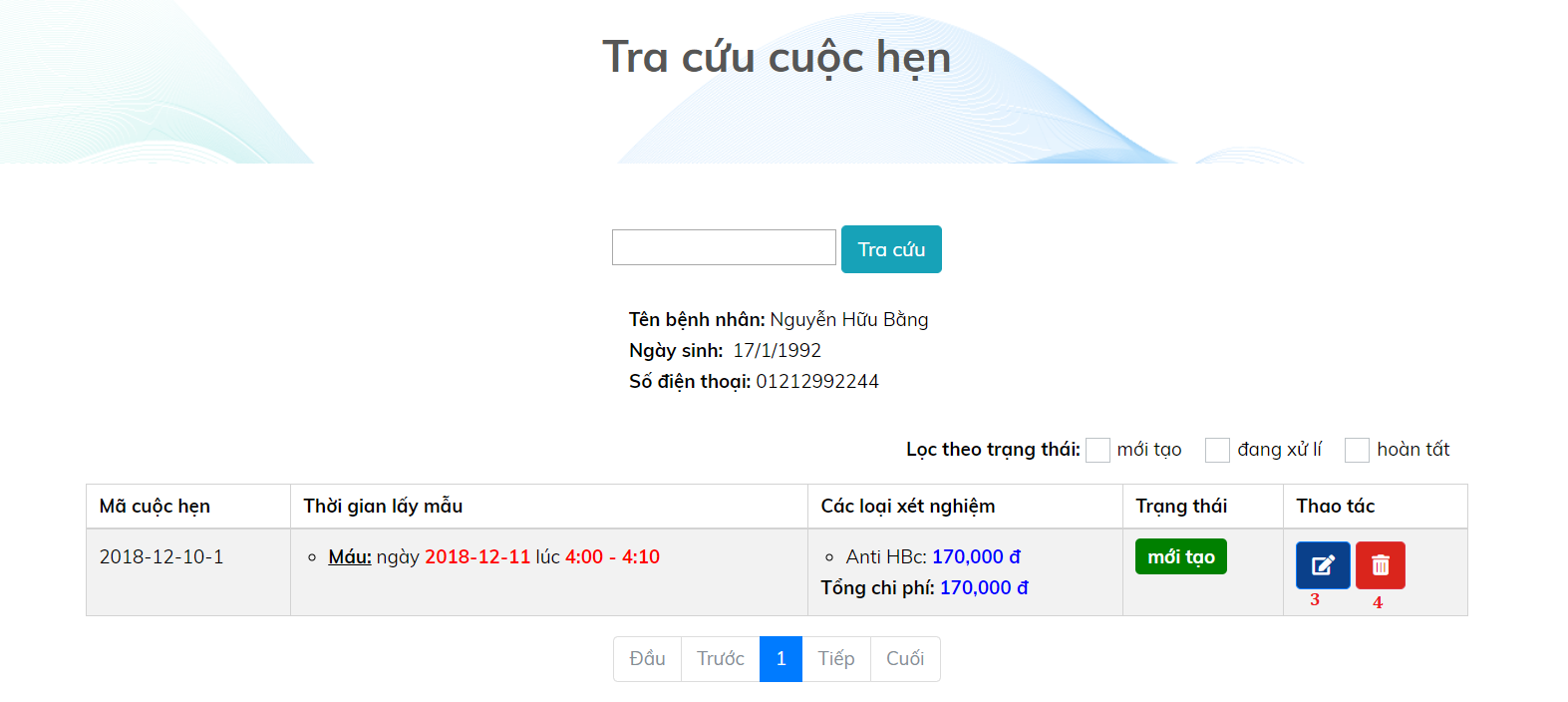


Figure 27 - User web application Guide <View list of Booked Appoinments>

|  |  |
| --- | --- |
| **Step** | **Description** |
| 1 | At the Home page, click “Đăng nhập” button to login into the system |
| 2 | After login, you can “Tra cứu cuộc hẹn” option in “Đặt lịch hẹn” at the Home page |
| 3 | At View Appointment page. You can click on blue button at “Thao tác” column to edit time, sample, labtest for your appointment |
| 4 | After clicking on “Tra cứu” button, you will go to View Appointment page. You can click on red button at “Thao tác” column to delete your appointment |

Table 16 - User web application Guide <View list of Booked Appoinments>

#### View Testing Result

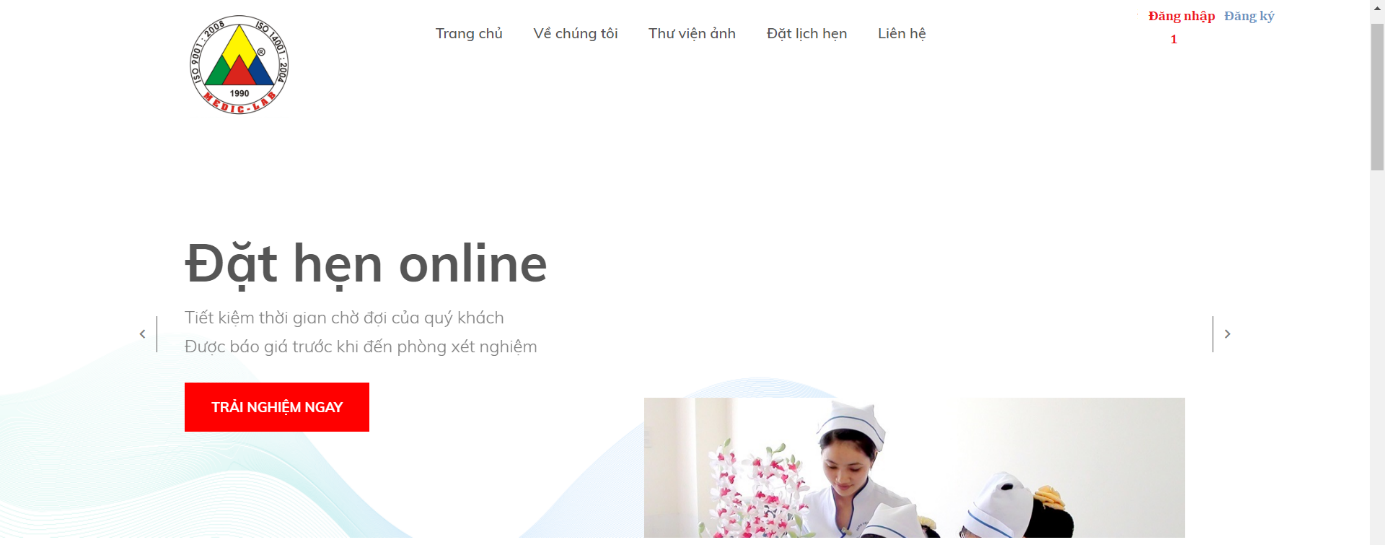


Figure 28 - User web application Guide <View Testing Result>

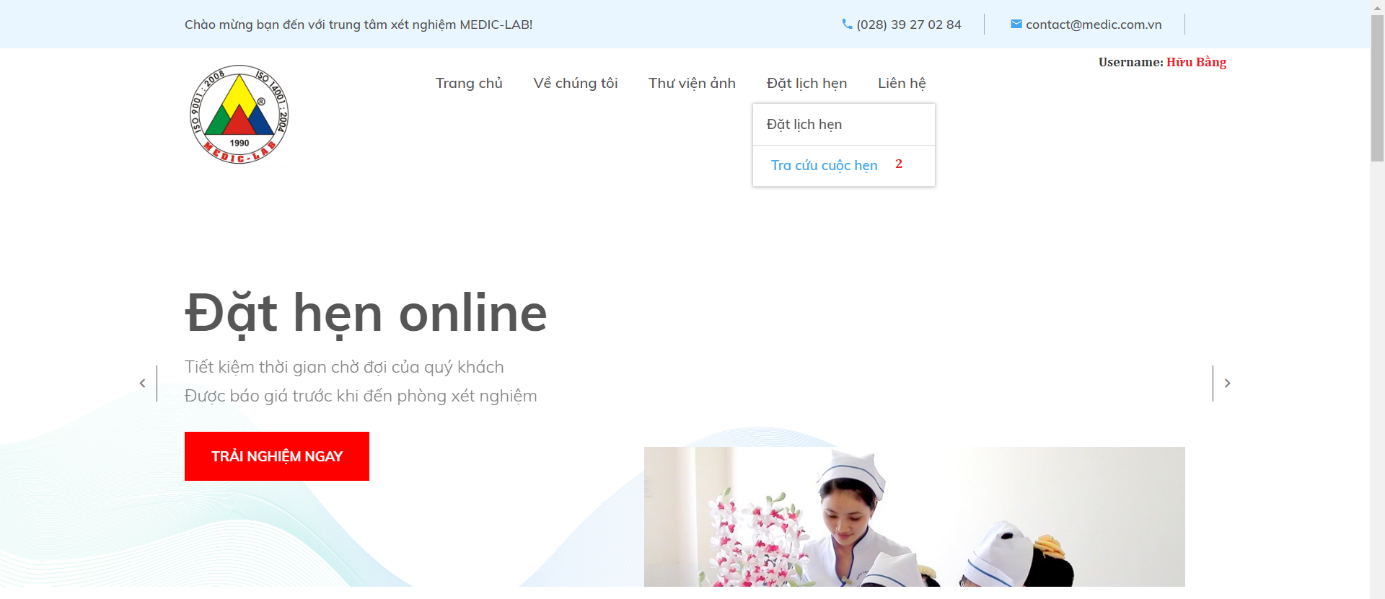


Figure 29 - User web application Guide <View Testing Result>

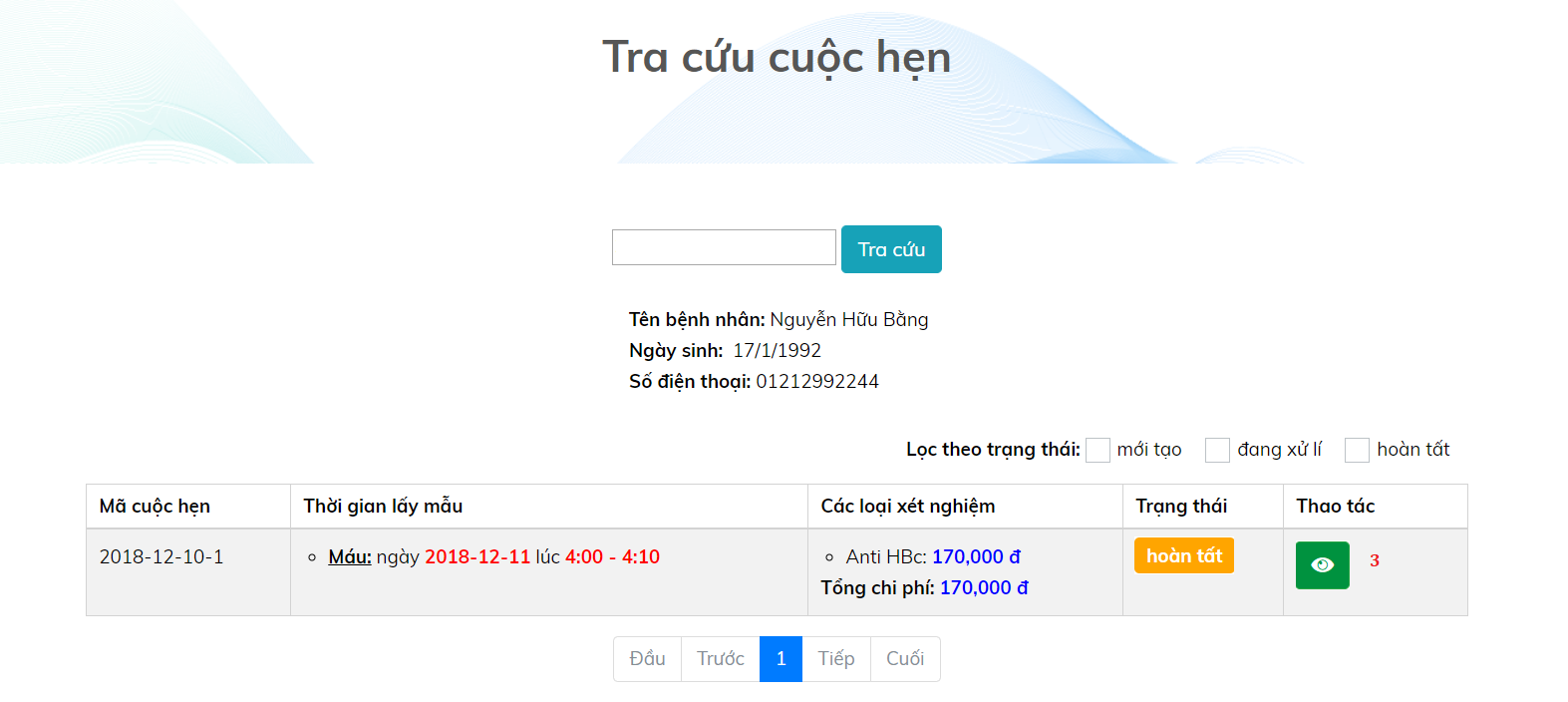
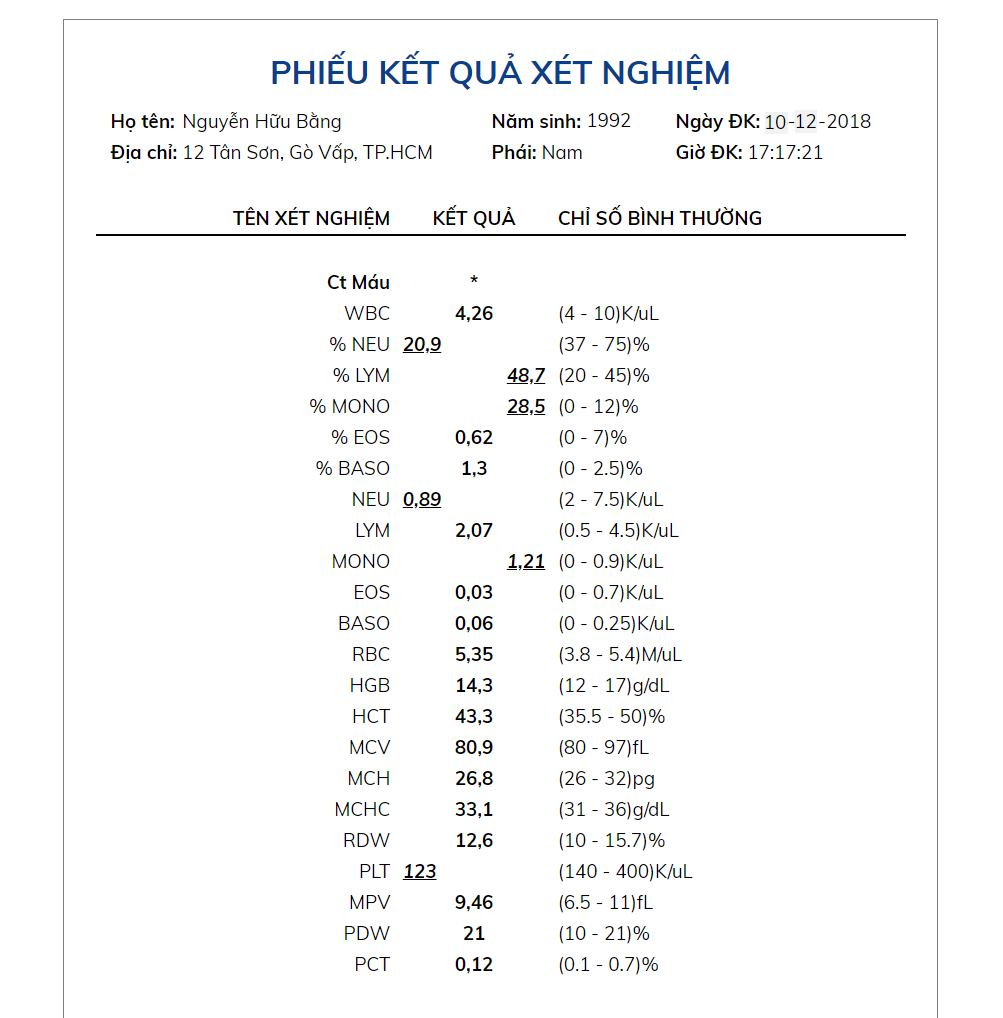


Figure 30 - User web application Guide <View Testing Result>



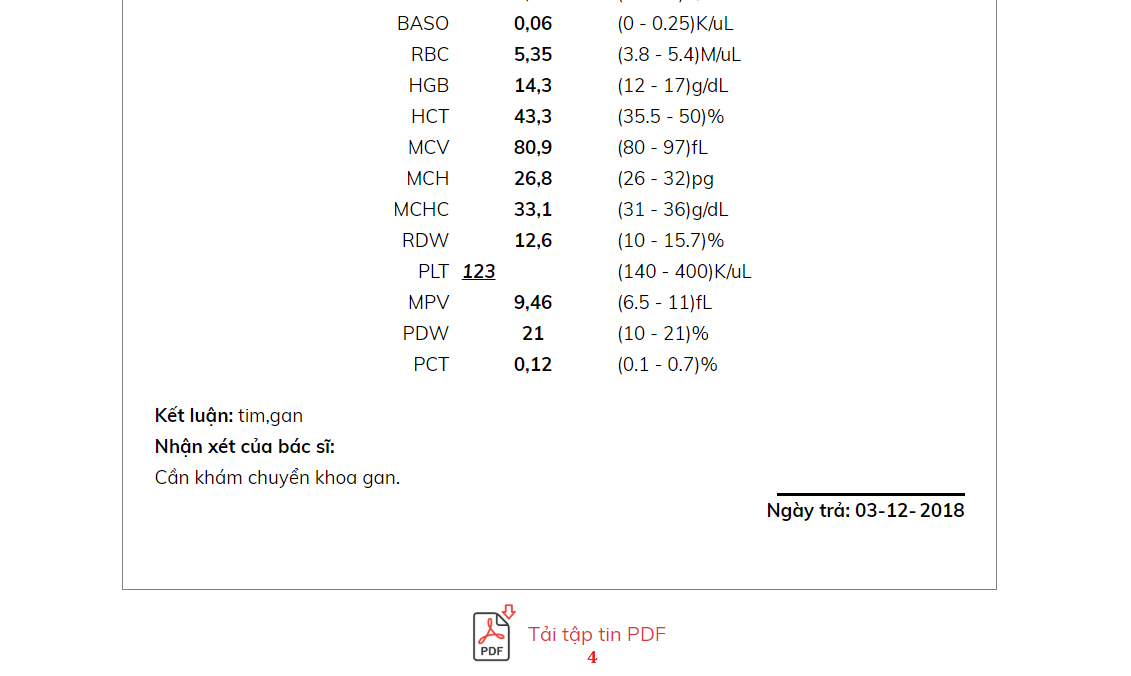


Figure 31 - User web application Guide <View Testing Result>

|  |  |
| --- | --- |
| **Step** | **Description** |
| 1 | At the Home page, click “Đăng nhập” button to login into the system |
| 2 | After login, you can “Tra cứu cuộc hẹn” option in “Đặt lịch hẹn” at the Home page |
| 3 | At View Appointment page. When status of appointment is “Hoàn tất”, you can click on green button at “Thao tác” column to view testing result |
| 4 | At the Result Appointment page, you can view details of testing result. If you want to download this form, you can click on “Tải tập tin PDF” button below the form |

Table 17 - User web application Guide <View Testing Result>

### Mobile application for all user

#### View Login Page



Figure 32 - User mobile application Guide <Login>

|  |  |
| --- | --- |
| **Step** | **Description** |
| 1 | Enter your phone |
| 2 | Enter your password |
| 3 | Click on “Đăng nhập” to login |
| 4 | Click on “Đăng kí tại đây’ to go to Register page |

Table 18 – User mobile application Guide <Login>

#### View Register Page

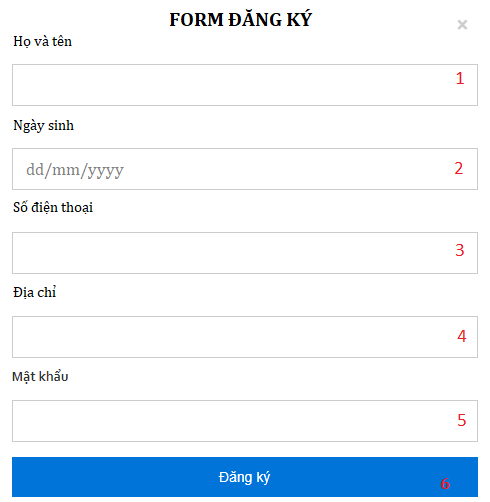


Figure 33 - User mobile application Guide <View Register>

|  |  |
| --- | --- |
| **Step** | **Description** |
| 1 | Enter your fullname |
| 2 | Pick your birthday |
| 3 | Enter your phone number |
| 4 | Enter your address |
| 5 | Enter your password |
| 6 | Click on “Đăng kí” to create new account |

Figure 19 - User mobile application Guide <View Register>

#### View Home Page

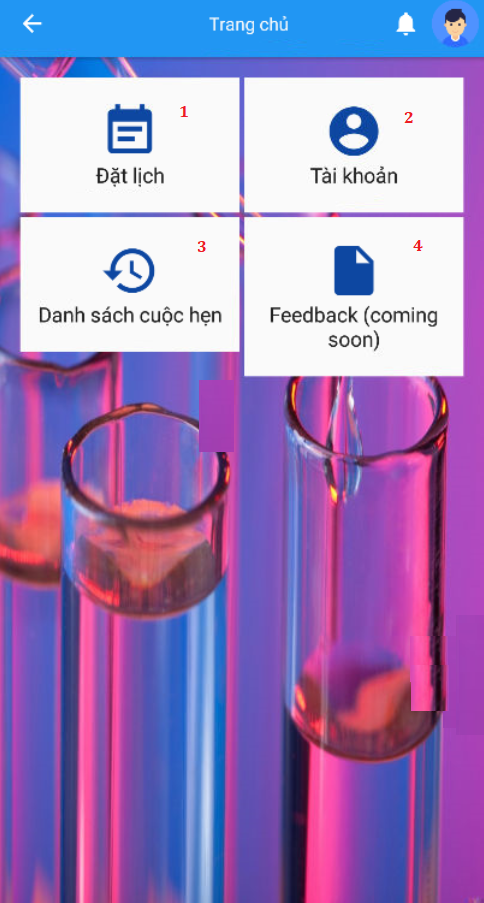


Figure 34 - User mobile application Guide <Home page>

|  |  |
| --- | --- |
| **Step** | **Description** |
| 1 | Click on “Đặt lịch” tab to book appointment |
| 2 | Click on “Tài khoản” tab to view or edit profile |
| 3 | Click on “Danh sách cuộc hẹn“ tab to view appointment history and testing result |
| 4 | Click on “Feedback” tab to write feedback (Coming soon) |

Table 20 – User mobile application Guide <Home page>

#### View Book Appointment Page

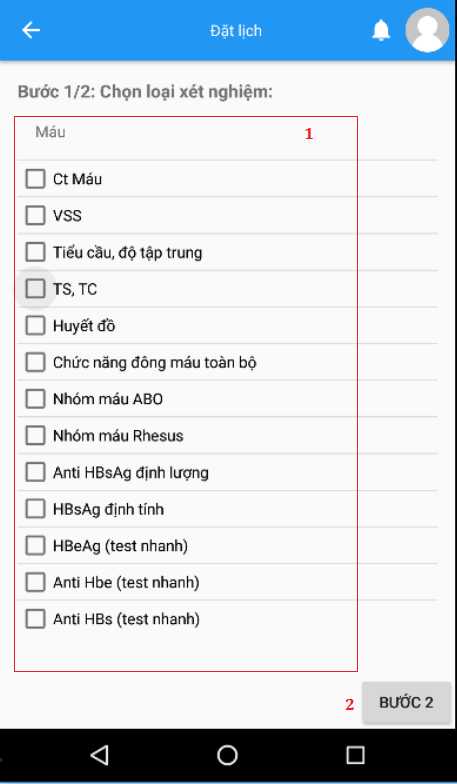


Figure 35 - User mobile application Guide <View Book Appointment>



Figure 36 - User mobile application Guide <View Book Appointment>

|  |  |
| --- | --- |
| **Step** | **Description** |
| 1 | After clicking “Đặt lịch” tab at Home page, choose labtest which you want to test |
| 2 | Click on “Bước 2” button to go to step 2 |
| 3 | Choose appropriate time that you want to test |
| 4 | Click on “Đặt lịch” button book appointment |

Table 21 – User mobile application Guide <View Book Appointment>

#### View Testing Result Page

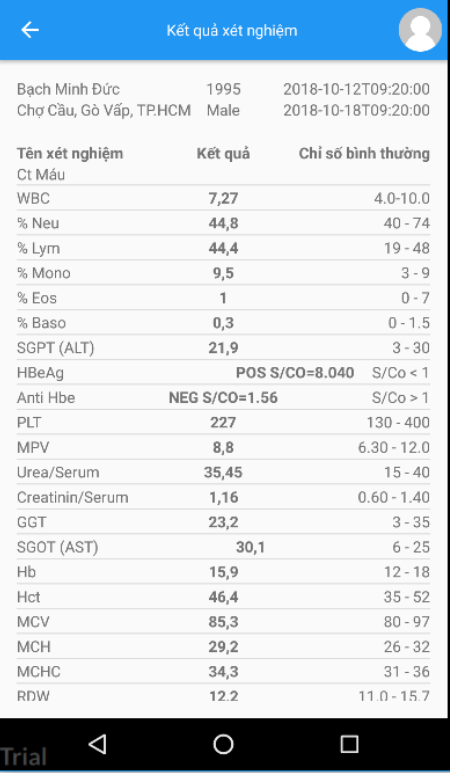


Figure 37 - User mobile application Guide <View Testing Result>

|  |  |
| --- | --- |
| **Step** | **Description** |
| 1 | After clicking “Kết quả xét nghiệm” tab at Home page, choose an appointment you want to view testing result |

Table 22 – User mobile application Guide <View Testing Result>