

General FLEX|CLINIC Management Software Solution

Version 2.5.0



Revision History

Date	Version	Description	Author
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1. Introduction

1.1 Purpose

Purpose of this document is to introduce and describe details of General Clinic Management Solfware System's functions which designed by Flexible Software Solution Joint Stock Company (FLEX Corp).

Screen shots which used in this document are from our official Software.

1.2 Technical Environment and Technical for Project

Programe language: java/struts/Ibatis framework.

Database: Mysql.

Server: *linux OR window*. Development Tool: *Eclipse*

2. Question and Strong points of Software

Nowadays, Management Software is no longer strange to Clinics. Managing patient's record and electronic record, patient billing, medical insurance, clinic finance, employee attendance record, in-patient, out-patient, clinic rooms and beds ... are extremely necessary for a Clinic where has professional management system to save time for diagnosis, getting for result, reports and statistical,...

2.1 For Doctor

- Doctor can find patient's history quickly and easily before making a dignostic result or treatment method.
- IDC 10 Code is stipulated by Ministry of Health, Doctor doesn't need remember 3000 IDC10 codes to make a dianogsis, just choose diagnosis then software automatically fill in IDC10 code as Ministry of Health's provision.
- Doctor writes out a prescription easier with electronic prescription system and by checking medicine allergy with patient's history automatically.
- Applying high technologies on hand-held equiptment, internist can give out treatment method, medical instruction or medicine right patient's bed
- Electronic record: access whole patient's record from A to Z quickly
- See patient's history of other departments quickly and conveniently at examination form.
- See surgery schedule before make a surgery appointment.

2.2 For Nurse

- Reporting patient' vital signs to Doctor quickly
- Managing medicine closely.
- Carrying out doctor's medical instruction exactly.
- Convenient in reporting medical instruction and patient care status.



- Convenient in managing medicine, used medical equiptment and other expenses.
- Easy to manage and sum up medicine which doctor gave during the day to make a medicine request to medical stock.

- ...

2.3 For Patient

- Help patient follow up diagnostic result at home without spending much time for getting result.
- Help patient save their diagnostic result without keeping hard copy as before.
- When Patient examines and follow-up examination at clinic, they don't need bring the previous test result.
- Returning result quickly from other departments such as paraclinical is necessary. Patient doesn't need go around getting paraclinical result. The result is informed to the attending Physician automatically and quickly as soon as having result.

2.4 Paraclinical Wards

- Out put automatically result from test machines or diagnosis pictures
- Convenient in printing out and give result to patient.
- Supporting collect results at one place that save patient's time going around getting results.

2.5 Operating Room

- Managing operating rooms easily.
- Followup and make an operating schedule exactly.
- Statictis patients before and after operation.

2.6 For Pharmacy

- Managing import, export, and in stock medincines easily.
- Managing supplier debt.
- Managing turnover of pharmacies and inpatient/outpatient department.
- ...

2.7 For Clinic

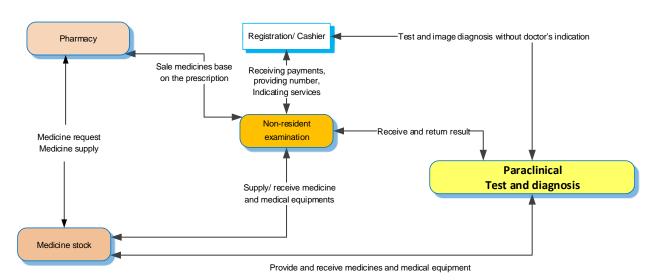
Support many branches of a Clinic seeing patient's record and history

- Managing expenses exactly
- Statistic of turnover
- Statistic of medical insurance
- Statistic of doctors' examination work
- Statistic and report of pharmacie sales
- Statistic of sold medicines base on doctor's prescriptions
- Statistic of operating work
- Employee attendance record

- ...

3. General Solution for Clinic Management

3.1 General diagram of clinic management model



- Ingredents of Solution are in the united system from data system to construction architectures.
- Designed by Modules is easy to deloy application. It can be deloyed separate modules but ensure it operating well.
- Due to this software uses 100% web application so just need deploy on server then using on client which installed IE, Firefox, Safari...
- Therefore, it's easy for installation and deployment.
- Open system can be intergarated with other management subsystems such as: Salary
 Human Resource Management, Sales management, accounting system (definition and communication depend on solution of production company and paties' support)

3.2 Solution Development Technology

All of subsystems of FLEX|CLINIC general solution are developed on the same of a general industry infrastructure standard:

- Developing system base on java web application, using struts and Ibatis SqlMap framework.
- Database system is Mysql 5.0 and able to change to Oracle or SQL Server easily.
- Support Unicode UTF-8
- Using MVC model

3.3 Strong points of Sytem

3.3.1 High technology

- FLEX|CLINIC Solution is built on high technology. This software is
 developed in java so it can run on all of OS. This helps meet the diverse and
 compatible with all existing hardware of the customer, this is a very big
 advantage of the product.
- Support Unicode UTF-8
- The whole system uses AJAX so it runs not much different from the system which was developed on Windows Desktop Application.
- The application of Ajax technology is to run fast and stable, the user doesn't need wait long to load the entire web page as usual.

3.3.2 Rational organization

- This is the solution for many levels of management, consistent with the size of medium and large clinics, clinics. The division of an organization are determined rationally, divided into modules for easy organization development
- Developed on the separate modules but it has an unified database system organization so it can meet not only the clinic but also pharmaceutical company or Pharmacy

3.3.3 Nice and friendly interface

• The screen is designed simply, easy to input data.

3.3.4 Open and flexible feature

FLEX|CLINIC Solution provides many options in order that the user can customize program in accordance with their mode of operation. Users can define details of modes such as revenues and expenditures, export, import, document type, prefix of the bill.

3.3.5 High Heritability

To help the processor running faster, the solution is built by inheritance modules and automatic processing. Data and reports can be exported to different types of files, easily connect to other systems.

3.3.6 Multi-user

The system was designed, built to utilize network systems maximum. With a powerful server, system has unlimited users (support hundreds of users simultaneously).



3.3.7 Software development

Software development is controlled by a process very closely. The features are used in solftware surveyed and studied carefully. Designing and programming functions are implemented synchronously based on the assignment and coordination between departments.

In addition, each of program's features is tested quality strictly and meticulously before put it in use and to ensure the highest stability during the using time.

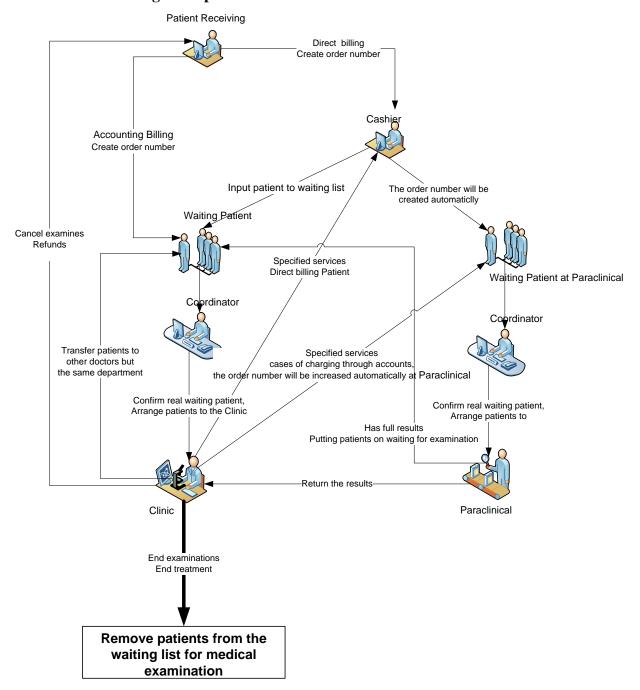
4. Detail Functions

FLEX|CLINIC management software includes 10 modules as below:

- Reception and cash collection module
- Coordinator module
- Outpatients module
- Nursing module.
- Paraclinical module.
- Operating room module.
- Drug Storage module.
- Pharmacy.
- Attendance record.

Details of modules are presented as below:

4.1 Procedure of surgical department



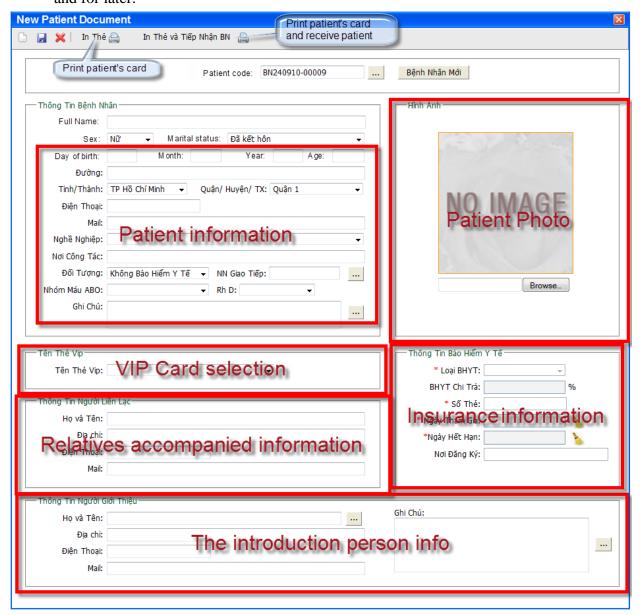
Above is procedure of receiving out patient and cashier and outpatient module. Receive an outpatient has to follow a certain process on the chart.

4.2 Billing Module:

4.2.1 Create a new patient record

Patient registers at reception. After checking system, if cannot find this patient's record, create a record for new patient.

Every patient has only one code which used for during the examination process and for later.



The patient attributes include:

- Name of patient
- Age
- Sex
- Address
- Having health insurance or not
- Email.
- Occupation.
- Note.

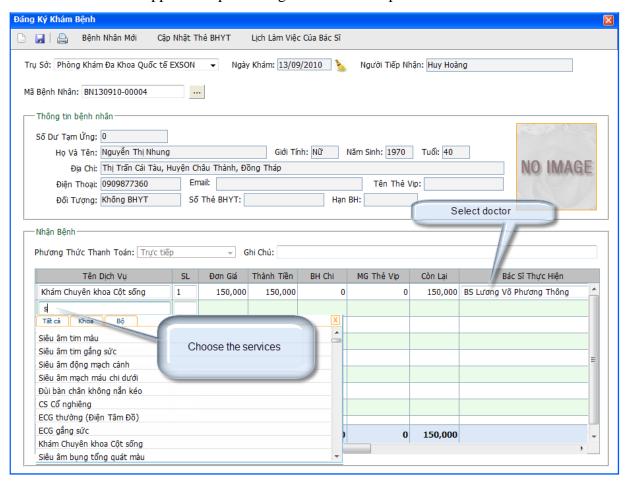


- VIP Card.
- Relatives accompanied
- The introduction person
-

Printing a card for patient then she/he can use it for all later medical examinations.

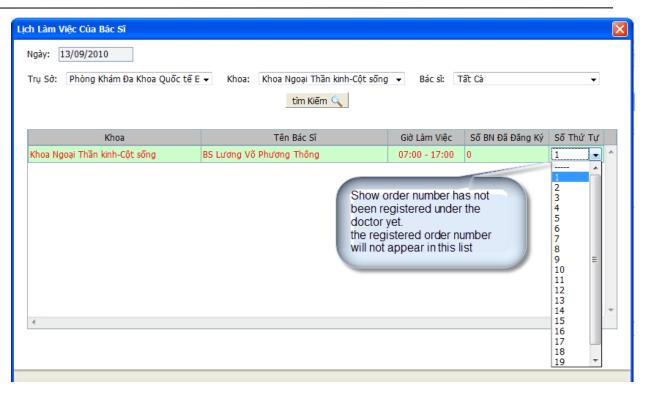
4.2.2 Patient registration:

This feature is applied for patient registered over the phone or SMS.



Including below features:

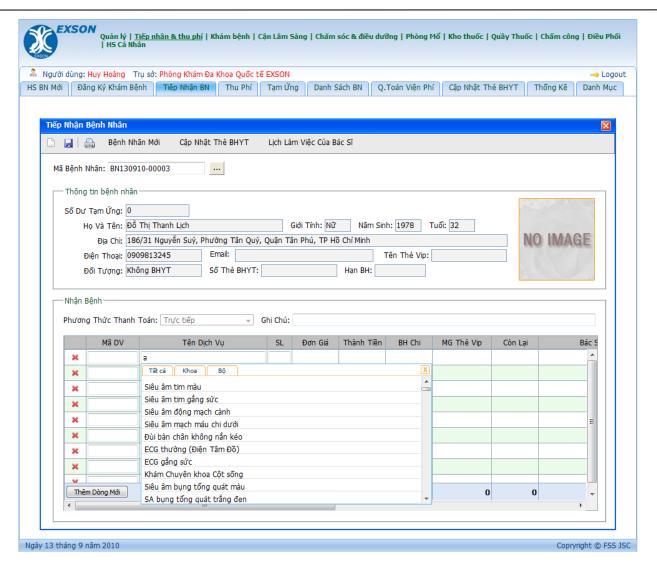
- Register a branch of a clinic
- Register examination date
- Support insurance card and discount for VIP automatically
- Choose your doctor
- Select the number examined by doctors
- Choose time to visit correlative the order number
- Selecte a priority order
- Supports viewing schedules of doctors.



- Support the number selection quickly and provide information to patients by phone immediately

4.2.3 Receiving Patients

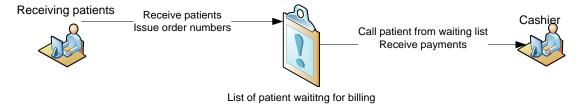
Similar to the patient registration screen, this screen is used when patients register derectly at registration desk.



Functions of the receiving form:

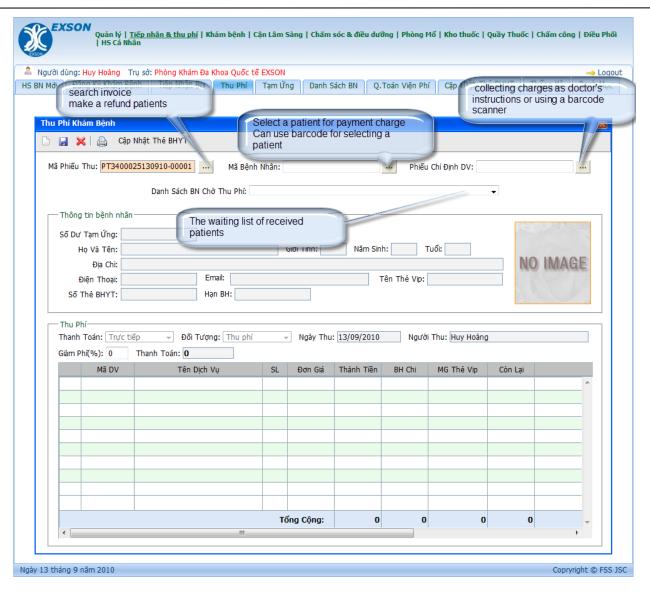
- Register at branch where user log in
- Choose service quickly
- Support insurance card and discount for VIP automatically
- Choose your doctor
- Select the number examined by doctors
- Choose time to visit correlative the order number
- Selecte a priority order number
- Supports viewing schedule of doctors.

4.2.4 Registration and Billing Process



4.2.5 Receiving Payments

- Patients after they are received and get the order number will be included in a waiting list for billing.
- Patients with prior registration will appear on the waiting list when the date comes up.
 - Cashiers base on the waiting list to call for discharge
- Patients who haven't paid will be maintained by end of day
- Patients do not pay fees when they are called will be saved until the end of day
- Programs are automatically deleted the received or registered patients without examination if they don't pay fees on their registered date.



Main features:

- Receipt code is generated automatically base on cashier
- Each cashier has a separate number increased from 1 -> n in a day.
- To collect the receipt of a patient by selecting a patient from the waiting list.
- Receive a payment base on doctor's service instruction
- By selecting patient in the list of patients, the program automatically searches the patients on the waiting lists include the received patient list and the dotor's service instructions.
- Support barcode scanner to receive patients quickly based on the patient card or any other papers have printed barcode of indentification patients.
- Printing bill



4.2.6 Advance payment

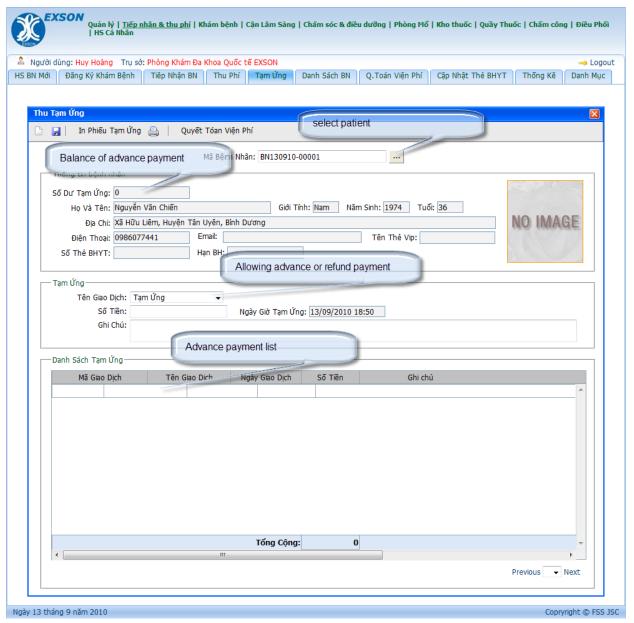
Advance Screen for inpatient and patients who had the account in the clinic.

Advance help patients allowed doing all services without paying fee and reducing waiting time.

Patients before entering inpatient or outpatient visit will pay an amount prior to the examination

Inpatient must pay an advance

OutPatient is not compulsory to pay advance.



Main functions:

- Transaction code is generated automatically



- Each cashier has a separate number increased from 1 -> n in a day
- Allow complete or advance applications
- Print an advance form
- Print a discharge form
- Support barcode scanner to quickly receive patients based on the patient card or any other papers have printed patient's identification barcode.

4.2.7 Hospital fee Settlement

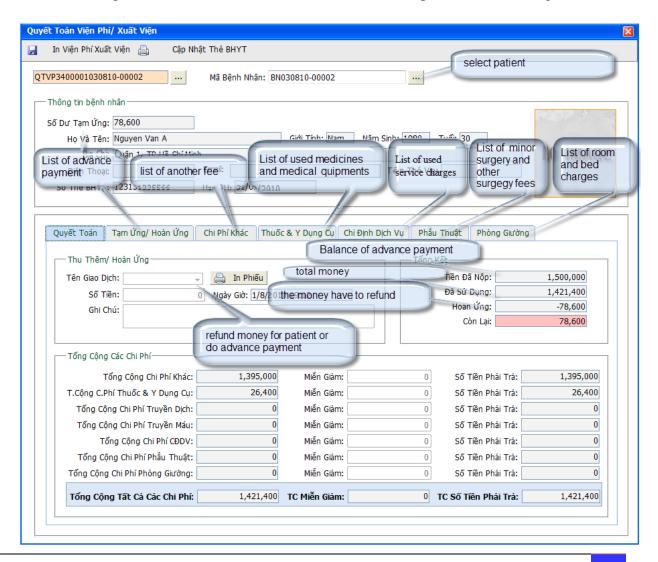
Settlement form for Outpatient and Inpatient.

If the payments will be made through the accounts, the clinic fee will be settled after the patients are diagnosed or discharged.

For outpatients, the clinic fee is settled after being consulted and/or diagnosed.

These fees might include minor surgery and other fees such as precripstion drugs or medical supplies being used during consultation and/or diagnosis, etc.

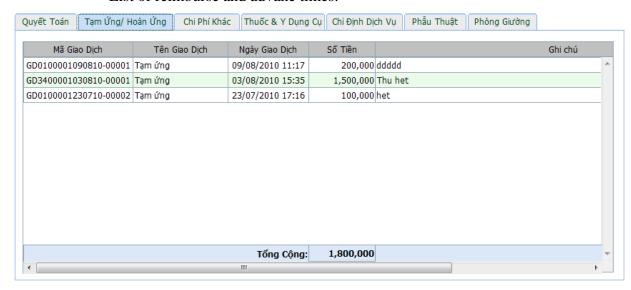
For inpatients, the hosital fee will be settled when the patients are discharged.



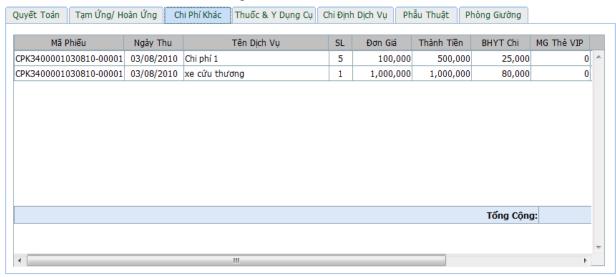


Main functions:

- Discharge code is generated automatically
- Each cashier has a separate increasing number increased from 1 -> n in one day
- Support reimbursement and advance
- Printing advance form
- Print reimburse form
- Support for barcode scanner to receive patients quickly based on the patient card or any other papers have printed patient barcode
- List of reimburse and advane times:

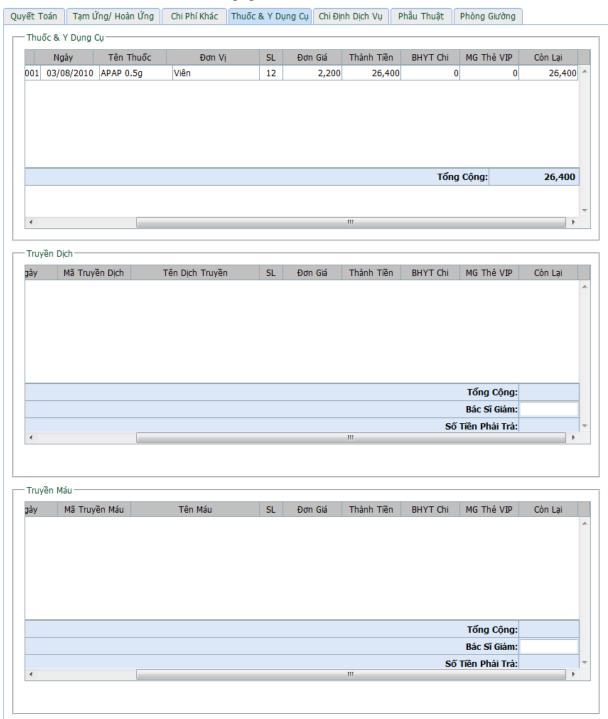


- List of used other charges:

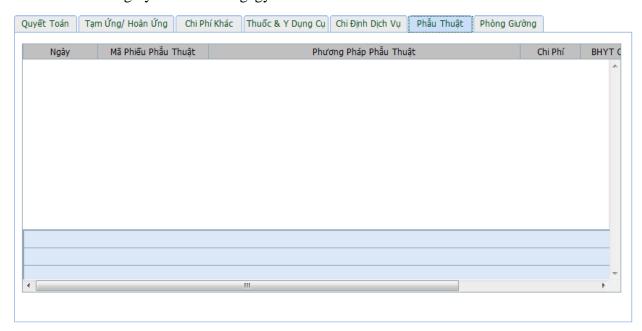




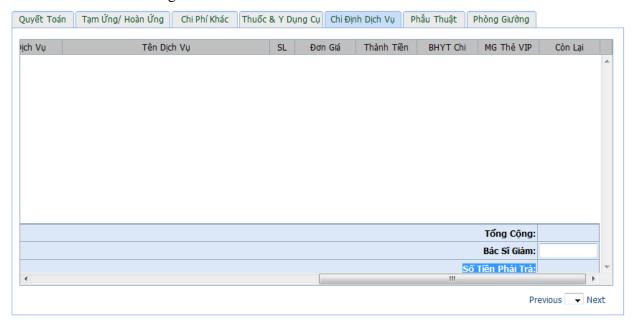
- List of used medicines and medical equipments



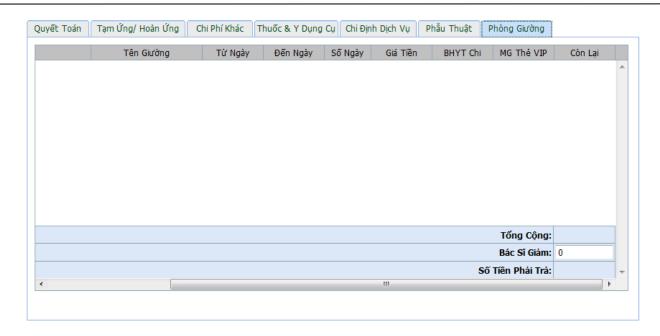
- List of minor surgery and other surgegy fees



- List of used service charges

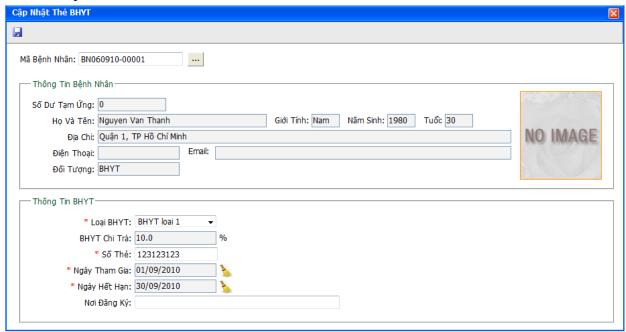


- List of room and bed charges



4.2.8 Updating medical insurance

Update medical insurance card's valid time for new Patient.



At present, Vietnam has many kinds of insurance; each of them has claim percentage different.

- Support for each type of insurance
- Manage expired date
- Automatically identify patient who updated medical insurance in system

- Automatically counting claim for patient base on type of insurance.

4.2.9 Reception and cashier module

- List of services
- List of service group
- List of occupations
- List of promotions for VIP

4.2.10 Report

- Reporting invoices in details
- Reporting revenue
- Total up patients on:
 - Doctors, date, time.
 - Departments
 - Details of patients

4.3 Coordination module

Coordination is very important for a large clinic. Coordinators take responsibility to guide patients to right service place and to service that has less waiting patients than others and balance the number of waiting patiens. Incase

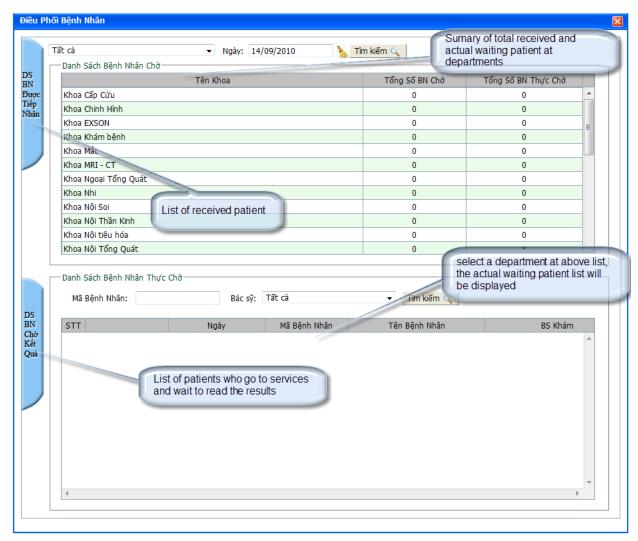
Patients wait in clinics are very crowded, so it might happen a case that patient is not available when their number is up. To advoice this, the program split into 2 concepts "The received patient" (paid service fee) and "The actual waiting patient" (who is waiting for in front of a consulting room)

Coordination helps doctor aware the number of actual waiting patients to more active in work.

Coordinator can make appointment with any Doctors as patient's request; make a schedule for Doctors.

4.3.1 Coordinating patients

Each coordinator only manages and coordinates in certain departments. This is decided and assigned by Suppervisor.



Functions of this form include:

- List of a waiting patients and an actual waiting patients at Departments:
 - Help coordinator see the general list of all of waiting patients at departments to coordinating easily. This is very useful.
 - See the waiting list in any day.
 - Choose one department to follow up.
- List of an actual waiting patient list
 - Details of actual waiting list of a selected department.
 - Remove patient out of the actual waiting patient list, this is necessary for the doctor know how many patients is actual waiting.
- List of received patients.

This is a list of received patients in day and charged fee, the patients didn't charged fee will not display in this list

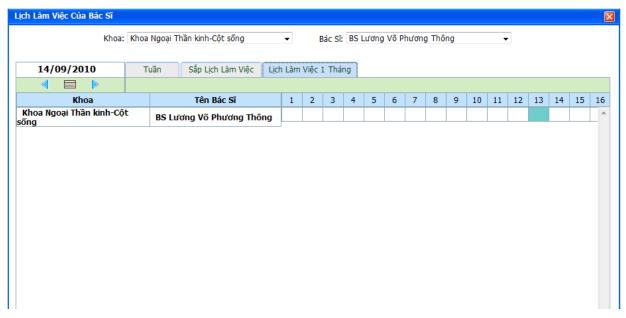


- Can choose the patients who were received at the last days (the patients charged fee but couldn't come to clinic because of private reason) to confirm them to become actual waiting patients.
- Supporting transfers doctor.
- Confirm actual waiting for patients.
- List of patients who go to services and wait to read the results.



4.3.2 Doctor's working schedule

Base on this form, coordinator can make appointments for Doctors.



4.3.3 Coordinating assignment

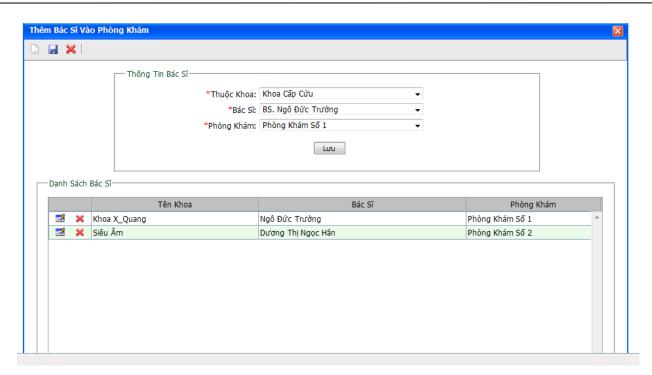
Administrator will decentralize to Coordination Suppervisor who will assign coordinators to departments.



- Select department, coordinator
- Select department to show coordinator who work for the selected department.
- Each coordinator can work at some assigned departments

4.3.4 Adding a doctor to a consulting room

The program supports the outpatient ward base on examination room. Adding a doctor to a consulting room is nessessary. Coordination will know which room doctor is working in when patients request doctor for them.



4.3.5 List of examination room

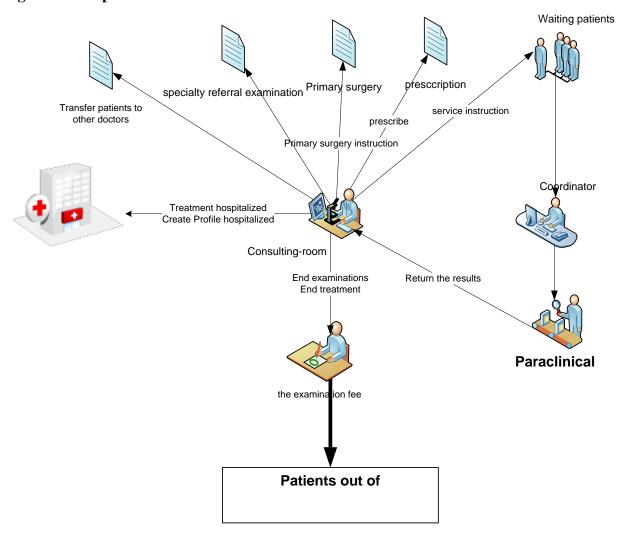
List of all of examination rooms of a clinic.

4.4 Outpatient module

Main function Forms:

- Outpatient form: used for Outpatient Doctors, record and update information for outpatient, each department has a separate document system.
- Outpatient care include functions: outpatient vitals sign, image diagnosis result, minor surgery report, filling examination result
- Outpatient medicine store: medicine management; each department has a separate store; Store supplies medicine based on requests only.
- Fees after examination:
 - o Minor surgery fee, medicine
 - Other fees except medicine and medical equipment fees.
- Other lists and reports...

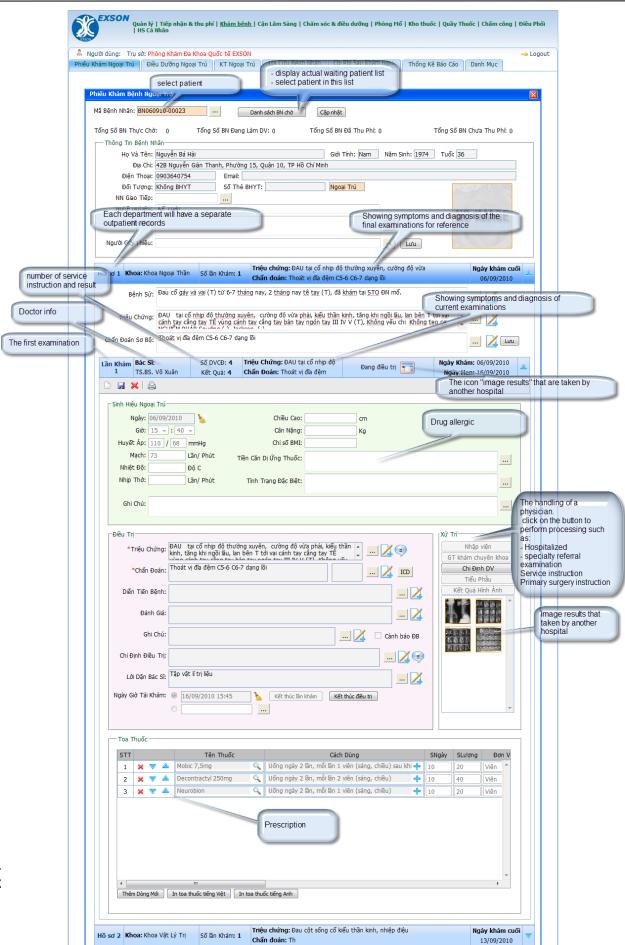
4.4.1 Diagram of Outpatient Module



4.4.2 Outpatient form

Outpatient form is designed more professional, it helps Doctor has a general look patient's detail record easily by a mouse click or rolling mouse.

- Support to see the record of examination times in one department
- See times of examination in other departments
- Give a prompt look any examination.
- Give a prompt look any prescription.
- Convinent to see the result of diagnosis image.
- Supported by an e-prescription and check allerry automatically.
- Manage the waiting patients
- ...

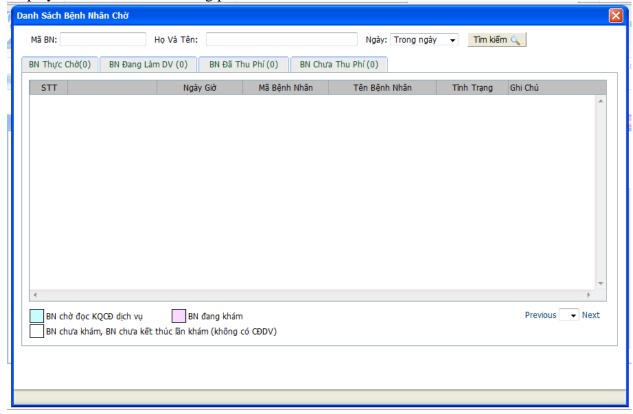




- Display all outpatient records of patient.
- At the header of records will show the summary history of patient such as prescription, symptom, diagnosis,.. Helping for the doctor can overview history of patient quickly.
- Support many doctor can edit on an examination's time.
- The diagnosis of doctor is managed, the doctor can be edited the diagnosis that he created but can't edit the diagnosis of other doctor.
- Allow comment to diagnosis of doctor. Just the doctor have comment permission can do this.
- Prescription, support print into 2 languages: Vietnamese and English.
- Orther functions such as: list of waiting patient, hospitalized, service instruction, specialty referral examination, image results as below:

4.4.2.1 Actual waiting patient list.

Display the list of actual waiting patient.



The patient status will be displayed in private color; base on this, doctor can know the kind of patient will examinated.

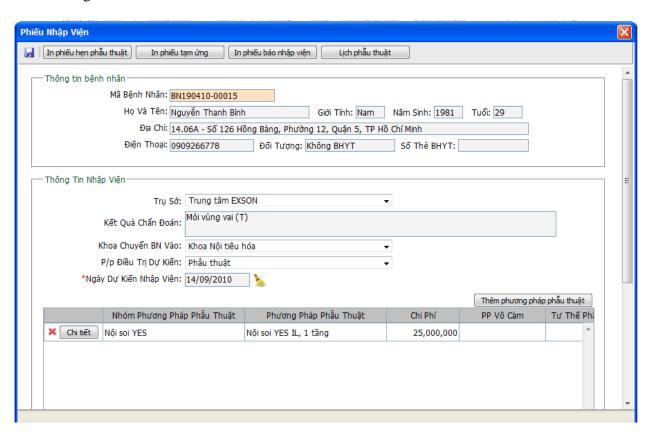
The list is just show the patients that is registered base on login doctor. The doctor can't see the patient of another doctors.

Support transfer the patient to orther doctors.

4.4.2.2 Hospitalized.

This is the most important form; this is the connection of outpatient and inpatient. At this form, the doctor can give hospitalized instruction. Create inpatient records,....

The hospitalized records are just able to create from outpatient form, in case emergency is also using this form.



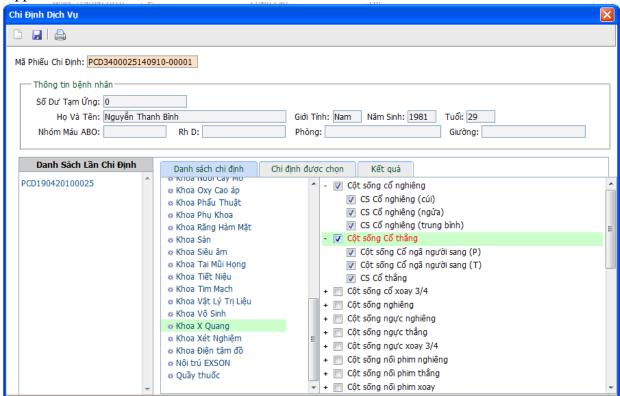
The main functions:

- Allow create the hospitalized records in any headquarter.
- Allow choose the department of selected headquarter.
- Select a date scheduled hospitalization
- Select method of treatment
- Select method of surgery planned
- Generating hospitalized number
- Creating case record document code
- Print promissory surgery report
- Print advance payment report
- Print hospitalization document.



4.4.2.3 Service instruction form.

Support select service for instruction.

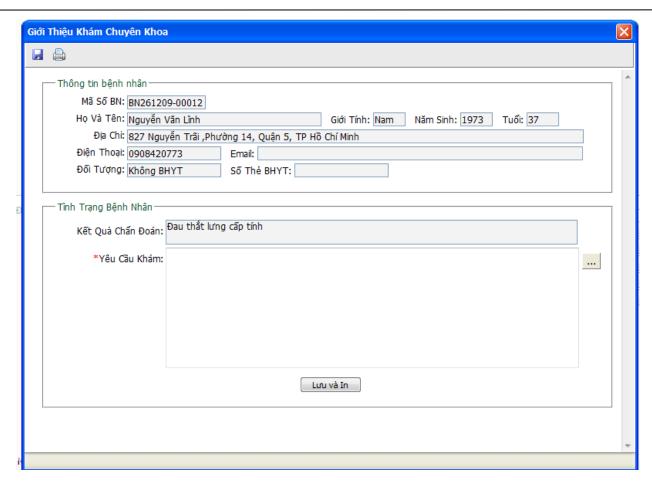


The Main functions:

- Department list
- Selected service list
- The results return list
- Print service instruction report.

4.4.2.4 Specialty referral examination form.

The doctor instructs a service that can't do in clinic, the doctor is use this form for introducing to another clinic to do that.

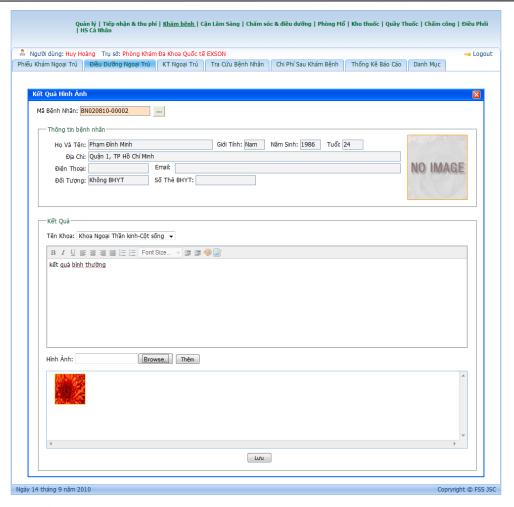


The main functions:

- Create specialty referral examination.
- print

4.4.2.5 The image results

Patients can take the examinations resulting image that have examined from other clinics, this screen allows the nursing to type the results as well as images on examinations.



4.4.3 Outpatient Nursing Module.

The module for outpatient nursing includes functions as below:

- Input vital signs
- Input imaging result.
- Input the specialty referral examination result
- Input primary surgery result.

4.4.4 Outpatient Drug Store Module.

Manage drug in outpatient department includes functions as below:

- Propose drugs
- Declare used drugs
- Return drug
- Statistical summation drugs
- Inventory report
- Expired date report
- Selling drug base on patient report
- Statistical other fee.

4.4.5 The examination costs.

Support input some fee while examination such as used drugs, medical tool, service,

primary surgery fee and other fees,...

4.4.6 Category

- Work schedule list.
- Primary surgery method list.
- Primary surgery method fee list.
- Primary surgery method fee name.
- Orther fee.
- Vip card for orther fee.
- Anaethesia method.
- Primary sugery posture.

4.5 Nurse Module.

Nursing module includes functions as below:

- Treatment instruction of doctor.
 - The list of treatment instruction not realize and realize of doctor, the nursing can search the not realize treatment in a day.
- Patient Care.

Nurse report patient's situation and treatment instruction report:

- patient's situation
- Caring situation
- Given the patient drink drug
- Instillation's situation
- Intravenous(Blood) infusion situation
- Preparing surgery
- Do the service instruction
- Make procedure leaving clinic.
- Declare cost of medical equipment, drugs, fluids, blood and other costs.
- Manage Room and bed.
- Vital signs.
- Sum up drugs.
- The drugs store
 - Propose drugs
 - Declare used drugs
 - Return drug
 - Statistical summation drugs
 - Inventory report
 - Expired date report
 - Selling drug base on patient report
- Category:
 - Room.
 - Bed.
 - Room and Bed fee.
 - ...

4.6 Paraclinical Module

Module purpose:

- Connecting to test's machine, image diagnosis machine,.. then get the result and input the result to clinic management system automatically.
- ❖ Manage all clinical outcome of patients during examination and treatment at the clinic.
- print clinical.
- To output report as stipulated (clinical records) and other reports to serve specialised works and the clinic management.

Paraclinical Module receives the information test and images diagnosis request form from two sources:

- From outpatient module: patients must pay fee before the implementation.
- ❖ From inpatient module: the patient no need to pay fee before the implementation. The fee will be charged when leaving clinic.

Once done, the result will be input to the system, print the result and return to patient.

The doctor at inpatient department will receive the result after the result is entered to system.

The main functions as below:

- ✓ Support output the clinical instruction.
- ✓ Store and return the test results of Hematology Biochemistry.
- ✓ Store and return the test results of Microorganism.
- ✓ Store and return the X-ray results.
- ✓ Store and return the ultra-sound results.
- ✓ Store and return the ECG results.
- ✓ Store and return the endoscopy results.
- ✓ Store and return the osteoporosis results.
- ✓ Store and return the MRI-CITI results.

4.7 Surgery Room Module

Managing and saving information of operations, making an operating schedule, assigning an operation, details as follows:



- Making an operating schedule: Managing details and assigning operations to Doctors of all departments in clinic.
- Assigning staff and doctors for an operation.
- Making an operating report.
- Treatment after surgery
- To make the anesthesia request form
- Bill for the anaesthetization
- Index:
 - o Group of Surgical Methods
 - o Group of Detail Surgical Methods
 - o Cost of Surgical Methods.
 - Surgical Fee
 - o Surgery Room.
 - o Form of Surgical Report
 - o Form of Anesthesia Report
 - o Discounting a surgical fee for VIP card.
 - o Posture of Minor Operation

4.8 Pharmaceutical Product Management Module

This module is built to manage the input/output/in stock process of the pharmaceutical products (drugs/chemicals/medical supplies) closely, exactly in the entire clinic by assigning responsibility clearly for the involved departments in the financial and goods management, ensuring the proper collection, collected enough drug charges.

This software can manage an unlimited number of storages, including input/output of all medicine cabinets in all departments. Board of Management, accounting department and pharmacology can can closely monitor drug from estimating until work orders, enter the main warehouse, shipped to retail warehouses, export directly to medicine cabinet, or export to the patient sold over the counter drugs ... The program is very flexible, may increase or decrease inventory, departments without having to modify the program

Main feature:

- ✓ To estimate the used drugs for the whole clinic.
- ✓ To input pharmaceutical products from supplier
- ✓ To return bad qualify pharmaceutical products to supplier
- ✓ To make a pharmaceutical order for departments and other small storages.
- ✓ To output pharmaceutical products for drugstores / inpatient department/ outpatient department
- ✓ To give drugs at the counter/ inpatient department/ outpatient department
- ✓ Liquidation.
- ✓ To make an increase/decrease adjustment after an inventory
- ✓ Warning the expiration date of pharmaceutical products

4.9 Drugstore Module

This module was built to manage the retail drugstores in the clinic closely; a drugstore is seen as a management unit but does not allow importing any drugs from other sources except the clinic druge storage. This will help the clinic manage the storage more closely about importation and drugstore's revenue.

Main functions of this module:

- ✓ To create an invoices
- ✓ To collect drug charge
- ✓ To give drugs to patient
- ✓ To approve a refund
- ✓ To pay a refund
- ✓ To make a drug proposal
- ✓ To return medicine
- ✓ To make reports:
 - Total Revenue Report.
 - Invoice Details Report.
 - Drug Expiration Report.
 - Inventory Export Import Report.
 - General Input Report
 - Detailed Input Report
 - Gain and Loss Report
 - Drug return Report
 - Sold Drug Report by Patients