

FUNCTIONALITIES

Elaborating Distinctive Features



PANACEA

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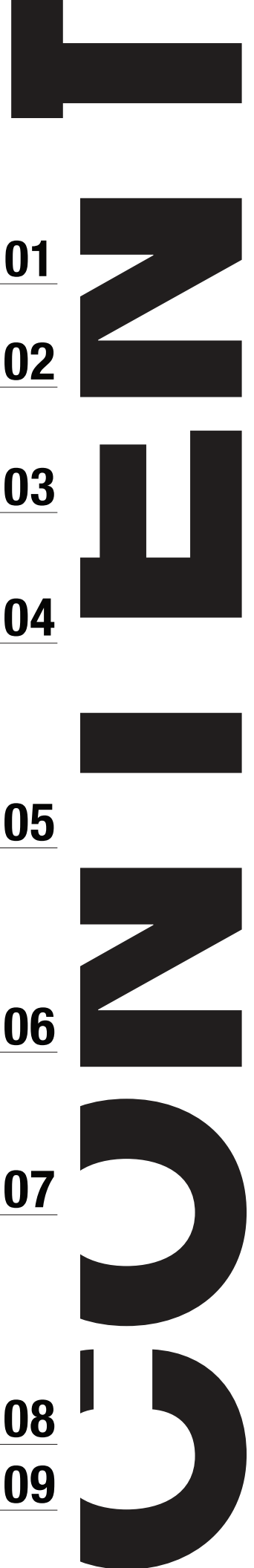
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Panacea

FUNCTIONALITIES

OVERVIEW

INTRODUCTION

Panacea provides a harmonized management information system for the entire blood transfusion sector of a country. It is an end to end blood banking management information system, catering to all blood banking and transfusion requirements from the vein of the donor to the vein of the patient. Furthermore, it is the perfect solution for any national transfusion service, not only creating an extensive network of centralised blood centres linked to each other but also linking each of them to their client hospital blood banks. The two tier “central data transfer” facility enables data connectivity first to each regional headquarter and then to the central headquarter. Thereby, making real-time countrywide data transmission and data analysis possible. Providing access to reliable planning and performance data, which renders evidence-based decision making a reality. Leading to more efficient utilization of resources and improved planning measures. Furthermore, improved monitoring of blood establishments leads to improved blood safety.

SERVER COMPATIBILITY

Panacea is a browser based Blood Banking Management Information System providing universal accessibility wherever internet is available. It has been developed to be identically functional on cloud servers as well as local servers. This hybrid compatibility of Panacea provides organisations with maximum operational flexibility. With cloud computing, substantial capital costs can be saved with zero in-house server storage and application requirements. The absence of on-premises server infrastructure removes the associated operational costs in the form of power, air conditioning and IT human resource costs. The organisation pays for what is used and disengages whenever it likes - there is no invested IT capital to worry about. Therefore, this minimal overall financial cost solution enables deployments in large, medium and small organisations, equally. Therefore,

organisations focus on blood banking activities only, as all other IT associated activities are taken care of. Thereby enabling delivery of safe blood independent of human development index.

DATA SECURITY

Data security in cloud computing has developed exponentially since its inception. Organisations are adopting cloud services for their operations, based on the industry drive to continuously improve data security, operational management, and threat mitigation practices. Reputable and established cloud service providers ensure proactive monitoring and penetration testing, to further increase the level of detection and protection throughout the cloud. For the data at rest, a wide range of encryption capabilities are also implemented. As an added layer, in Panacea, all the sensitive data (Donor / Patient Identifiers) are also encrypted using AES-256 protocol before being saved

in database. HTTPS protocol is employed to secure the data during network transmission. Furthermore, to prevent unauthorized access, Panacea implements role based authentication allowing only valid users to access the database.

INTEGRATION WITH EXISTING SYSTEMS

The use of international established open source standards for automated data exchange support the integration of Panacea with existing IT solutions such as hospital management information systems, laboratory information systems etc. This enables seamless exchange of data between Panacea and existing softwares, molding to existing systems and enhancing efficiencies.

PANACEA STRUCTURE

DONOR MANAGEMENT

A complete paperless solution, functional in the blood centres as well as in the mobile blood drives, using smartphones and tablets. Wifi hot zone generation in blood drive area connects you to your servers, wherever they are, on premises or on cloud.

The solution is implemented using browser technology, so you do not need any installation on your systems. Standard hardware will function, anywhere and everywhere. To enable rapid throughput, the donor management is split into 5 distinct stages:

DONOR SELECTION

Registration/Demographics with Photo ID

This module captures all the relevant data of the donor to enable you to uniquely identify the donor, including photo ID. Repeated donations are cross checked against last donation date, previous deferrals and reactive infectious disease testing results, making

**IDENTICAL
FRONTLINE
AND BACKUP
PROCESS
ELIMINATES
DUAL
TRAINING**

your donor selection process safer. Further, the registration process distinguishes between different types of donors such as voluntary, replacement, registry and directed donations. Needless to say, the demographic details are searchable

for locating donors with rare groups.

Questionnaire

Available in any language of your choice, the questionnaire is designed to walk your technician through the process. Therefore, the responses to questions are probed via relevant sub questions. A selection of possible answers, with color coding, aids the judgement of the technician on temporary and

permanent deferrals. On screen references are available as explanations for inquisitive donors.

Further, expandable vaccine and drug lists are embedded into the questionnaires, so that the technicians do not need to memorize a large amount of data, or carry large reference books. This helps them focus on the task at hand, which is to process the donor, safely and efficiently in minimum time.

Physical Examination

Wide flexibility enables you to define your own vital parameters cut offs for selection of donors. The workflow process will defer automatically if the donor is outside the cut off values. Hence, the technician does not need to remember the cut offs, making them free to focus on the task.

Consent

Captures the “real signature” of the donor using touch screen tablets.

Unique Donation Identification Number(DIN)

ISBT based DIN is tagged to the donor by scanning using the camera of the touch screen tablets, making efficient use of the deployed technology.

Donor Blood Testing Report

Panacea selects all non-reactive infectious disease testing results, which are automatically emailed promptly to donors. Reactive results are held and a separate list is prepared for further institutional policy based action.

Offline Backup Application

Offline functioning of this backup application ensures that in the event of internet/server downtime, the process functions identically saving the data on the same local devices. The data is uploaded upon restoration of services on a single click, making your

backup electronic. This avoids the need of dual training of your staff on electronic system as well as paper backups. The blood donor experience is also

identical, and hence is not affected by whether you are online or offline. Furthermore, the technician is trained on a single solution saving training time.

DONOR DRAW

The donor interview and draw processes are designed to enable large throughput, under the same identical electronic process.

The demographics are recalled during the draw process via scanning the DIN label using a smartphone or tablet. This enables the technician to perform positive photo identification of the donor, eliminating mix up at draw.

Further, complete traceability of the unit is maintained, from type of bag used, volume of bag, draw duration to technician name and date and time stamp. By referring back to the demographics and interview information, each unit is automatically tagged accordingly, for “do not make products”. For example, a history of aspirin intake in questionnaire, will be automatically transmitted to the unit, which will be tagged with the label “do not make platelet”. Any attempt to make platelets at the product preparation stage will be prevented.

Post Donation “Thank You SMS”

Upon completion of draw, a configurable “Thank You” SMS is immediately sent to the donor by Panacea automatically.

PRODUCT PREPARATION

All prepared products are registered in Panacea via a simple scan. Pasting of correct expiry labels is ensured automatically by cross referencing against original draw date and time, thus eliminating a potential source of error.

All regulatory “timeline” requirements are enforced. Therefore, “Fresh Frozen Plasma not allowed” to be prepared after passing timeline and “platelet resting time” is enforced.

Each product can also be modified and divided according to requirements with complete traceability for each sub product, ensuring all ISBT standards.

SEROLOGY

Comprehensive module fulfilling the needs of a wide spectrum of facilities, varying from small hospital blood banks to reference laboratories in blood centres. The repertoire of testing ranges from manual serology to full automation to electronic cross matching. Panacea

keeps track of the expiry of samples. It cross checks and verifies all results against patient’s test history, thereby trapping patient sampling errors.

On one hand, Panacea caters to manual testing in small hospitals. It is designed

to minimize data entry errors by entry of reactions and interpretation of results via drop down choices. All interpretations are verified in real time, preventing “events” via an extensive repertoire of decision tables. Testing includes blood grouping, direct antiglobulin testing, red cell alloantibody screening and identification, cross matching, and red cell phenotyping. Furthermore, it caters to complex testing for serologic problem solving including ABO discrepancy workup, adsorption elution testing, transfusion reaction workup, etc.

On the other hand, high throughput is made possible by interfacing of automated immune-haematology analysers with Panacea. All the regulatory and safety requirements for the implementation of electronic cross match are fulfilled. The facility of complex problem solving is enabled via case review by technical supervisors and haematologists. Online accessibility enables the haematologist to stay connected to their teams, wherever they are.

Customisable setups enable you to define daily reagent quality control panels in accordance with your institutional policies. Each reagent QA is dovetailed to the relevant tests, so that testing worksheets are enabled only if the QA has been successfully performed. Auto cross check of donor group reconfirmation against the donor tube blood group assures correct donor blood group identification.

POSITIVE PHOTO IDENTIFICATION PREVENTS DONOR MIXUP AT DRAW

INFECTIOUS DISEASE SCREENING

High throughput with ultimate safety is made possible by rapid work list generation via a simple scan and automated interpretation of results, eliminating errors caused by repetitive manual interpretations. Interfacing available with all established manufacturers of infectious disease testing instruments. Optional unique facility for automated “Sequential Testing”, helps reduce costs in financially challenged environments.

Panacea keeps track of reagent consumption against actual testing performed. It requires “reason for excessive consumption” by the technologist in real time, on opening of new kit and generates an email alert to the admin along with the entered reason.

Positive reinforcement of voluntary blood donors is made possible by automated transmission of infectious disease testing results to non-reactive donors at the time of unit verification. A separate list of donors with reactive results is tabulated, enabling rapid communication and counselling of reactive donors. In addition, the facility of customisable universal remarks for these results enables communication with your blood donor according to rapidly changing industry guidelines and institutional policies.

INVENTORY MANAGEMENT

This module includes “e-unit verification” and an all-inclusive “inventory status” functionality. The e-unit verification seamlessly guides the blood banker through the safety checks of infectious disease testing and visual inspection of the unit, in a manner that makes high throughput possible without compromising safety. Product quarantine for workup is designed for absolute safety, as well as ease.

The entire inventory status of the blood centre is viewable on a single screen providing a one touch solution to all your inventory inquiries. This includes issuable stock, allotted stock, units pending verification, units in process, crossmatch units and

total demand, for each product according to blood group. Rapid viewing of expiry status of each product is made possible on a single touch. The inventory status is displayed according to actual logical use. First the aggregated numbers of each of these stock categories by blood groups and product are displayed. For further detail, each category can be expanded to a list of actual DINs and their expiry, making unit localization instantaneous.

SINGLE INVENTORY SCREEN DISPLAYS ISSUABLE AND ALLOTTED STOCK, UNITS PENDING VERIFICATION, IN PROCESS, CROSSMATCH UNITS AND DEMAND

UNIT ISSUE

Central to all unit issue activities are the mandatory checks to ensure absolute safety. These include verification of the tagging of the scanned unit with the

correct patient, validity of the sample, completion of all compatibility testing, compatible / Identical product issue to the patient, product out dating and walk through of all regulatory “physical check” for each product. Registration of thawed plasma in the system, enables tracking of expiry of these units possible. In addition, the module facilitates issuance of blood in exceptional circumstances like emergency release, and least incompatible units. Panacea provides absolute verification that the right blood is being issued to the right patient, with complete traceability of the individual transporting the product to the wards. Given the dynamic nature of the blood transfusion world, a simple easy to use “product return” functionality enables return of products to inventory.

CLIENT MANAGEMENT

A simple and easy to use module that enables you to register new facilities into your system and manage the activities of your client blood banks.

ONLINE BLOOD ORDERING SYSTEM

Panacea provides a unique “Online Blood Ordering System (OBOS)” with extensive functionalities enabling your client blood banks to manage all orders online. OBOS can connect your blood centre to unlimited client blood banks in cyber space. This enables your

client hospital blood bank staff to place single bulk orders, as well as standing orders. Furthermore, Patient orders can also be placed for compatibility testing. The functionalities of editing and cancelling an order provides flexibility to your clients. Online order tracking and complain registration facilities enable your blood centre to excel in client service. The functionality of creation of barter partners makes direct exchange of units possible from other sister blood centres.

The units, and their data can be transferred to and from the barter partners freely and easily, providing maximum flexibility to satisfy orders. In addition, the clients are provided with an online portal to track and manage all their orders independently. The client blood banks are able to view the current and previous billing invoices online

DISTRIBUTION

This module enables effective distribution of products to client blood banks connecting via OBOS. It facilitates order delivery by flexible processes including order split up, blood group substitution, civil emergency order and alter delivery date functionalities. The category of “barter partner” enables inventory transfer from sister blood centres complete with all the associated unit data.

BILLING

The billing module has been designed to integrate with order management to automatically generate and e-deliver invoices. With extensive setup options, the services module dovetails with the order management to provide absolute ease in invoice generation and payment monitoring. Starting with the customisable master price list, charges of the range of services for different clients can be setup. All billing is automatically accounted for against this master list, supported by a customisable payment reminder cycle, that needs to be setup only once.

Alerts and reminders for invoice generation, payment delays and revision of charges to multiple hierarchical levels for each client enables smooth functioning with minimal human resources. Layered

invoice generation provides varying details from summary to order details to units supplied against orders. Electronic invoice generation to client representatives as well as the OBOS module of the client eliminates gaps and delays.

BLOOD DRIVE MANAGEMENT

A flexible drive management functionality enables tagging of each blood drive, to technical staff and cold chain equipment providing absolute traceability.

REGULAR DONOR REGISTRY

Donor registry module streamlines connectivity to the regular loyal blood donors. The unique donor identification number with customisable loyalty card printing and

detailed donor profile including red cell phenotype and cumulative history provides a source of dependable blood. The scheduling and appointment module has been designed to enable maximum flexibility. First, customisable setup allows the organisation to determine the donation eligibility period as an institutional policy. Further, each donor can determine their own frequency of donations. Scheduling donation by appointment enables prompt donation without a waiting period.

Various search filters allow search of donors by blood group, location etc. A semi intelligent process filters between donors who donate on time, against those who cancel and those who miss appointments, providing a hierarchy of donor dependability.

USER ROLES AND RIGHTS

Panacea has been designed to help you customise access to different modules. Customisable roles can be created, with customisable rights, that can then be assigned to users, for variable durations. Further, users can be activated and deactivated for specific durations, enabling complete control over the activities of the personnel.

SERVICES SETUP

At the root of the functioning of any regional blood centre is the range of product services it provides. The services setup module sits at the heart of the blood banks activities defining the services and the blood products which are then dovetailed into multiple modules.

ASSET MANAGEMENT

Each asset can be assigned a unique identification bar code, enabling traceability of each item to your unit processing.

ADMIN REPORTS

Panacea has a comprehensive repertoire of reports for each activity of the blood banking process, providing end to end traceability. From donor selection through to order management, reports can be generated detailing all relevant activities. Further, the reports are not just limited to technical details. Rather, a comprehensive set of reports on human resource (HR) performance, including productivity and efficiency can be extracted, enabling effective HR management.

ALERTS FOR QMS VIOLATIONS

One of the key features of Panacea is that it traps events, i.e., QMS violation, blocks further activity in real time, guides the user to correct the violation, and generates an alert to the management defined hierarchy, safeguarding the quality of the unit. Thus minimizing the errors to near zero. The list below provides a sample of the types of alerts:

Attempt to reassign DIN

Delay in platelet placement time

Patient blood group does not match with previous record, identifying sample mixup

Blood group misinterpretation

Donor blood group reconfirmation different from the initial tube blood group

Incomplete reagent quality control

User trying to access serology screen without quality control

Draw to product timeline exceeded

Pasting of incorrect expiry label

Pasting of incorrect blood group label

Scanning of discarded product

Preparation of not allowed product

Unit being issued to wrong patient

Issued product returned and discarded

Order confirmation delay alert

Invoice generation delay alert

Delayed payment alert to blood centre

Delayed payment alert to client blood bank

Charges revision date reminder

PANACEA EXTENSIONS

INTRODUCTION

Panacea has been designed to assure safety during the blood donation, unit processing in the blood centre and serologic testing in the blood bank. To close the loop in blood safety, Panacea extensions focus on haemovigilance at the patient bedside. Thus Panacea and its extensions, deliver a complete electronic, paperless solution ensuring safety from the vein of donor to the vein of patient.

Panacea Extensions is a suite of applications designed to function with Panacea as well as any other blood banking, laboratory and hospital information systems. It comprises of:

Patient Registration (NARRO)

Patient Wristband Printing (CERTUS)

Test Order (ORDO)

Sample Collection (CONFIO)

Transfusion Management (VITALIA)

NARRO

This application enables patient registration for admission in the hospital. It generates unique medical record (MR) and admission numbers, and provides the facility of photo identification. All fields are customisable as per the institutional policies. This information is the primary source of all data used by other Panacea extensions.

CERTUS

This application generates the patient identifier wristband, with MR number bar code transmitted from Narro. Certus is able to interface and extract the relevant data to print the wristband, even if another patient registration system is in use. The bar coded wristband ensures positive patient identification, enabling haemovigilance at the bedside.

ORDO

This application enables the clinical team to generate the requests of the tests and blood products for the patients. It interfaces with Narro, or any existing HMIS to extract patient identifiers, transmitting the orders to Confio for sample collection.

CONFIO

This application ensures sample collection from the right patient, interfacing with Ordo for order details together with patient identifiers. Scanning of MR number on the patient wristband using smartphones, displays unfulfilled orders for that specific patient. The sample labels are then printed from this screen at patient bedside by hand held printers, eliminating all chances of sample mix-up.

VITALIA

This application ensures transfusion of the right unit to the right patient, simply using smartphones. The MR number label on the wrist band is scanned followed by scanning of the identifiers on the issued unit. Vitalia then verifies the details and allows entry of vital signs. Specific to this application are customisable alerts such as delay in transfusion and mismatch between patient and unit, ensuring ultimate safety. Transfusion reaction reporting with the facility to print barcoded labels for the samples required for transfusion reaction workup, ensures complete electronic traceability and safety.

PANACEA FAQs

Q: What is Panacea?

A: It is a blood banking management information system designed to make a complex, error prone blood banking process, simple, productive and error free.

Q: How does it make blood banking simple, productive and error-free ?

A: Simple: Minimises data entry errors by bar code scanning and option based dropdown selections, restricting the user to select from within a range of known and defined colour coded options. Data dictionaries with autofill search options, auto-display of “action messages” to the user performing the consecutive steps in the process.

Productive:

More than just a paperless system. Time consuming manual data entry activities are replaced by two second bar code scans. Process flow is guided by Panacea and the blood banker can concentrate on technical activities. Thereby increasing productivity, enabling large volume throughput.

Error-free:

Panacea will only allow the progress from one step to the next step of blood banking process by verifying that all international regulations are fulfilled.

Q: What is the benefit of the selection based process?

A: It restricts the technician to only select the legitimate options for that specific step. It also standardises the responses for retrospective data analytics.

Q: What is the meaning of error free?

A: Any attempt to violate the blood banking process will be identified by Panacea and further processing halted until the non-conformance is corrected. Hence, error-free means that the blood delivered by Panacea is guaranteed to have been prepared according to the international blood banking regulations.

Q: What is Process Flow?

A: The blood banking system consists of a series of well-defined steps that require to be fulfilled in order to yield quality blood as per international regulations. Donor draw, product receiving, product preparation, serology testing, unit verification, compatibility testing and product issue broadly cover these

steps. The international regulations on blood banking define detailed product requirements for each of these steps and for proceeding from one step to the next. The requirements, and moving sequentially from one step to another, constitutes a process, and compliance will deliver blood products conforming to international regulations. These steps are embedded according to the regulations in Panacea. Such that it will guide the user in fulfilling all the requirements of the current step, and the requirements for moving onto the next sequential step in the blood banking process. Panacea will not allow the user to bypass any step without fulfilling the requirements of that step. In this way, the blood banker is guided through the blood banking process.

Q: Where can Panacea be used?

A: At your blood bank, at blood drives, at regional blood centres, regional headquarters, central headquarter.

Q: Does it have the ability to transfer blood units between sister RBC's?

A: Yes. Panacea provides the option to return and transfer units, and their associated unit data, between sister blood centres.

BLOOD COLLECTION AND BLOOD DRIVES

Q: Does Panacea provide the facility to hold mobile blood drives?

A: Panacea has been developed with the off campus blood drive process as an integrated part of the software.

Q: How different are the donor selection functionalities in the blood bank and at the blood drives?

A: They are completely identical.

Q: How will panacea work in the event of interruption of internet connectivity?

A: Panacea saves data locally on the device as a back up, and then uploads on a single push once connectivity is restored.

Q: During this interruption, how differently does Panacea function?

A: The process is identical in both cases, therefore requiring the phlebotomist to be trained on a single process.

Q: Is traceability of technicians and hardware possible for specific blood drives?

A: Yes

Q: What is the level of traceability provided by Panacea?

A: Panacea provides complete traceability, from unit draw to transfusion, for all human resource, hardware and process with date and time stamp.

DONOR SELECTION

Q: What is the language of the donor history questionnaire?

A: It is provided in the language of your choice.

Q: How many questions are there in the questionnaire?

A: This can be customised according to your needs.

Q: How does it help/guide the phlebotomist?

A: There are questions and sub questions, providing a decision tree to guide the phlebotomist in the process for donor selection and deferral.

Q: Does the phlebotomist need to permanently carry the donor selection SOP's?

A: No. The SOP's are embedded in Panacea.

Q: How is donor consent taken?

A: Electronically using touch screen devices.

Q: Does Panacea support the development of a regular donor database?

A: Panacea has a comprehensive donor registry module

Q: What is the meaning of "Panacea is Paperless"?

A: Panacea does not require you to record data on paper for any of its processes, from the vein of the donor to the vein of the patient.

PRODUCT RECEIVING AND PREPARATION

Q: Does Panacea restrict the product preparation process?

A: Yes, Panacea cross references product preparation against donor questionnaire, draw details and elapsed time since draw and restricts accordingly, to ensure only valid products are prepared.

Q: How does Panacea ensure pasting of correct expiry label on each product?

A: The product expiry dates on the label are verified against unit draw details and standard product expiry periods.

SEROLOGICAL TESTING

Q: How does Panacea ensure correct interpretations?

A: The user selected interpretations are cross checked against extensive decision tables embedded in Panacea.

THE SCALE OF PANACEA

Q: What is the software development process for Panacea?

A: Detailed software requirement specifications are written for each module. The software development cycle requires code development followed by technical validation at the developer's end. The software is then passed onto end user validation by blood bankers. Multiple cycles are traversed to ensure correct and safe functionalities, before deployment.

Q: How does Panacea cater for organisational policies?

A: Panacea provides extensive customisation via setup menus.

Q: How does Panacea scale with growing donor/unit requirements?

A: Panacea is scalable from a small blood bank to a large regional blood center. It does not need to be upgraded as you expand.

Q: What are the specifications of the hardware?

A: The hardware requirements depend upon the projected concurrent users using Panacea, total units per day collected / processed and patient orders generated and processed per day.

Q: What type of Servers is it built for?

A: Cloud as well as On-Premises.

Q: Can we minimise our hardware requirements to reduce costs?

A: Panacea has been designed for touch screen devices, but equally functional on standard pcs. If you wish to use your existing pcs, all you need to do is purchase the bar code scanners.

A Product Of



ZAAVIA

www.panacea.zaavia.net
www.bloodbanking.zaavia.net