

# An Innovative Tool for Supporting Quality of Care and Program Reporting: The Haiti HIV Electronic Medical Record Project

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## Background

The Haiti Ministry of Public Health and Population (MSPP), the United States Centers for Disease Control and Prevention (CDC), and the International Training and Education Center on HIV (I-TECH) began an electronic medical record system for HIV patients, called iSanté, for Haiti in 2005. Goals of iSanté are to: promote high quality HIV care through readily accessible patient data; ease program monitoring and case surveillance through automated facility reports; and support evidence-based treatment guidelines in Haiti.

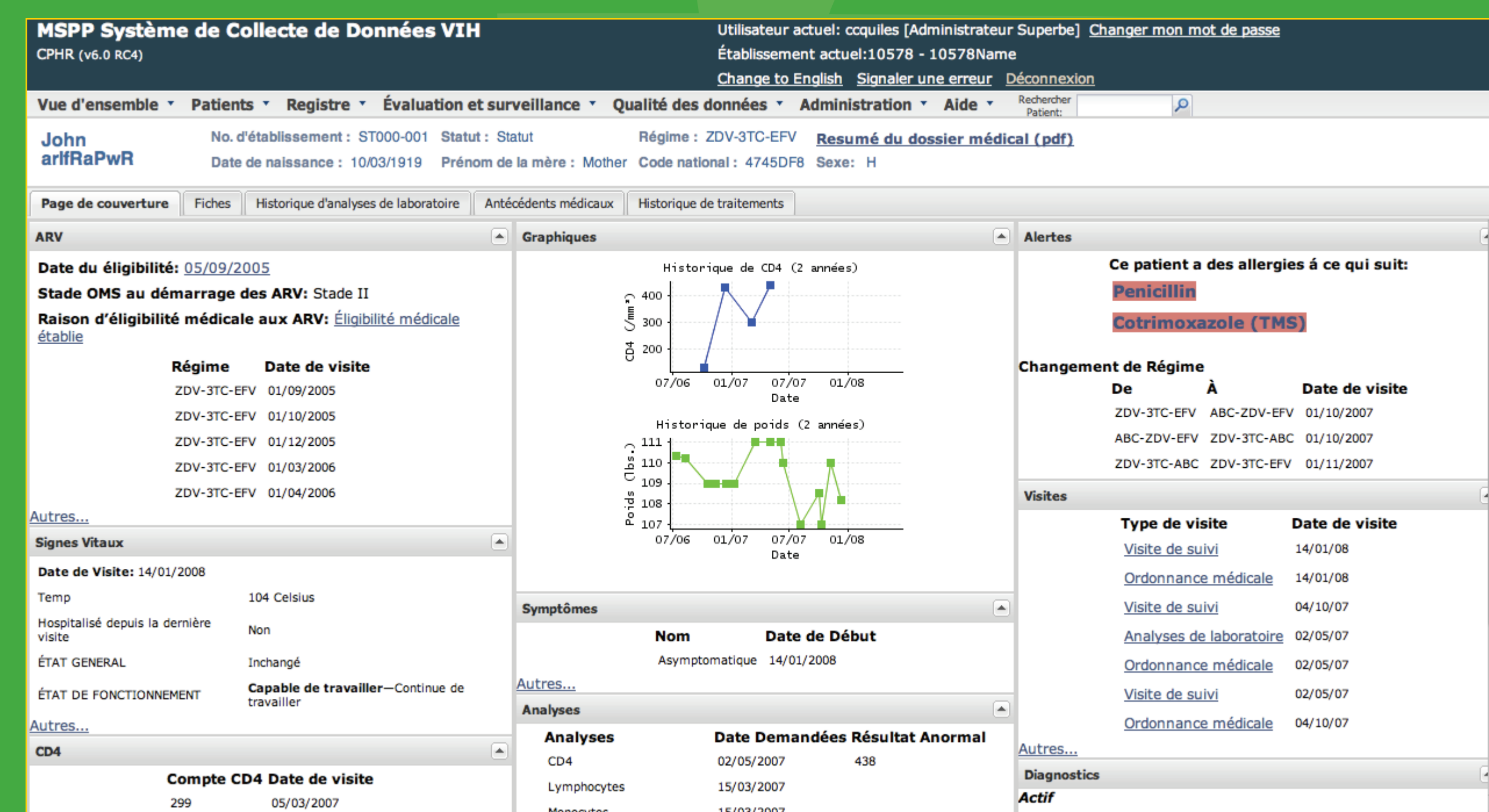
## iSanté functions

### Standardized HIV Patient Records

The Electronic Medical Record (EMR) system began with the implementation of standardized paper records, based upon national treatment guidelines. Forms cover patient registration, clinical intake and follow-up, lab and pharmacy services, antiretroviral therapy (ART) adherence, home visits, and psychosocial support services. While some sites use iSanté to enter patient information at the point-of-care, for many sites, paper forms remain critical for data collection due the unreliable computer network and power supplies in Haiti. The iSanté interface can be set for either point-of-care use or to mimic the layout of the paper forms, to facilitate retrospective data entry.

### Patient Summaries

A patient coversheet provides a concise summary of critical health information which aids clinical decision-making. The coversheet links to more detailed views of patient data. A printable patient care summary report, with a comprehensive view of all of the information entered into the system for a particular patient, is also available.



Patient Coversheet

### Registry Interface

The registry interface gives a summary view of pre-ART and ART patient data across a clinic population. The registry interface may be used to enter a skeleton set of data on each patient, as in cases where sites have a large backlog of patient data to move into an electronic format. The registry interface may also be used to make quick updates of patient demographic information. In all cases, registry information is directly linked to each patient's detailed record.

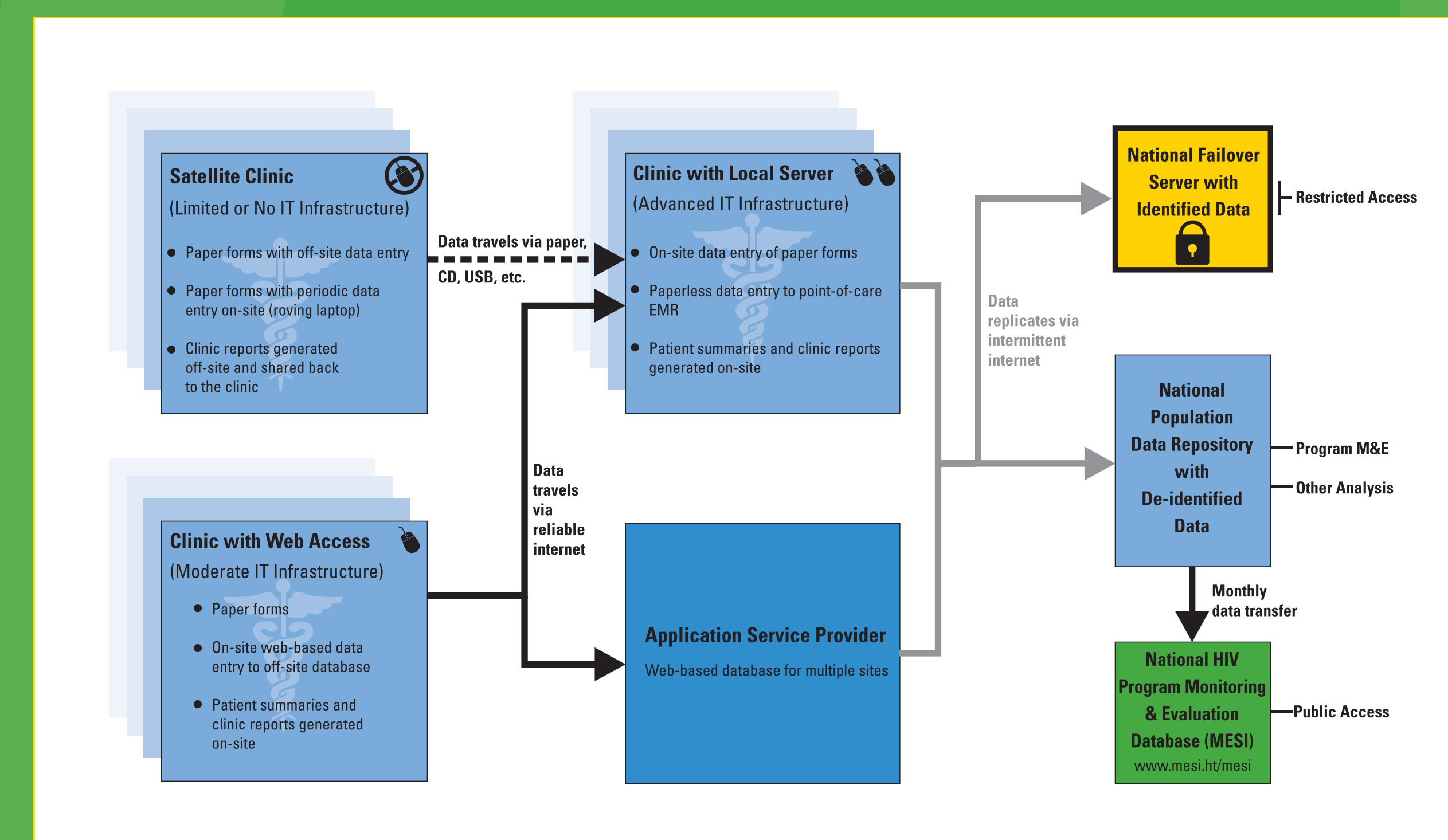
## Automated Reports

iSanté includes many automated reports summarizing data at the facility, clinic network, regional or national level. These reports enable clinicians and clinic managers to better understand the demographics of their patient population, follow up with patients who have missed visits or missed key services, and measure their progress in relation to quality of care standards.

## iSanté System Design

### Flexible Architecture

The capacity of clinical sites to support technology and information systems is highly variable in Haiti. Most clinics have unreliable power and networking capacity, and system users have varying computer literacy skills. iSanté was developed with these issues in mind, accommodating on- or offsite data entry of paper records, local hosting, or web-based access to the database. Patient data are replicated automatically to a secure central repository to support an integrated national view of care delivery, and to provide offsite backup.



### High Security

The system supports rigorous procedures for controlling user access, and applies secure file transfer protocols for all replication of data to the central data repository.

### User-Friendly Interface and Platform Independence

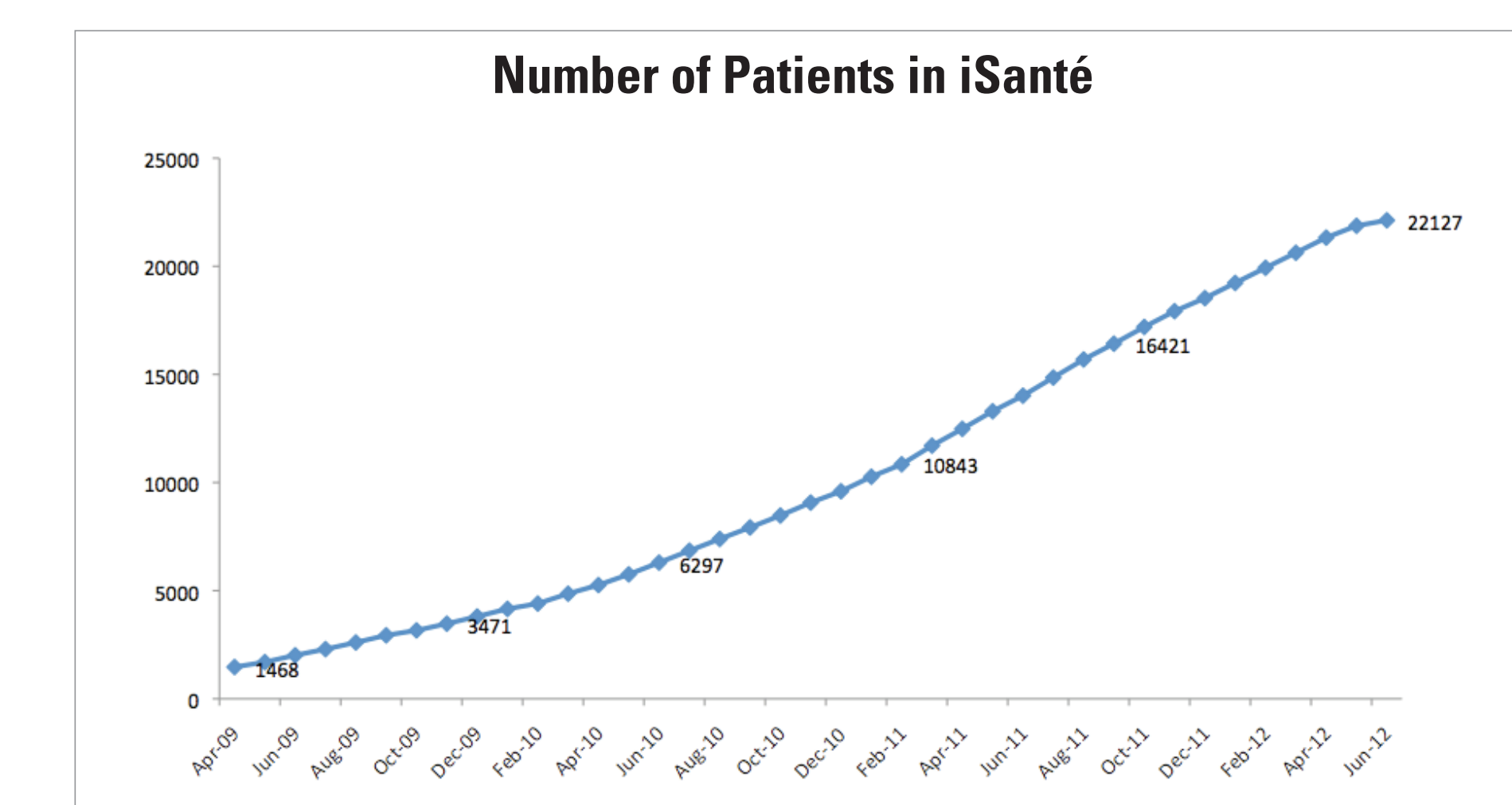
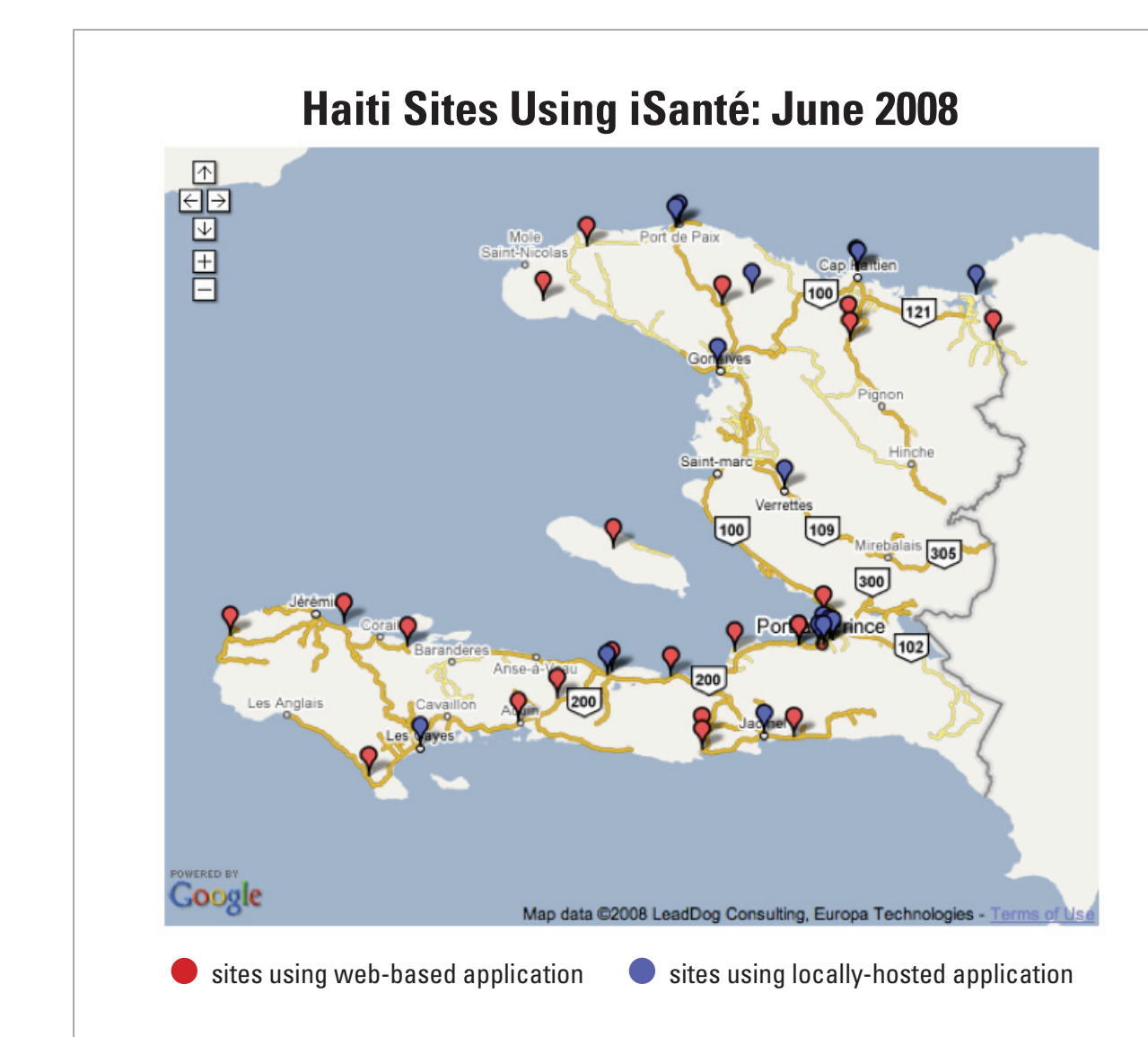
iSanté is a web-based system that runs on Microsoft Windows operating systems (OS) and is currently being expanded to support Linux OS. The application can be configured to use LAMP—a Linux OS, Apache web server, MySQL database, and PHP scripting language, or WISP—Microsoft Internet Information Server and Microsoft SQL Server. iSanté uses familiar features of a standard Internet browser for navigation.

### Data Quality and Error Minimization

An easy-to-use patient search function helps prevent duplicate patient records. iSanté applies field validation rules and signals to users when entered values violate these rules. An extensive set of automated data quality reports are available to facilitate correction of problematic records.

## Results

As of June, 2008, iSanté is used at more than 30 clinics, capturing records for more than 20,000 unique patients. The system required investment in information technology (IT) infrastructure and personnel responsible for data entry, data quality, and IT support. In return, the system markedly decreases the time required to generate monthly facility reports, and it provides clinicians with instant patient-care summaries to guide decision making.



## Upcoming Features

Next steps for iSanté in Haiti include refinement of the point-of-care interface, development of program-specific reports, development of tools to facilitate iSanté communication with other local systems (e.g., lab and pharmacy information systems, national site for reporting HIV-related statistics), and expansion to include voluntary counseling and testing (VCT) and prevention of mother-to-child transmission of HIV (PMTCT) modules. Project implementers plan to further evaluate the EMR system's usability, user satisfaction, and the impact of iSanté on health care service delivery.



**Contacts:** For more information on this effort in Haiti, please contact Perri Sutton at [psutton@u.washington.edu](mailto:psutton@u.washington.edu)

**About I-TECH:** I-TECH is the International Training and Education Center on HIV. I-TECH was established in 2002 by U.S. Health Resources and Services Administration (HRSA) in collaboration with (CDC) Global AIDS Program. For more information about I-TECH's activities and the countries in which we work, visit [www.go2itech.org](http://www.go2itech.org).