

# VIHA's Electronic Health Record (EHR)

Supporting the Delivery of Care  
with a One Person, One Record EHR Solution

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# The Need for Automation and Integration of Records



# The Inherent Limitations of Paper-based Health Records

- **Fragmented** - paper-based health records are created and stored by provider, in different formats, in separate locations
- **Inaccessible** - paper is available in one location at a time, and is often not accessible (or even known to exist)
- **Inefficient** –care providers spend a significant amount of time ‘searching’ for relevant information
- **Error-prone** - the quality of manual documentation is not validated and there is no feedback provided to care givers



“...errors are caused by faulty systems, processes, and conditions that lead people to make mistakes or fail to prevent them.”

Institute of Medicine. To Err is Human: Building a Safer Health System, November, 1999

# Our Vision for the One Person, One Record EHR



The health of Vancouver Island residents will be supported by a *single, integrated record* of care over their lifetime. Care providers will have seamless and *appropriate access* to personal health information.

Safe, high quality care will be enabled by *intelligent tools* that guide and support care planning and communications across the continuum.

The information infrastructure will be *reliable, secure and available* when and where required.

# VIHA's Journey to Establishing a One Person, One Record EHR

**2002**

**VIHA established**  
as one of six  
Regional Health  
Authorities

**2008**

**One person, one  
record EHR** in place  
across all acute and  
residential sites

## A Twelve-Year Implementation Process to-Date

**1999**

**EHR system  
selected** for Capital  
Health Region  
through RFP process

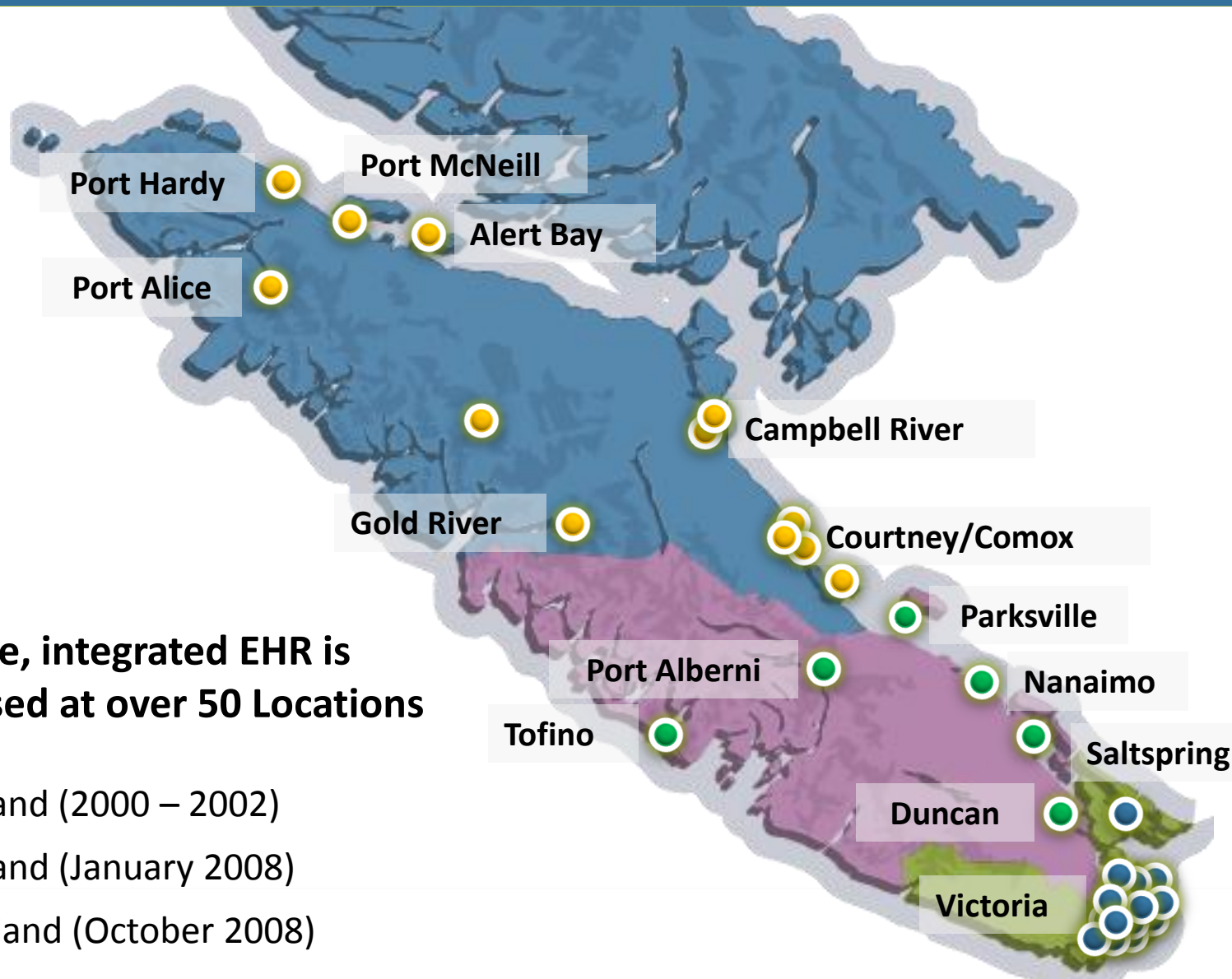
**2006**

VIHA Board **approves  
strategy** to establish a  
single, integrated  
Regional EHR

**2011**

New capabilities  
introduced in **RJH  
Patient Care  
Centre**

# Geographic Reach of VIHA's Current Electronic Health Record



**VIHA's single, integrated EHR is currently used at over 50 Locations**

- South Island (2000 – 2002)
- North Island (January 2008)
- Centre Island (October 2008)

# Current EHR Content and Functionality

- **Orders, Results, Documentation**
  - Lab Results
  - Diagnostic Imaging Reports
  - Transcribed Documents
  - Structured Emergency, Mental Health and Medical/Surgical Documentation
- **Medication Profiles**
  - Inpatient, Community (PharmaNet)
- **Provider Communication Tools**
- **Limited Electronic Capture of Vital Signs**

The screenshot displays the 'Results Review' window in an EHR system. The window title is 'Results Review' and it includes a 'Last 48Hrs' filter. The main content area is titled 'Clinical Patient Information' and shows a list of vital signs and clinical data for a patient on 15-Feb-2011 at 21:00. The data is organized into sections: Temperature, Heart Rate, Respiratory Rate, Blood Pressure, Oxygen Therapy, Neurological Assessment, Edema Assessment, and Respiratory Assessment. A 'Navigator' pane on the left lists various assessment categories with checkboxes.

Clinical Patient Information		15-Feb-2011 21:00
<input type="checkbox"/>	Temperature Oral	36.8
<input type="checkbox"/>	Temperature Tympanic	
<input type="checkbox"/>	Heart Rate, Apical	99
<input type="checkbox"/>	Pulse Rate, Peripheral	
	Heart Rhythm	Regular
<input type="checkbox"/>	Respiratory Rate	21
<input type="checkbox"/>	Systolic Blood Pressure Cuff	134
<input type="checkbox"/>	Diastolic Blood Pressure Cuff	78
<input type="checkbox"/>	Mean Arterial Pressure	
	Oxygen Therapy #1	
<input type="checkbox"/>	Oxygen Flow Rate #1	
	Neurological Assessment	
	Neurological Assessment Evaluation	No apparent diffi
	Level of Consciousness	Alert
	Gait	Steady
	Edema Assessment	
	Edema - Lower Leg, bilateral	1+ (2mm) Pitting
	Edema - Ankle, bilateral	3+ moderate/6mm
	Respiratory Assessment	
	Respiratory Effort	
	Cough	Normal
	Breath Sounds All	Productive Clear

# EHR Access, Use, and Volumes

- **EHR Access**

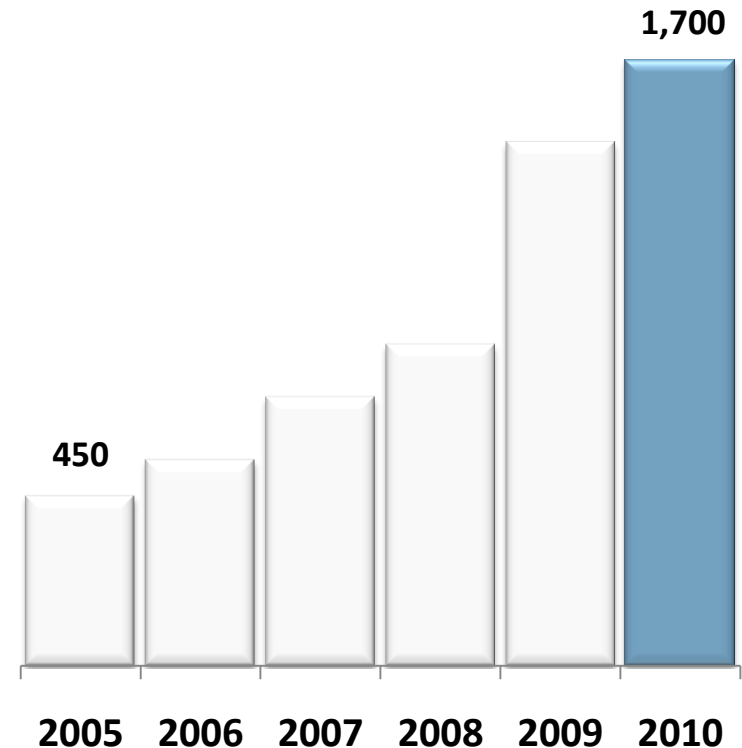
- 1,600 physicians and 13,000 clinical staff have active EHR accounts
- Wireless access is implemented across all major hospital facilities
- 9600 computer devices on VIHA's secure network, including 510 mobile carts

- **EHR Use**

- 2,500 - 3,000 unique daily users
- Average daily peak of 1700 concurrent users

- **EHR Volumes**

- Over 68,000 transactions/day, including:
  - 2,700 medical imaging test orders, 4,000 medication orders, and 24,000 lab orders
- Over 4,200 new encounters/day



**Concurrent Use of the EHR**  
*(average daily peak)*

# VIHA's Current EHR Capability Relative to Peers\*

Stage	Cumulative Capabilities	VIHA	Canada	United States
Stage 7	Fully electronic, information flows across continuum as byproduct of EHR		0.0%	0.8%
Stage 6	Structured physician documentation, full complement of electronic images		0.2%	2.6%
Stage 5	Closed loop medication administration, including positive patient identification		0.0%	3.2%
Stage 4	Computerized practitioner/physician order entry, evidence based protocols		1.1%	9.7%
Stage 3	Basic clinical documentation and decision support for errors (drug/drug, drug/lab, etc.), PACS available outside of Radiology	5	31.4%	50.2%
Stage 2	Clinicians access ancillary results from data repository, rudimentary conflict checking	4	24.1%	15.5%
Stage 1	Ancillary (laboratory, pharmacy and radiology) systems all installed	4	10.9%	6.8%
Stage 0	All three ancillaries not installed	n/a	32.3%	11.2%

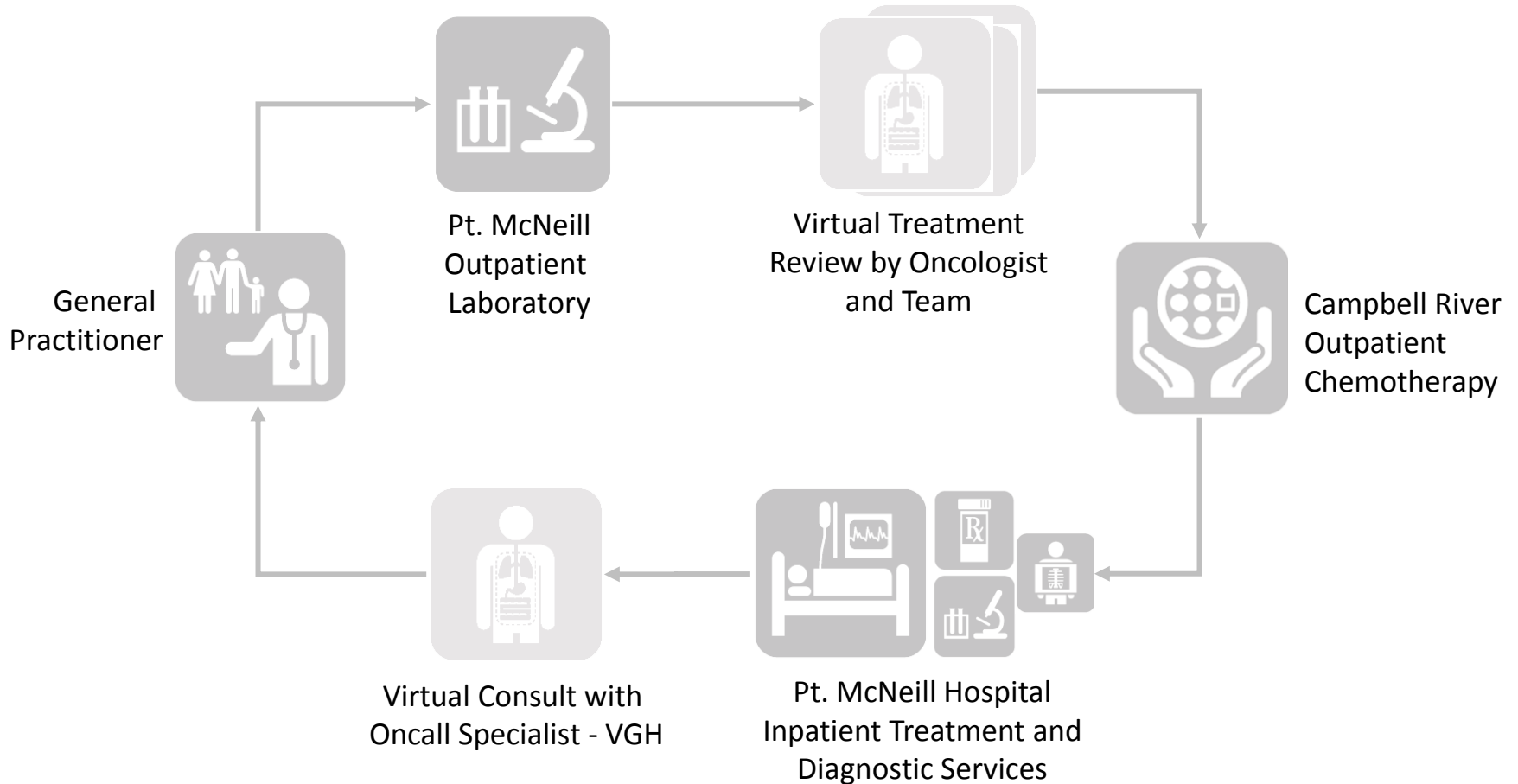
n=640

n=5,217

\* Based on HIMSS Analytics EMR Adoption Model Q2 2010

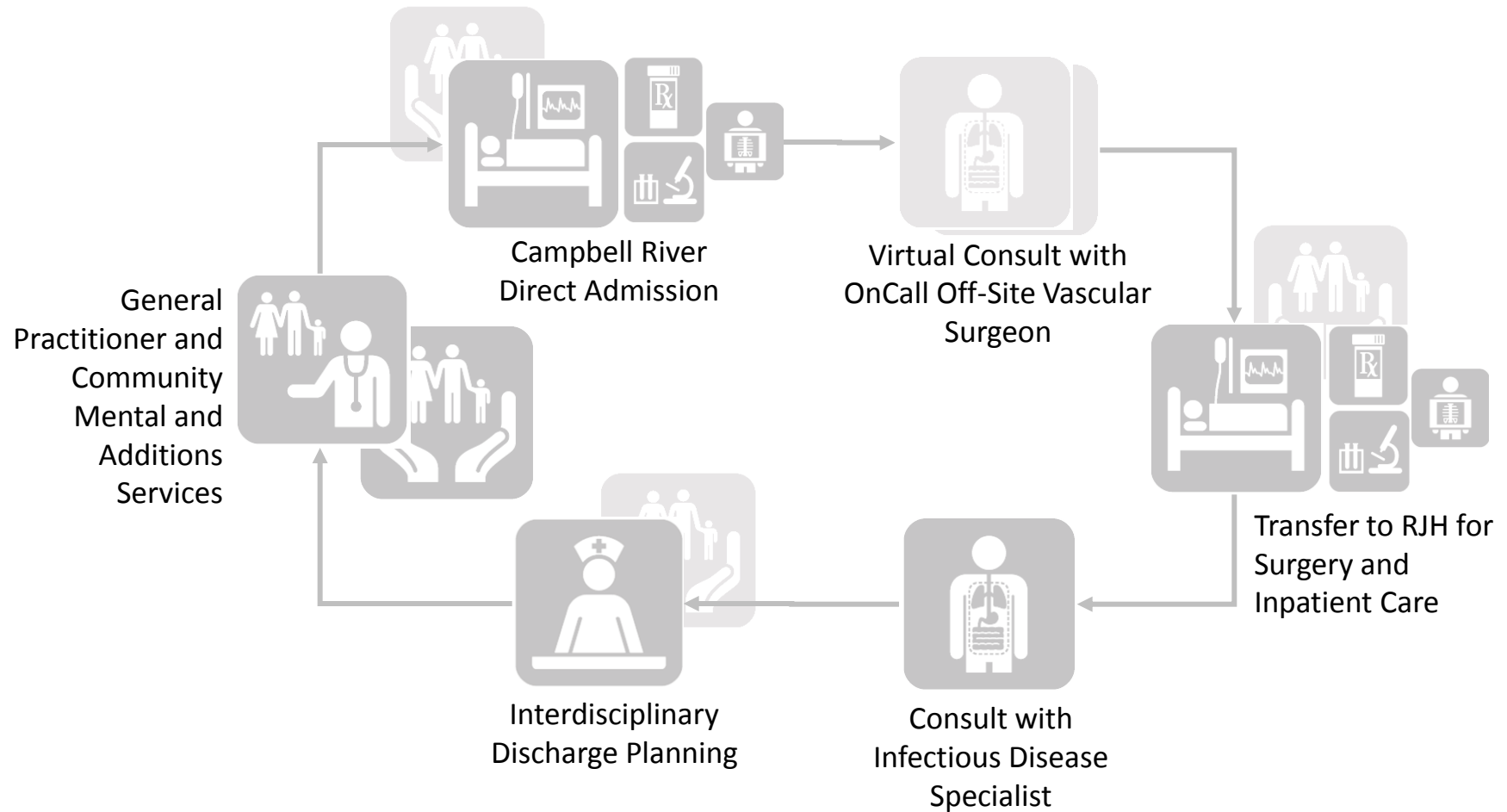
# The Value of a One Person, One Record EHR – Clinical Case Examples

## A Patient's Journey for Cancer Care in North Island



# The Value of a One Person, One Record EHR – Clinical Case Examples

## Clinical Collaboration on Acute Vascular Graft Infection



# VIHA's Plans for the Next Generation Electronic Health Record

- **One Person, One Record, *One Plan of Care***
- New, intelligent functionality that will further enable care planning and communications across the continuum:
  - Standardized electronic documentation of clinical assessments and notes
  - Guided electronic ordering for diagnostic tests, medications, and specialist referrals
  - Automated capture of key patient and client vital sign information - from the home, community, and hospital settings
- Patient access to personal health information and self-service capabilities

