



**BC Cancer Agency**

CARE + RESEARCH

*An agency of the Provincial Health Services Authority*

## SCREENING MAMMOGRAPHY PROGRAM

# Digitization of the Provincial Mobile Mammography Screening Program at the BC Cancer Agency



Janette Sam, Director Operations, Screening Mammography Program, BC Cancer Agency  
Valerie Lukac, Project Manager and Associate Managing Partner, Gevity Consulting



Information Management / Information Technology Services  
One person. One record. Better health.



# Speaker introductions



Janette Sam

Director Operations  
Screening Mammography  
Program  
BC Cancer Agency

Janette provides program leadership to further advance breast screening on a province-wide level. She ensures that the systems and processes are in place and manages the resources available to achieve the goals of the program.

She is a member of the SMP Quality Management Committee, Screeners Advisory Committee, SMP Academic Committee, and Chair – Provincial Digital Mammography Capital Plan Advisory Group

[www.screeningbc.ca](http://www.screeningbc.ca)



Valerie Lukac

Project Manager  
Associate Managing  
Partner  
Gevity Consulting Inc.

Valerie developed the business case for the Digitization of the Provincial Mobile Mammography Screening Program at BCCA and launched the project. Valerie is a seasoned consultant experienced in strategic planning, system transformation, academic health center redevelopment, investment programs and innovative initiatives in healthcare. At Gevity, Valerie leads the health system optimization and hospital performance management practice.



# Agenda

- Context
- Project objectives
- Current state and challenges with current state
- Future state and benefits
- Data flow
- Success drivers
- Lessons learned and recommendations



# Context

## ScreeningBC

- Breast
- Cervix
- Colon
- Hereditary
- Health Professionals
- Contact

Menu

Breast

## Breast

About 1 in 9 women will develop breast cancer in her lifetime. Regular screening mammograms can find breast cancer early, usually before it has spread. Make it part of your regular health routine- every 2 years.



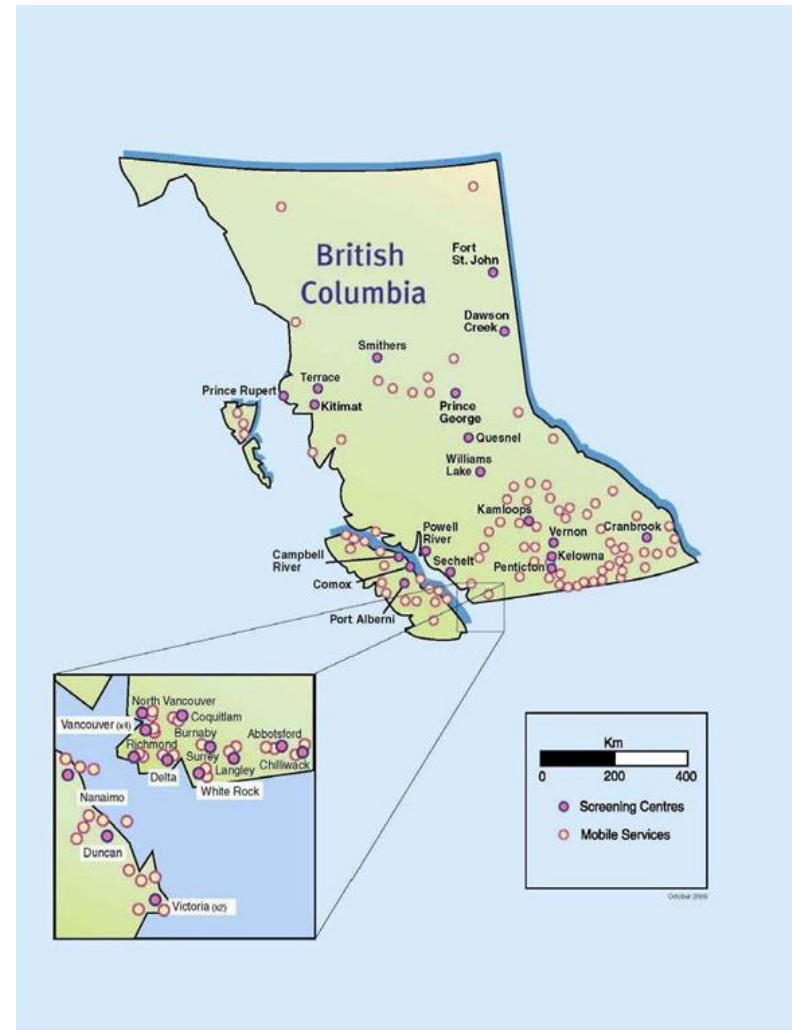
# Donna's Story



# Context

In British Columbia, breast cancer screening is funded and coordinated by the BC Cancer Agency Screening Mammography Program, who contracts with the Health Authorities and Community (private) Imaging Clinics to deliver screening services to women aged 40–74 through hospital, community and mobile clinics.

There are 36 centres and 3 mobile units that provide screening services across BC.



# Project Objectives

The analog mammography equipment in the 3 mobile coaches has reached end of life and the objective of this project is:

- to convert to digital mammography equipment
- upgrade the mobile coaches
- redesign image transfers, workflow processes and interfaces

to provide state of the art screening to BC women living in over 120 rural and remote communities.

# Current State

- Analog (film) mobile mammography screening is currently provided by 2 vehicles.
- Each vehicle has two screening technologists who travel rural, remote and under-served communities, including the IK mobile which serves Interior BC and the NLM which goes to the Northern Health region
- The techs currently access information through their corporate webmail accounts through IMITS issued VPN RSA keys which are accessible on the coaches through a Wi-Fi connection on corporate HSSBC provided laptops.
- The technicians do not access corporate information systems such as Cerner or PACS(Picture Archiving Communication Systems) on the mobile in current state.





# Challenges with the current state

- Obsolete mobile analog units
- Current mix of digital and analog equipment province-wide presents data sharing challenges
- Community space not always optimal, patient privacy often compromised
- Current film based process fragile, film needs special handling
  - Risk of fogging, overexposure
  - Damaged film means some women need to be rescreened

# Future state

- State of art equipment, providing a consistent, professional experience for women as well as making location availability easier.
- The new coaches are equipped with a wheelchair lift, a spacious waiting area, and an examination room and are designed to fit on all BC Ferries

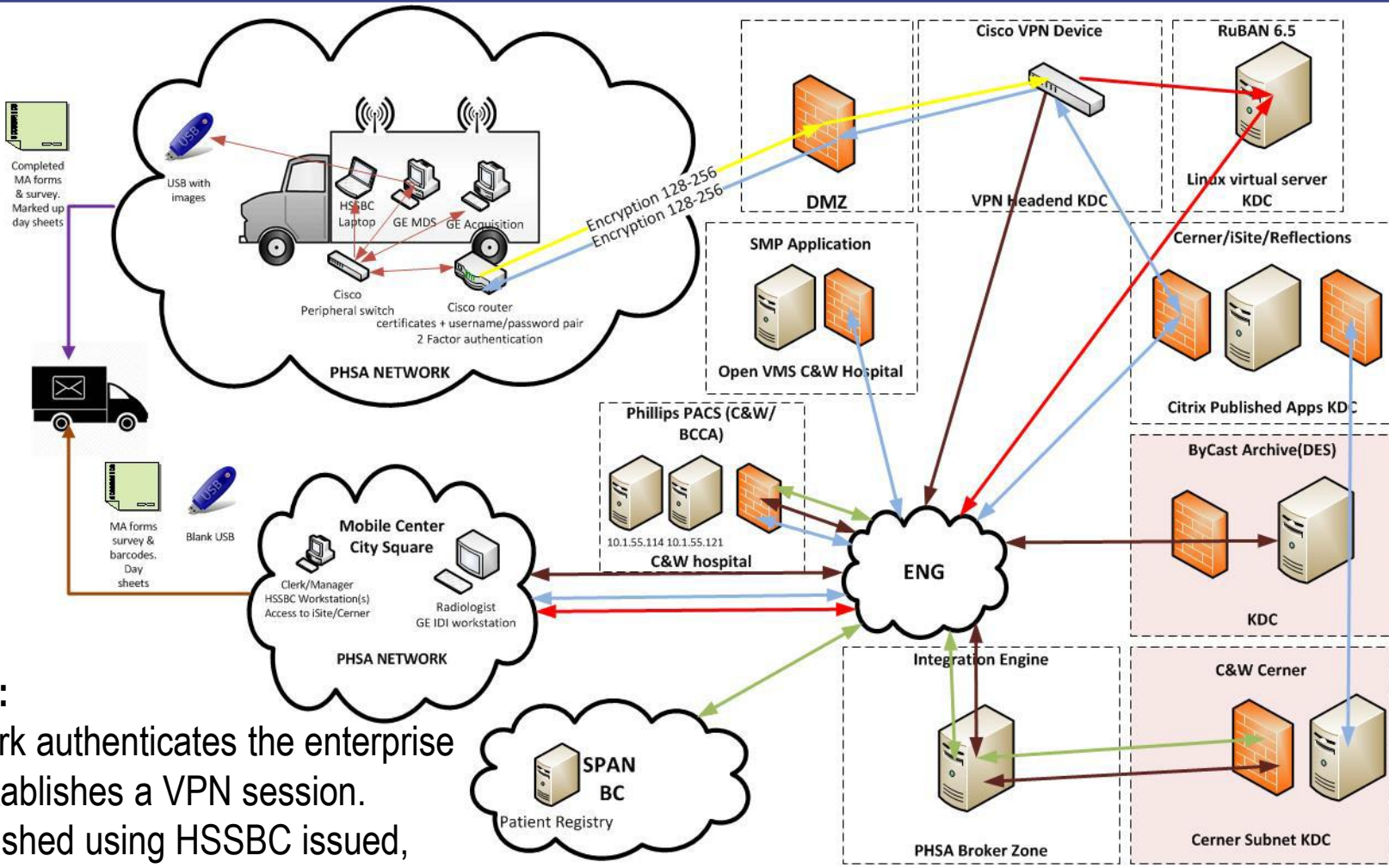


# Future state

- Providing women with a comfortable and consistent mammography experience at all locations.
- Improved image quality and fewer patient recalls
- Ability to zoom in to assess a certain area upon image reading and mark images



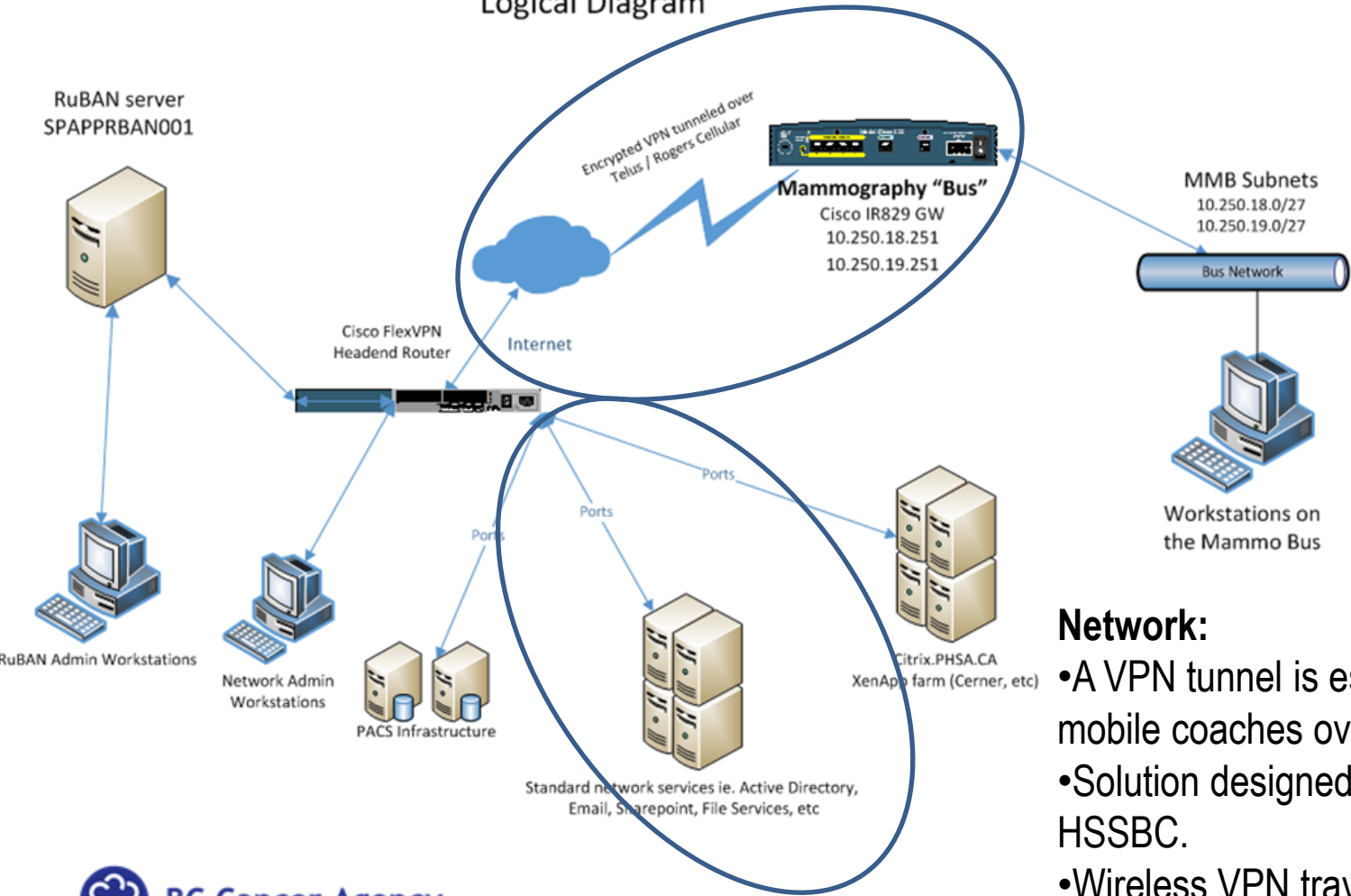
# Data flow



**Authentication:**  
 The local network authenticates the enterprise network and establishes a VPN session. This is accomplished using HSSBC issued, self-signed certs. Staff authenticate using their respective AD named account.

# Image transfer data flow

TPO #1131 Mobile Mammography  
Logical Diagram



**Network:**

- A VPN tunnel is established to the mobile coaches over Wi-fi
- Solution designed and managed by HSSBC.
- Wireless VPN traverses TELUS cell network.
- USB flash drives used for downtime



# Benefits Highlights

## Economic impact :

- The cost of treating an early stage cancer is significantly less than that for a later stage cancer.
- Direct costs of diagnosis and initial treatment for Canadian women is about 26% less for early stage breast cancer.

## Anticipated system impact :

- Digital mammography, when coupled with archival and electronic communications technology, offers improved access to complete patient records for continuity of care.
- Without connectivity between services along the breast clinical pathway, manual methods are used to transfer images and associated reports, even when both services are digital.



# Benefits Highlights

## Information Quality :

- Using HA hosted RIS/PACS to manage digital mammography workflow provides seamless access to health records for patient care from screening through to treatment
- Enables digitization towards management of seamless structured reporting as connectivity will become available to provides discrete standardized data elements that enable performance monitoring.



# Benefits Highlights

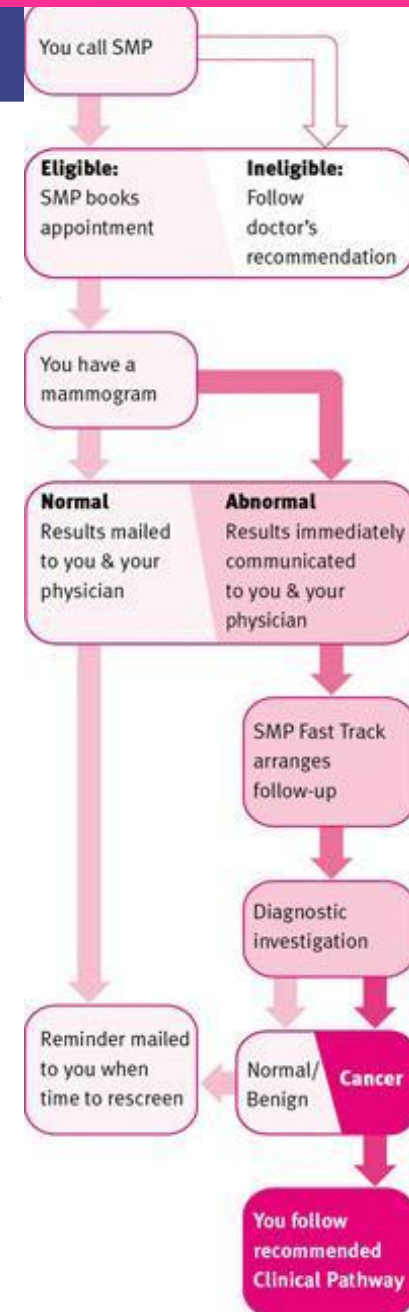
## User Satisfaction

- Digital image processing, image display tools, and the availability of computer aided detection tools reduce the need for repeated images
- Enable images to be accessed from different sites, particularly advantageous for mobile mammography units servicing rural communities
- Health benefits for technologists: eliminate handling of hazardous chemicals associated with the analog technology; and reduce repetitive movement injuries resulting from the handling of film cassettes



# Success drivers

- Strong project governance driven to project success
- Experienced senior provincial screening program director as project sponsor
- Funding allocated
- Ministry of Health Priority and support to implementation
- Clearly defined breast screening journey and workflows
- Trained and actively engaged radiology technicians
- Structured implementation plan
- Detailed project approach, plan and deliverables



# Lessons learned

- Implementing a first digital unit as a pilot allowed us to apply lessons learned when rolling out the next 2 units.
- More time was built into the schedule allowing an on time delivery of the coaches and limited downtime for screening for patients.
- Wireless image transfer solution has been successful sending images using cellular data with a Cisco router and antennas and Rogers and Telus cellular data plans.
- To date we have not yet had to use our downtime procedure of USB transfer as the cellular data signal has been working so well
- Transfer of images over cellular data however is more expensive than anticipated.

Thank you

Questions?

