Planning to Improve the Health of a Diverse Population

The Role of Information Technology

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Objectives

- Discuss One Approach to Planning *Population* Based Care
- Identify Key Considerations When Planning *Primary Care*
- Describe Effective Use of IT in Health System *Transformation*

Agenda

- Introduction to Island Health
- Planning for Health of a Population
- Planning in Primary Care: Transformational Care Models
  - Supported by an Integrated E HR/EMR
- Technologies, Partnerships and Innovations
  - TeleHome Monitoring
  - Orcah – Island Health and Cerner Institute
    - Enabling the Best Possible Medication History
    - KnowMe

Introduction to Island Health

Vancouver Island, BC

Island Health Authority

~765,000 Vancouver Island Population

18,000 Health Care Professionals

- 2,000 Physician Partners

150+ Facilities

- 6,370 Residential Care and Assisted Living beds
- 14,000 Home and Community patients (per year)
- 1,565 Acute Care & Rehab beds
- 1,075 Mental Health & Substance Abuse beds

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Chronic Illness in British Columbia

Depression
Hypertension
Oseteoarthritis (OA)
Asthma
Diabetes
Cardiovascular Disease
Osteoporosis
Ischemic Heart Disease
Angina
COPD
Congestive Heart Failure
Chronic Kidney Disease
Acute Myocardial Infarction
Stroke
Dementia
Rheumatoid Arthritis (RA)
Transient Ischemic Attack
Dialysis

0 200,000 400,000 600,000 800,000 1,000,000

- **1 in 3 British Columbians have one or more chronic diseases**
- **>70% of health care costs are consumed by this population**
- **What impact does early intervention and improved *health* have on the *healthcare* system?**

Island Health's Population and Geography

- Highest proportion of confirmed chronic conditions per capita
- Highest proportion of elderly residents per capita
  - Fastest growth in retirement living in Canada
- 23% of BC's aboriginal population
- Poorer health status in north
- Challenging access for remote and rural clients

The Case for Change

Maintain 92

Per 1,000
Population 75+

Additional Beds and Units

6,000
5,000
4,000
3,000
2,000
1,000
0

2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020

Add ~163 Beds per Year

Add ~1 Bed per Day

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Planning for Health of a Population

Canadian Population Health Approach: Organizing Framework

1 Focus on the health of populations

2 Address the determinants of health and their interactions

3 Base decisions on evidence

4 Increase upstream investments

5 Apply multiple interventions and strategies

6 Collaborate across sectors and levels

7 Employ mechanisms for public involvement

8 Demonstrate accountability for health outcomes

Public Health Agency of Canada Canadian Best Practices Portal Retrieved May 27, 2015 from http://cbpp-pcpe.phac-aspc.gc.ca/population-health-approach-organizing-framework/

Cerner/Island Health Shared Vision

Employer
PCP
Specialists
Grocer
Pharmacy
Urgent Care
ED
Church
Hospital
Gym
HEALTH CARE
School
Rehab
Long-term care

Planning in Primary Care Transformational Care Models

Collaborating Across Sectors and Levels
Base Decisions on Evidence

Patient Experience: Now and Future

Client

HCC	Mental Health	DEC	Acute Care	Seniors Outreach	IHN

Current

Many service options - varying locations

Client

OHC

Client is engaged

Coordinator links client to care services

Future

An integrated care model makes engagement for health services easier for the client.

November 7, 2012 v.4

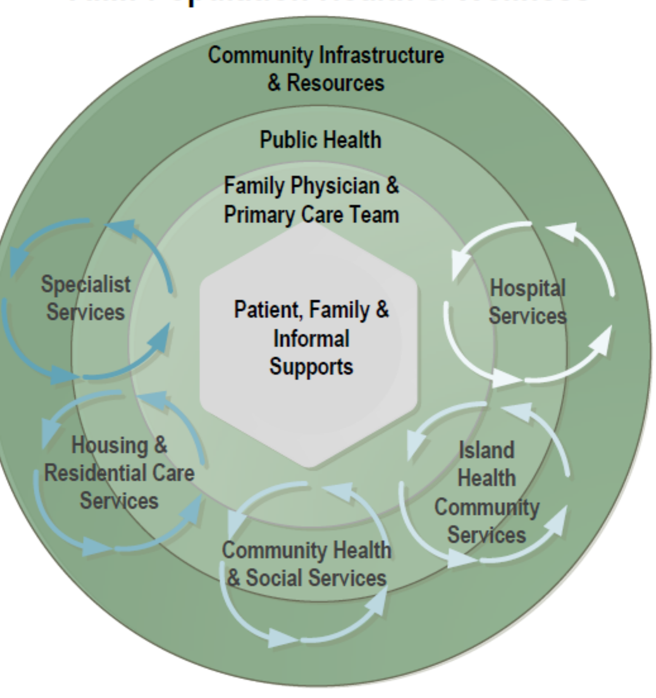
Inspiration for Change: Integrated Health and Care

Nuka Model – summary

1. Relationships – trusting personal partnerships
2. Customer Driven – Alaska Native values
3. Same Day Access
4. Max Packing
5. Working at the top of your license in team
6. Service Agreements
7. Job Progressions, Career Ladders, Mentoring
8. Giving Story, Receiving Story
9. Accountable Performance
10. Putting services into culture
11. Asset Based positive approaches
12. Operational Principles

http://www.southcentralfoundation.com/

Flipping the Balance of Care



<u>Care</u> – from hospital to community

<u>Delivery</u> – from individual care providers to care teams

<u>Power</u> – from provider to patient and family

<u>Costs</u> – from treatment to prevention and co-production

<u>Emphasis</u> from volume to value; and from health care to health

Flipping Health Care. Bisognano. Aug 2014

15

Health Centred Around the Individual
Nutritionist
Care Navigator
Family
Primary Care Provider
Medical Office Assistant
Community-Based Providers
Pharmacist
Behavioural Specialist

OCEANSIDE HEALTH CENTRE
Oceanside Health Centre
URGENT CARE
Medical Imaging
• Integrated Primary and Community Health Care Team
• Integrated Cerner- based Primary Care EMR
• Developing Cerner Home and Community Care workflows

Technologies, Partnerships and Innovations

TeleHome Monitoring

Focus on the Health of Populations
Base Decisions on Evidence
Apply Multiple Strategies and Interventions

TeleHome Monitoring: Innovating Care Delivery

"Telehomemonitoring provides me the ability to remotely 'see' how my patients are doing every day and to deliver care more proactively. This helps me to identify potential health problems before they arise."

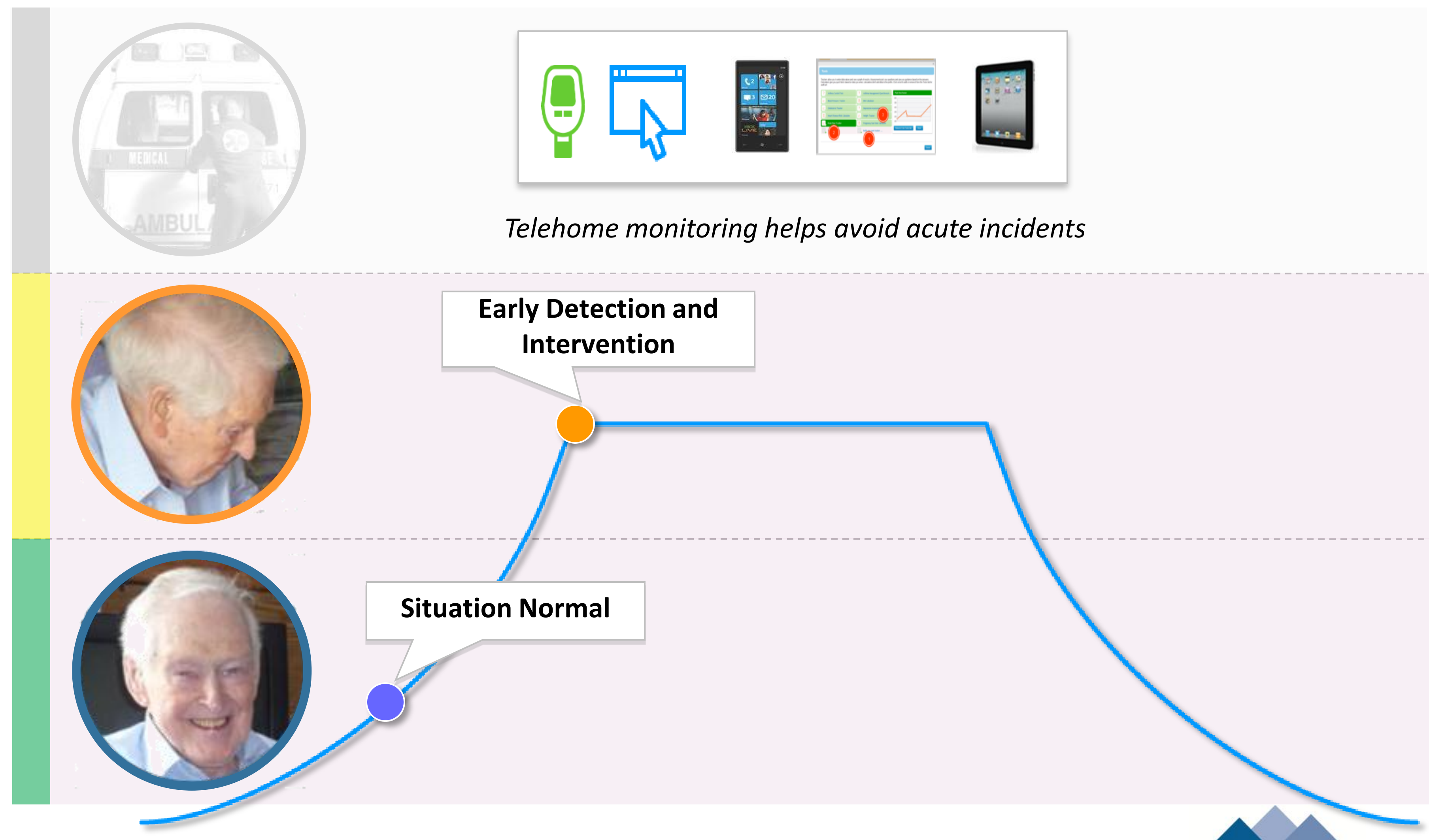
Christine Gotzman, HCC Nurse

TeleHome Monitoring for Chronic Heart Failure

Results *(n=87)*	**Pre**	**Post**	**Change**
Hospital Admissions (#)	36	14	↓ 61%
Length of Stay (days)	426	106	↓ 75%
Emergency Dept Visits (#)	57	20	↓ 65%

Client Experience and Satisfaction	
Client Compliance with Daily Measurements	98%
% Reported "Easy to Use"	92%
% "Strongly Agreed" that monitoring helped to manage CHF	87%

Understanding the Possibilities: Bending the Curve



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New Conditions, Integration and New Care Models

2016/17 (1,000+ clients)

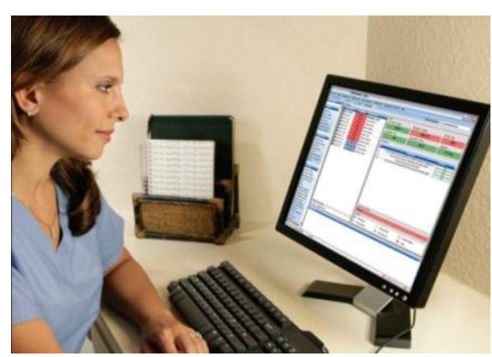
- Expansion of integrated care teams
- Extend multi-condition monitoring

2015/16 (600+ clients)

- One new condition
- Introduce Personal Health Records
    - Oceanside
- **Data integrated into Cerner EHR**

2014/15 (200+ clients)

- Expand CHF monitoring
- Broaden referral process
- Optimize care pathway
- New Models of Care i.e. Oceanside



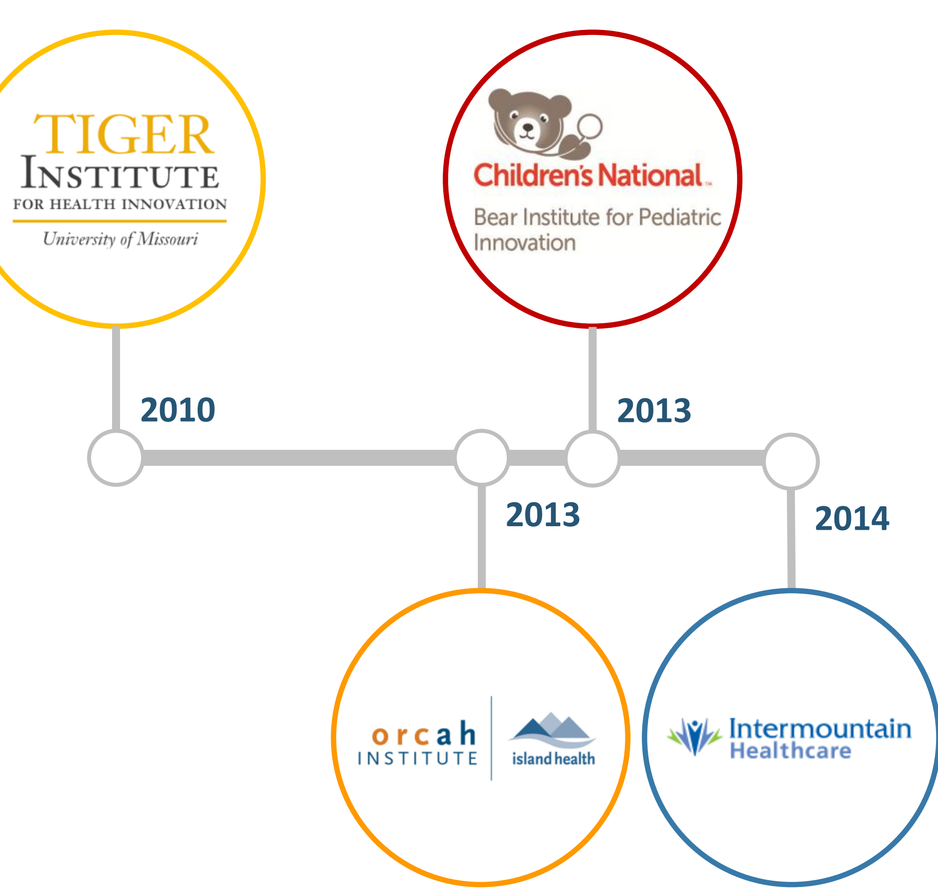
Electronic Health Record Partnerships and Innovations

The Orcah Institute for Innovation in Population Health

- **The Drivers and Opportunity**
  - In 2011, both Island Health and Cerner had a need to respond to the emerging focus on accountable care and population health
  - Both parties recognized Island Health's unique positioning as an end-to-end micro-system with an aging population demographic

- **The Orcah* Institute**
  - One of four Cerner 'Institute' relationships focused on developing future-oriented solutions with broad applicability

- **IHealth – 'the Beginning'**
  - The foundational infrastructure for advanced clinical analytics, quality improvement and health innovation



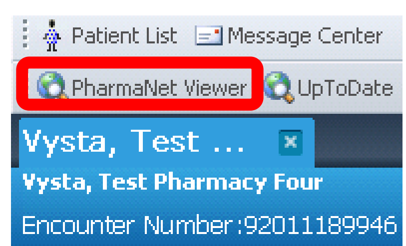
Cerner Client Institute Relationships

Enabling an Electronic Best Possible Medication History through Data Integration

Collaborating Across Sectors and Levels

Towards Medication Safety – An Integrated PharmaNet View
A Canadian First in 2008

Provincial Drug Database Integration within a Regional Electronic Health Record



- Cerner configured to pass physician's credential (CPSID) and patient's Personal Health Number (PHN) seamlessly; no further log in required
- View Access to patient's 15 most recent dispensed prescriptions and/or last 14 months of dispensed prescriptions from PharmaNet

Divoky , A MMale 70 Y

CERNER: Divoky , A DOB:1937-FEB-14 PHN#:9147081439 MRN:34-27-37
PharmaNet: DIVOKY, A DOB:1937-FEB-14 PHN#:0009147081439

Patient Demographics | Last 15 Dispensed | Dispense History (14 months)

Recent Medications

Medications

2023-APR-18		COMPOUNDED MIXTURE UNKNOWN	LEWIS
R	1000	To be taken as directed.	
2022-MAR-14		METHADONE HCL PHARMASCIENCE 100% POWDER	CULLEN
F	300	TAKE AS DIRECTED	
2022-MAR-12		CHLORPROMAZINE HCL UNKNOWN 100MG SUPP.RECT	CULLEN
F	10	TESTUBG LABELS AND THIS IS A SIG CODE FOR TES DOCTOR	
2022-MAR-12		TEMAZEPAM APOTEX INC 15MG CAPSULE	CULLEN
F	300	TAKE AS DIRECTED	
2022-MAR-12		BUPROPION HCL UNKNOWN 100MG TABLET SA	CULLEN
F	70	TAKE AS DIRECTED	
2022-MAR-12		WARFARIN SODIUM APOTEX INC 1MG TABLET	CULLEN
F	300	TAKE AS DIRECTED	
2022-MAR-12		LABETALOL HCL APOTEX INC 200MG TABLET	CULLEN
F	300	TAKE AS DIRECTED	

Adverse Reactions

- ERYTHROMYCIN STEARATE ABBOTT LABS 125MG/5ML ORAL SUSP (302)
- WARFARIN SODIUM UNKNOWN 5MG TABLET (10308)
- PENICILLIN G POTASSIUM NOVOPHARM LTD 312.5MG TABLET (151432)
- SULFAMETHOXAZOLE/TRIMETHOPRIM HOFFMANN-LAROC 400-80MG TABLET (272469)
- DIAZEPAM APOTEX INC 5MG TABLET (36215

Conditions

GOUT	C
ALLERGY - PENICILLAMINE	

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Towards Medication Safety:
An Electronic Best Possible Medication History (BPMH)

A BPMH is a Medication History Created Using:

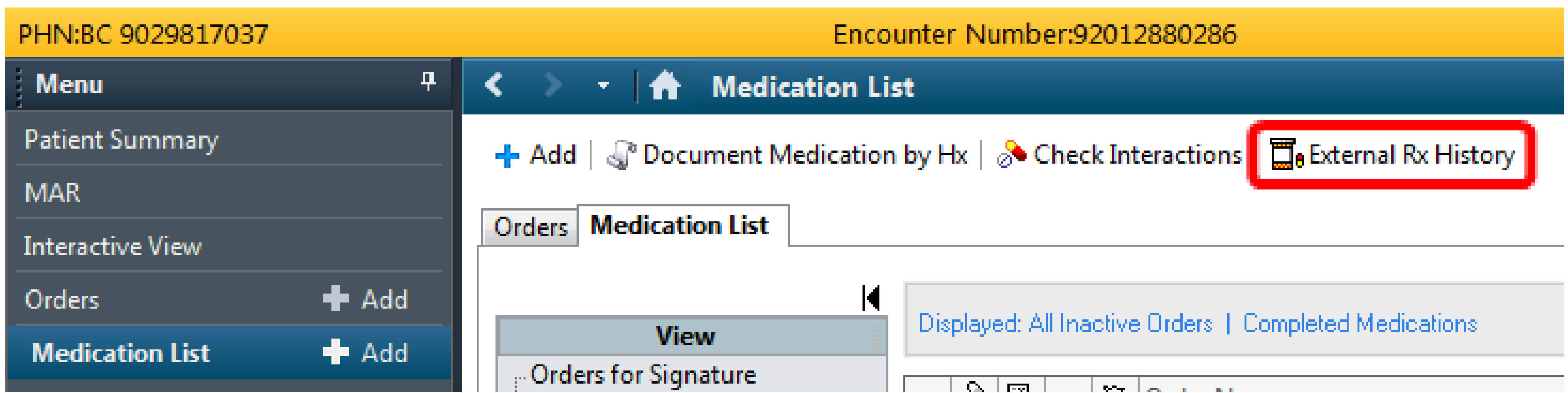
- A systematic process of interviewing the patient, family and/or caregiver
- A review of at least one other reliable source of information to obtain and verify a patient's medication use
  - Prescription, non-prescription, traditional, holistic, herbal, vitamins, supplements and office samples
- Complete documentation of medications including name, dose, route and frequency

BPMH is a snapshot of a patient's actual medication use, which may be different than what is contained in their records!

Data Sources: Safer Health Care Now! presentation: A Novel Tool to Assess the Quality of Admission MedRec Processes
Accreditation Canada http://www.accreditation.ca/sites/default/files/rop-handbook-en.pdf

Towards Medication Safety: Integrated PharmaNet Data BPMH Pilot at Oceanside Health Centre

- Joint initiative between BC Ministry of Health Pharmaceutical Services Division, Cerner Corporation and Island Health Authority to pilot ***another first in Canada***
  - Direct PharmaNet access via Cerner for Nurses (RNs) and Nurse Practitioners (NPs)
  - Cerner/PharmaNet **data** integration to support BPMH documentation
    - PharmaNet medication profile accessed via External Rx History button in Medication List
    - Ability to import directly into Cerner
- BPMH documentation in Urgent Care, Primary Care and Medical Day Care



Enhanced BPMH Oceanside Health Centre Pilot – Phase 2 (Apr 2015)

thnet, Lawrence | Gender:Female | Age:39 years | Loc:MDC-OHC
N:BC 9030146411 | Encounter Number:92013541732 | MRN:19618420 | DOB:01-Jan-1976 | ** Allergies Not Recorded **

Add | External Rx History ▾ | Medication History: No Known Home Medications | Unable To Obtain Information | Use Last Compliance | Reconciliati... Meds Hi...

External Rx History

Display: Last 12 Months | Show Individual Instances | Disclaimer:

This Rx history contains prescription records provided by community pharmacies and pharmacy benefits managers (PBM's). Such Rx history may be incomplete and prescriber should not rely solely on this Rx history data to make any clinical decisions. It is the responsibility of the prescriber to validate and verify the information directly with the patient or via other appropriate means.

PharmaNet Profile

	Order Name/Details	Last Fill	Add As
	Rx history as of: 23-Apr-2015 15:06		
	METHADOSE (METHADONE) 10MG/ML UNKNOWN		
(3)	WARFARIN SODIUM 2.5 MG TABLET APOTEX INC To be taken once daily(1) at approx. the same time each day.	15-Feb-2015	

Document Medication by Hx

Cerner Profile

Order Name/Details	Last Dose Date/Time	Information Source	Compliance Status	Compl...
Last Documented On 23-Apr-2015 15:22 (Test, P2 RN)				
Home Medications				
acetaminophen (acetaminophen extra strength) *1,000 mg, oral, Q8H, PRN: Pain*				
Pending Home Medications				
~~amoxicillin (Amoxil)~~ *500 mg, oral, Q8H*				
ALPRAZolam (Xanax 0.25 mg oral tablet) *2 tab, oral, DAILY, PRN: anxiety*		Patient	Still taking, as prescribed	Family tabs da...

Cerner Order Details Entry

▼ Details for **warfarin (warfarin 2.5 mg oral tablet)**

Details | Order Comments | Compliance

Dose	Route of Administration	Frequency	Duration	Dispense	Refill
1 tab	oral	DAILY		30 tab	

Drug Form: Tab | PRN: | Samples: | Requested Refill Date: **/**/****

Requested Start Date/Time: 23-Apr-2015 1526 | Performing Location: | Special Instructions: | Type Of Therapy: ○ Acute ● Maintenance

KnowMe
Changing the Conversation

Employ Mechanisms for Public Involvement
Address the Determinants of Health and Their Interactions

See me as a Person
not just another patient

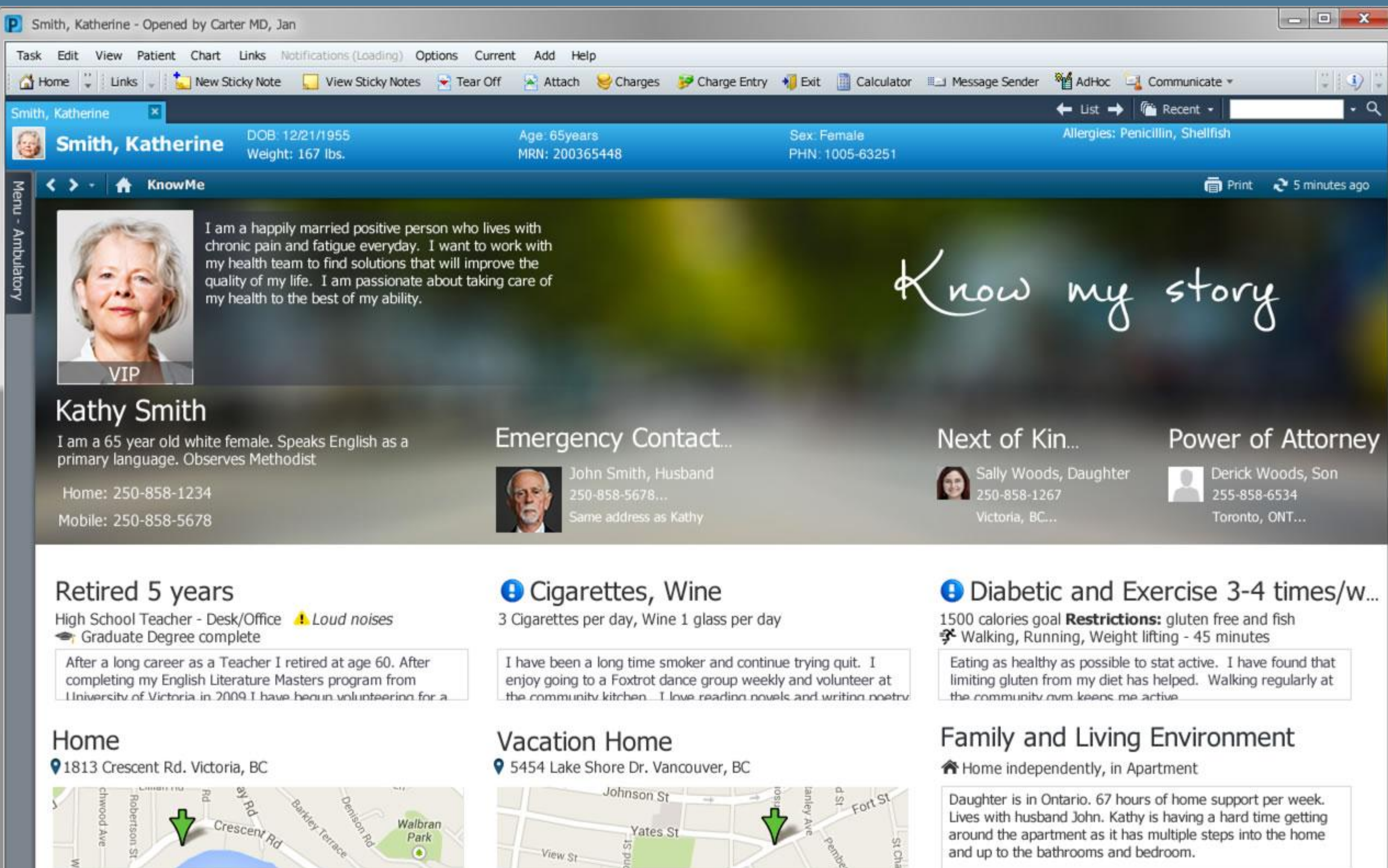
- my Story
- my Goals
- my Life Plan
- my Care Team
- my Family
- my Values
- my Daily Living
- my Fears
- my Hobbies

What's Important to ME regardless of where I am

KnowMe Possibilities

- Additional Patient Identified Information
  - Personal care team
  - Problems (symptoms)
  - Hobbies
  - Mood
  - Stressors
  - Housing/Education/Work
  - Daily living habits
  - Advance directives
  - Life events
  - Goals
- Additional Clinical information (TBD)
  - Home treatments and assistive devices
- Professional and community services
- Additional views
  - Timelines (i.e. visits and life events)
- Engagement via Patient Portal

KnowMe at the Beginning: Know My Story



Discussion