



CANADA

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Supporting integration of interdisciplinary care  
through the use of technology-enabled systems

**Cindy Hitsman**

**NLN.ON conference**

**March 28, 2008**

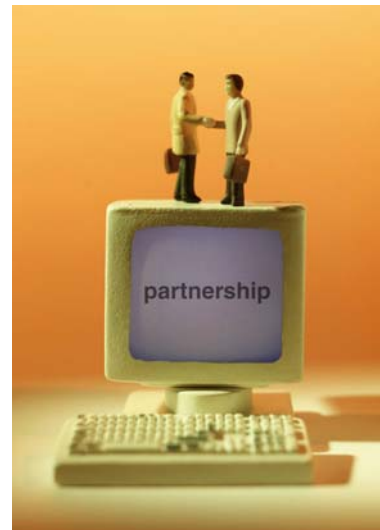
- **The motivation for the project**
- **The pilot project: An overview**
- **Key Indicators**
- **Key challenges and lessons learned**



## VON Canada and the Erie St. Clair CCAC entered into a partnership

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**To pilot the VON initiative as a strategy to manage a stream of high-risk patients with diabetes in Erie St. Clair region.**





## Program Goals and Objectives

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### **To create a community based Chronic Disease Management program that:**

1. Improves client outcomes by highlighting the principles of evidence-based care, client self-management and system integration by
  1. Maximizing quality and efficiency of delivered services
  2. Targeting services to acute care patients at high risk for hospital re-admissions
  3. Maximizing client self-care management opportunities
  4. Facilitating active communication between all members of the interdisciplinary team
  5. Developing effective community partnerships and leveraging strengths of each
2. Decreases health care costs by facilitating a reduction in emergency room visits, length of stay, and hospital readmission rates for persons with diabetes.
3. Maximizes health human resource utilization and management



Compared to Ontario, Erie St. Clair residents:

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- Have a shorter life expectancy
- Are more obese
- Lose more potential years of life
- Have a higher use of inpatient and emergency department services
- Report higher than average rates of chronic diseases, including diabetes, heart disease and high blood pressure
- Have lower levels of stress
- Have a higher proportion of seniors



## Erie St Clair CCAC client information

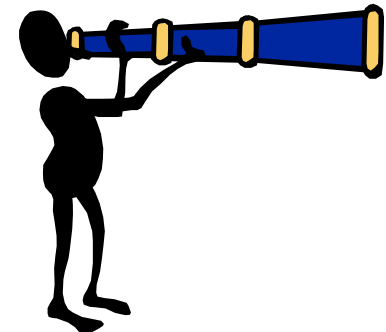
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<b>Chatham Branch</b>	<b>Primary diagnosis</b>	<b>Secondary diagnosis</b>	<b>Total</b>
<b># clients with diabetes</b>	<b>40</b>	<b>162</b>	<b>202</b>
<b>Average # of clients with diabetes admitted each month</b>	<b>4</b>	<b>21</b>	<b>25</b>
<b>Average LOS for clients with diabetes</b>	<b>317</b>	<b>230</b>	<b>273.5</b>
<b>Average COS for clients with diabetes</b>	<b>\$2812.06</b>	<b>\$2796.26</b>	<b>\$2804.16</b>

## Scope and Scale

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- Total of 20 - 25 clients in the program
- Monitoring and interventions taking place over one year
- Each client to be monitored for approximately 3 months
- Disease entity chosen: Diabetes





# Stay@Home with VON The Big Picture

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## Support for Self-Management

CDSMP classes, Activity, Nutrition screening, Disease Specific Education



### Delivery System Design & Decision Support

System Navigation

Advocacy

Case Management

Interdisciplinary engagement

### Clinical Information Systems

Telehome Monitoring

Self-Management Portal

Electronic Record





The community based interdisciplinary team

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- **Erie St Clair CCAC**
- **Chatham-Kent Health Alliance**
- **CCAC Medical Advisor**
- **VON Canada**
- **VON Corporate Centre**
- **VON Chatham-Kent Branch**



***Interdisciplinary team included:***

**Nursing, medicine, IT, education, administration, research, and volunteers**



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## Inclusion Criteria

## Exclusion Criteria

- Adults over 18
- Type I or Type II diabetes
- Living in Chatham-Kent
- Referred by MD or NP
- Eligible for CCAC services
- Hx of 2+ ER visits or 1+ hospitalization over past year
- Cognitive ability to undertake the program

- Under age 18
- Live outside geographic boundaries
- Gestational diabetes
- Dx of dementia, cognitive deficits or ABI
- Ineligibility for CCAC services
- Life expectancy of less than one year

- Multi-faceted approach
  - CCAC
  - Family Practitioners
  - Family Health teams
  - Local Hospital Emergency Room
  - Diabetes Education Unit
  - Emergency Medical Services

Each Day at an appointed time...

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- **The client uses the telehome monitoring equipment to measure and record their daily blood parameters**



Blood Pressure

Glucose

Weight

This information is transmitted via a telephone line to a central monitoring station..





# Where a nurse at a central station monitors the results

HomMed Home - Central Station Current Status

Navigator 8 1 2 2 38 ? Help

Stein, Matthew Memorial Hospital - North Side Clinic

Condition	Patient Name	Weight	Blood Pressure	SpO2	HR	Temp	Answers	Additional Devices
ALERT	Delaney, Russell	245.0	160 / 105 ( 123 )	86	115	-	2 Yes, 8 No	-
ALERT	Huang, Greg	162.0	157 / 90 ( 112 )	87	105	99.1	10 No	-
ALERT	Bruchard, Anna	133.5	151 / 95 ( 114 )	93	110	-	1 Yes, 9 No	-
ALERT	Stein, Matthew	222.0	118 / 66 ( 83 )	89	84	-	10 No	Glucose within limits, Spirometry within limits
ALERT	Rogriguez, Maria	139.5	120 / 85 ( 97 )	87	75	98.6	8 No	Glucose within limits
ALERT	Chang, May	125.0	124 / 82 ( 96 )	88	70	-	6 No	-
ALERT	Young, Priscilla	112.0	115 / 71 ( 89 )	95	103	99.0	5 No	Glucose within limits
ALERT	Majeed, Alla	150.5	125 / 75 ( 92 )	95	72	98.6	9 No	-
No Limits Set	Jones, Tony Q.	150.4	124 / 75 ( 103 )	95	76	99.0	2 No	-
NDR	Orr, Terrance	-	-	-	-	-	-	-
NULL	Wilford, James	-	-	-	-	-	-	-
Incomplete	Morgan, Barbara	162.0	125 / 75 ( 92 )	95	80	-	7 No	-
Incomplete	Cromwell, Jeanne	-	120 / 85 ( 97 )	92	70	-	10 No	-

Condition	Patient Name	Weight	Blood Pressure	SpO2	HR	Temp	Answers	Additional Devices
Within Limits	Gerhardt, Philip	150.5	125 / 75 ( 92 )	94	66	-	10 No	PT/INR within limits
Within Limits	Edwards, Latoya	136.0	134 / 88 ( 106 )	97	79	98.6	8 No	-
Within Limits	Wagner, Daniel	182.0	115 / 75 ( 88 )	93	69	-	6 No	Spirometry within limits
Within Limits	Valdez, Raymond	158.5	125 / 75 ( 92 )	97	72	98.8	9 No	Glucose within limits
Within Limits	Sherwood, Darren	160.5	131 / 90 ( 104 )	96	63	99.0	5 No	-
Within Limits	Richards, Kelly	170.0	125 / 75 ( 92 )	95	70	98.6	10 No	-
Within Limits	Steven Edwards	150.5	124 / 74 ( 91 )	94	66	-	10 No	PT/INR within limits
Within Limits	Remillard, Marc	124.0	115 / 75 ( 88 )	97	79	98.6	8 No	-
Within Limits	Gaffney, Erin	133.5	134 / 88 ( 105 )	93	69	-	6 No	Spirometry within limits
Within Limits	Bunting, George	163.0	125 / 75 ( 92 )	97	72	98.6	9 No	Glucose within limits
Within Limits	Cave, Jonathin	155.5	131 / 90 ( 104 )	96	63	98.4	5 No	-
Within Limits	Ortiz, Maria	133.0	126 / 76 ( 93 )	95	70	99.0	10 No	-

Alert Limits    Respond

Patient List    Tabular Trends    Demographics    Equipment Setup    Notes

Navigator

### Tabular Trends

8
2
2
38
? Help

Stein, Matthew

Memorial Hospital - North Side Clinic

Display Period: All (02/08/2004 to 02/21/2004)

Vitals Glucose Spirometry PT / INR

▼	Date/Time	Condition	Weight	Blood Pressure	SpO2	HR	Temp	Question Responses
	02/21/2004 09:30 (Wed)	Scheduled	-	-	-	-	-	-
✓	02/20/2004 09:30 (Tue)	ALERT	222.0	118 / 66 ( 83 )	89	84	-	10 No
✓	02/19/2004 09:30 (Mon)	Within Limits	221.0	123 / 76 ( 92 )	92	81	-	10 No
✓	02/18/2004 09:30 (Sun)	Within Limits	221.0	122 / 76 ( 91 )	93	74	-	10 No
✓	02/17/2004 09:30 (Sat)	Within Limits	219.0	122 / 83 ( 96 )	92	73	-	10 No
✓	02/16/2004 09:30 (Fri)	Within Limits	221.0	128 / 76 ( 93 )	94	75	-	10 No
✓	02/15/2004 09:30 (Thu)	Within Limits	221.0	134 / 81 ( 99 )	93	80	-	10 No
✓	02/14/2004 09:30 (Wed)	Within Limits	223.0	129 / 79 ( 96 )	91	70	-	10 No
✓	02/13/2004 09:30 (Tue)	Within Limits	222.0	120 / 72 ( 88 )	94	71	-	10 No
✓	02/12/2004 09:30 (Mon)	Within Limits	223.0	126 / 64 ( 85 )	93	71	-	10 No
✓	02/11/2004 09:30 (Sun)	Within Limits	223.0	122 / 80 ( 94 )	93	71	-	10 No
✓	02/10/2004 09:30 (Sat)	Within Limits	221.0	127 / 81 ( 96 )	94	71	-	10 No
✓	02/09/2004 09:30 (Fri)	Within Limits	223.0	127 / 76 ( 93 )	95	70	-	10 No
✓	02/08/2004 09:30 (Thu)	Within Limits	223.0	120 / 85 ( 97 )	93	71	-	10 No

Alerts
SPO2 below minimum limit of 90

ID	Questions	Ans
1	Are you experiencing more difficulty breathing today, compared to a normal day?	N
2	Are you more fatigued today, compared to a normal day?	N
15	Have your ankles been more swollen than usual?	N

Date	User Id	Notes
02/20/2004 09:45	KMAYS	Called patient and continue to monitor

Alert Limits
Standing Orders
Print / Fax Report
Respond to Vital

Current Status
Graphic Trends
Demographics
Monitor Setup
Medications



## Chronic Disease Self-Management Classes

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First class January–February 2008 with 15 participants

- “...the first week, I met someone and that’s what made me go back. She had the same diagnosis as me and felt on one was paying attention to her either. It’s so good to find someone from my planet because sometimes you feel like a total idiot complaining about pain that can’t seem to be fixed.”
- “Things changed in little bits and pieces during the program. I listened to the voice in me that I hadn’t been paying attention to by listening to others in the room. I realized I had to stop thinking about how I got here and start thinking about how I get out. I needed to take back the control I had given away to everyone else.”
- “It’s like being active again.”





## Anticipated Measurables from *Stay@Home with VON*

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- 10% reduction in Emergency Room visits by people with diabetes that previously visited the ER 2 or more times in previous year
- 10% reduction in hospital readmissions by people with diabetes that previously were admitted 1 or more times in previous year
- Patients/caregivers will report an increased ability to manage their own care and treatment plan
- Professional home health care providers will report an improved ability to triage their caseload
- CCAC will report improved utilization of specialized services and more focused care
- Hospital wait list will be contained or reduced



## Client Behaviour Change Indicators (Based on the 7 Chronic Disease Self-Mgmt Behaviours)

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- **Minimum of 1 chronic disease behaviour goal and action plan**
- **Minimum of 1 improvement in healthy eating**
- **Minimum of 1 improvement in ‘being active’**
- **Minimum of 1 improvement in ‘taking meds’**

- **Clinical Outcomes**
  - A1c levels, ↓ BP and/or ↓ weight if target set on admission
- **Health Services Utilization**
  - # ED visits/hospitalizations over year
  - # ambulance calls over year when transport is refused
- **Nursing Skills and Knowledge**
  - Increase in knowledge re self-mgmt support
  - # times Knowledge Education” is listed as an intervention vs. # of other interventions used

## Challenges and Key Learnings

***You learn something new every  
day.....***

## Use Multiple Marketing Strategies... Both internally and externally

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- **Initially, interest is keen, however follow through is not guaranteed**



- **Designation of a dedicated resource in the community for access by referral sources**
- **Added benefit of building community partnerships and strengthening existing relationships**
- **Ask for input from staff re CQI opportunities – *be sure to implement staff input!!!***

**Lesson #1: *Never underestimate the need for communication!!!***

## Expect resistance and plan for it

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- **Technology can be uncomfortable and frightening to those unfamiliar with it**



- **Plan education, training, and mentoring**
- **A visible, hands-on champion is appreciated by staff**
- **Make friends with the IT team...you're going to need them!**

### **Lesson #2:**

***Never underestimate the need for contingency planning!!!***

Remember the little train that could.....

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- I think I can...I think I can...I know I can...

- Time spent in planning will save you time in the future

**Lesson #3:**

***Never underestimate the need for perseverance!!!***

## Lesson #4:

*Never underestimate the power of team work!*







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***Thank you!!***