Chronic Disease Prevention and Management

A Comprehensive Approach to Vascular Protection

Essex County Medical Specialists

Chair: Dr. Al Kadri

MADE IN WINDSOR

Chronic Disease Management Community Health and Wellness Centre Conceptual Model

The Epidemic

Cardiovascular disease is the leading cause of death in Canada,accounting for at least 36% of all deaths or about 80,000 people each year

More than 450,000 Canadians were hospitalized for cardiovascular disease in 2000

Cardiovascular disease is the most costly disease affecting Canadians. In 1998, it was responsible for $18.8 billion in expenditures, 11.8% of the total cost of all illness in Canada

-Canadian Institutes of Health Research (CIHR)

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The Epidemic

Heart disease and stroke has killed more women than men in Windsor-Essex County from 1981 to 1996.

For every woman that dies from breast cancer in Windsor-Essex County, more than nine are killed by heart disease and stroke.

Ischemic heart disease, the most common form of circulatory disease, has killed WEC residents at a higher rate than Ontario as a whole - over 19 % higher on average between 1984 and 1995

In Windsor-Essex County, 29% of residents 18 years and older are current smokers. This is significantly higher than the Ontario average and represents over 78,000 smokers - 91% of whom are daily smokers.

Source: Heart Health Action Windsor Essex

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Background

Vascular disease affects virtually every organ system across numerous medical specialties (cardiac, renal, cerebral, peripheral)

Risk factors are multiple – HTN, DM, Dyslipidemia, Smoking, Obesity - and common in our society

Early intervention strategies to prevent and manage risk factors and early chronic disease can have a profound impact on patient outcomes (MAU, Glycemic control, BP targets, Statin studies) – the evidence is overwhelming

Patients currently must go to multiple different sites for care that tends to be very inter-related

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Diabetes and Metabolic

It is estimated that 40 per cent of Canadians with living with diabetes will develop long term complications

Canadian adults living with diabetes are twice as likely to die prematurely than non-diabetics

For people living with type 2 diabetes, life expectancy may be shortened by five to10 years

Every year, diabetes is a contributing factor in the deaths of some 41,500 Canadians

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Diabetes and Metabolic

Diabetes affects more than 800,000 people, or 8.73 per cent of Ontario's population

Approximately 80 per cent of people living with diabetes will die as a result of heart disease or stroke

The financial burden for people living with diabetes is two to three times higher than it is for those without diabetes with direct costs for medications and supplies between $1,000 and $15,000 a year

The Canadian Diabetes Association estimates that diabetes and its complications cost the Canadian healthcare system approximately $13.2 billion every year

- CDA, MOHLTC, Public Health Agency of Canada

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Diabetes and Metabolic

THE NEED:

TO CO-ORDINATE SPECIALTY DIABETIC CARE FOR PATIENTS IN WINDSOR-ESSEX

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Hypertension

The management of hypertension is all about global risk management and vascular protection

- CHEP 2010

Hypertension is a significant risk factor for:

- cerebrovascular disease
- coronary artery disease
- congestive heart failure
- renal failure
- peripheral vascular disease
- dementia
- atrial fibrillation
- erectile dysfunction

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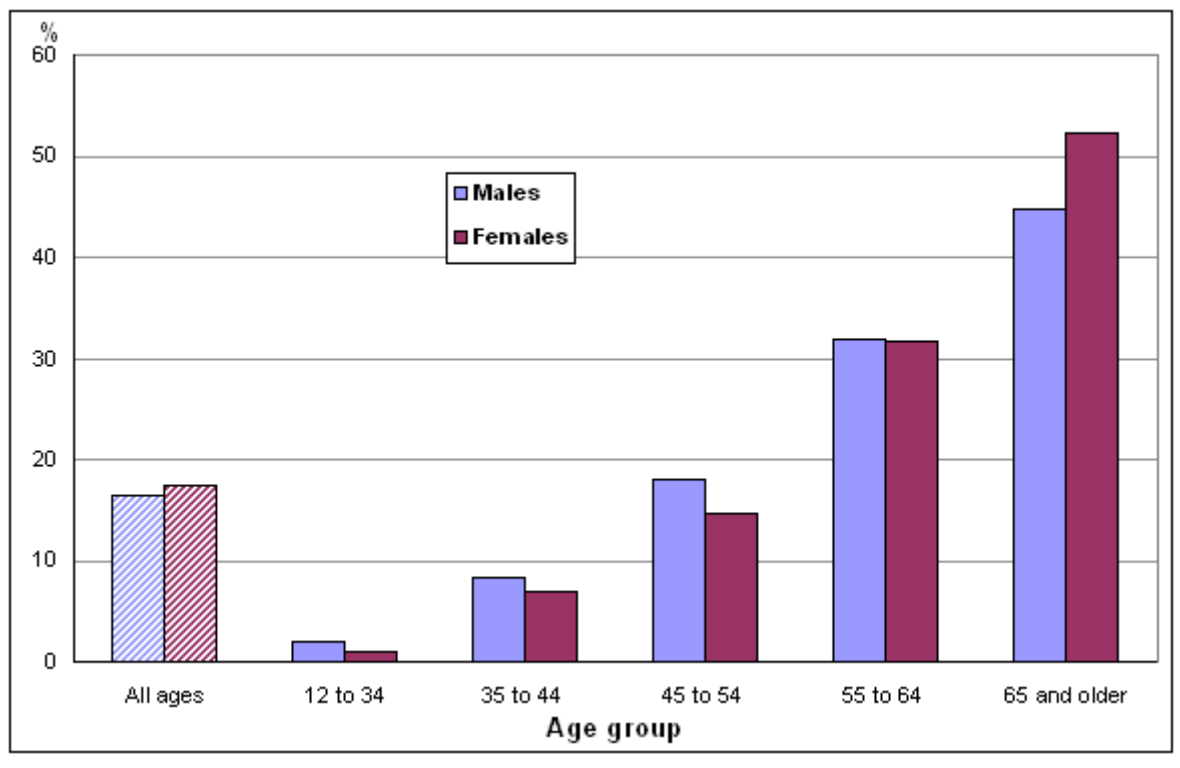
Hypertension

Percentage diagnosed with high blood pressure in Canada – 2009

Source: Canadian Community Health Survey, 2009.



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Benefits of Treating Hypertension

Younger than 60 (reducing BP 10/5-6 mmHg)

- reduces the risk of stroke by **42%**
- reduces the risk of coronary event by **14%**

Older than 60 (reducing BP 15/6 mmHg)

- reduces overall mortality by **15%**
- reduces cardiovascular mortality by **36%**
- reduces incidence of stroke by **35%**
- reduces coronary artery disease by **18%**

Older than 60 with isolated systolic hypertension – treating to target

- 42% reduction in the risk of stroke
- 26% reduction in the risk of coronary events

- Lancet 1990, 1997, CHEP 2011

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Conceptual Model

Hypertension

THE NEED:

TO ESTABLISH A REGIONAL HYPERTENSION SPECIALTY CENTRE FOR PATIENTS IN WINDSOR-ESSEX

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Vascular

Cost to treat chronic leg ulcers in Ontario - **$1,474,429,600** (2005)

Diabetic foot ulcers are leading cause of amputations

Estimated 1,500 Ontarians with diabetes had a limb amputated in 2008.

30% of Canadians with DM will die within one year of amputation

51% of those with a first amputation in 2006 had second limb amputated by 2011

50% may have been prevented by appropriate footwear and more effective footcare

- Public Health Agency of Canada, 2008

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Chronic Kidney Disease

Vast majority of CKD cases are due to DM, HTN and vascular disease - 80% of CKD patients will die of cardiovascular disease

An estimated 2.6 million Canadians have kidney disease, or are at risk

In 2009, there were nearly 38,000 Canadians on renal replacement therapy – more than triple the number in 1990

2.2 billion dollars spent yearly on dialysis in Canada

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Neurology

There are over 50,000 strokes in Canada each year. That's one stroke every 10 minutes

Stroke is the third leading cause of death in Canada. Each year, nearly 14,000 Canadians die from stroke

Stroke costs the Canadian economy $3.6 billion a year in physician services, hospital costs, lost wages, and decreased productivity

- Statistics Canada 2010

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Pain management

Diabetes and Vascular Disease lead to both neuropathic and ischemic pain that can be very debilitating

Specialty pain management strategies are needed within communities to address this issue appropriately

Multiple physician involvement, inaccessible records, lack of co-ordination of care, and absence of dedicated pain services can lead to both inappropriate prescribing

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Peri-operative Assessment

Predictors of Increased Risk for Perioperative Cardiac Complications

Major	Intermediate	Minor
Recent MI (within 30 days)	Mild angina	Advanced age
Unstable or severe angina	Prior MI by history or ECG	Abnormal ECG
Decompensated CHF	Compensated or prior CHF	Rhythm other than sinus
Significant arrhythmias	Diabetes mellitus	Poor functional capacity
Severe valvular disease	Renal insufficiency	History of stroke

- ACC/AHA 2007 Guidelines

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Peri-operative Assessment

Peri-operative period is the time of greatest risk for complications in the this patient population leading to increased morbidity, mortality and acute care costs

Multiple clinical issues arise that need a co-ordinated approach to minimize complications:

- appropriate pre-operative testing
- use of cardio-protective medications
- anti-coagulation and DVT prophylaxis management
- diabetic and anti-hypertensive medication management
- antibiotic prophylaxis and therapy
- co-ordination of post-operative care
- need for intensive care beds for recovery

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Vascular Health

THE NEED:

TO CO-ORDINATE SPECIALTY VASCULAR AND RENAL CARE FOR PATIENTS IN WINDSOR-ESSEX

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Multidisciplinary Stone Clinic

10% of adults will develop kidney stones and can become a recurring problem

Stone prevention is an important part of treatment

There is often a metabolic basis for stone development and appropriate testing can uncover

A multi-specialty (nephrology, endocrinology, urology, radiology) and multi-disciplinary (nursing, dietician, pharmacist) can reduce incidence and complications

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Health Care Costs

63 year old male, retired accountant – Diabetes, Hypertension, PVD, CKD, Dyslipidemia presents to ER with chest pain and SOB – January 2010

	Cost ($)
Myocardial Infarction	10, 000
Coronary Angiogram	10, 000
Coronary Bypass Surgery	10, 000
Dialysis	50, 000
Amputation	50, 000
Stroke	50, 000
Total Acute Care Costs 2010	180,000

Remember… this is ONE patient!

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Endocrinologist

Family MD

Nephrologist

Urologist

Cardiologist

Internist

Neurologist

Vascular Surgeon

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Multiple Visits

Discontinued preventative therapy

Inaccessible Files

Increased ER visits

Duplicate Labs and Imaging

Increased Wait Times

Increased acute complications

Poly-pharmacy

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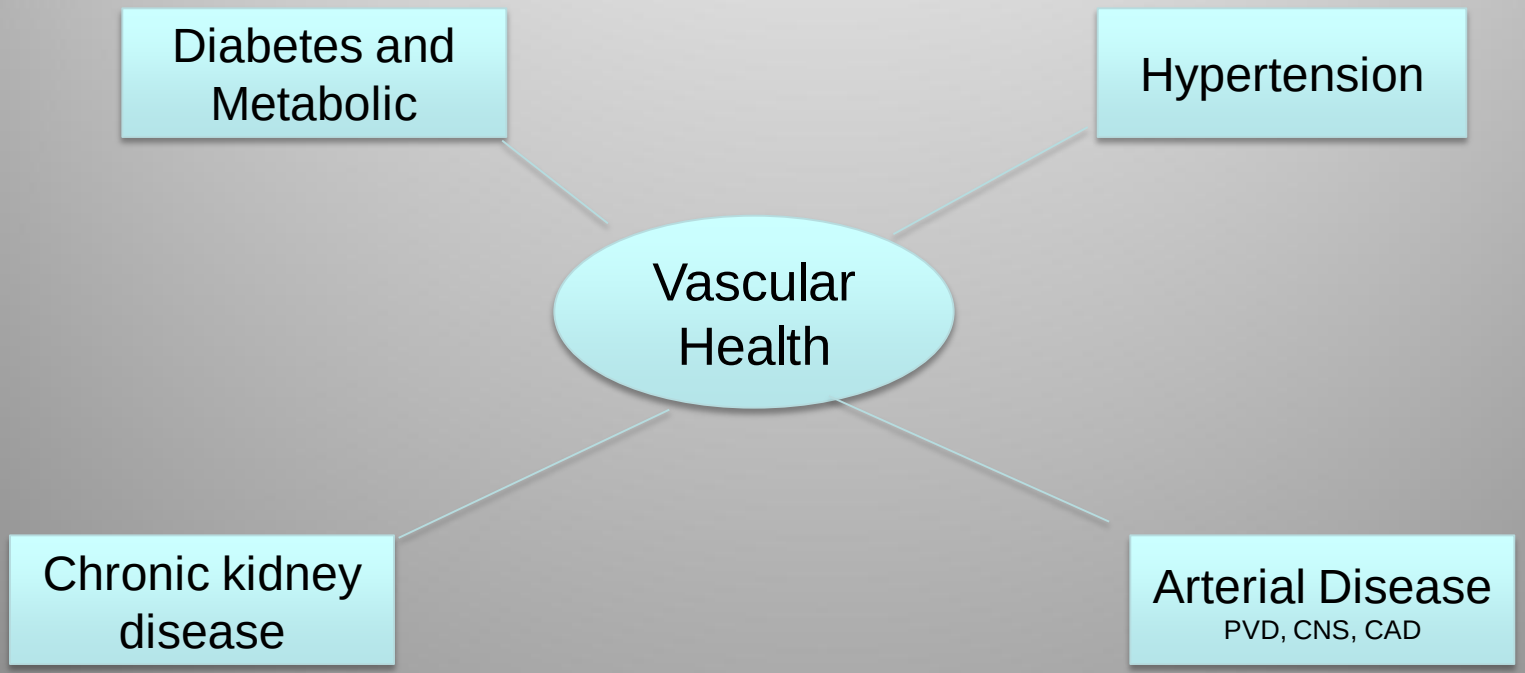
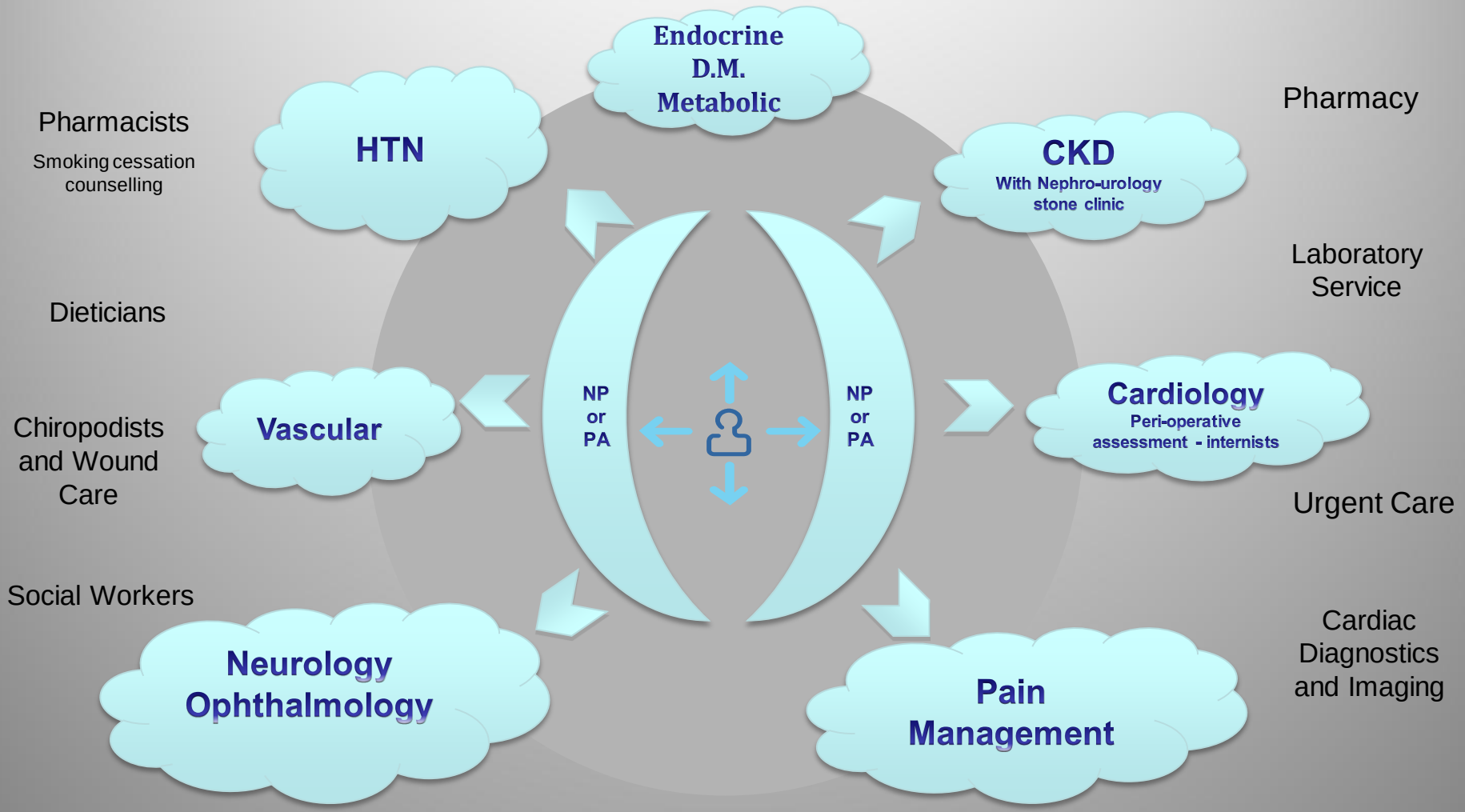
Cornerstones of Care:



Conceptual Model –

Chronic Disease Management Community Health and Wellness Centre

Draft - 1
August 2011



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Cardiac and Diagnostic Imaging

On-site availability of xray, U/S, and cardiac diagnostics to enhance timely care and management

Laboratory Support

On-site and automatically incorporated into EMR for patient and physician convenience and to reduce duplication

Pharmacy Support

On-site for medication review and reduce medication errors as well as for special drug program access (EPO)

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Urgent Care Component

ER outreach – for patients that need acute issues assessed - run by ER docs – liason to acute care facility

EMR captures issues and changes in therapy

Co-ordinated care with treating specialists

ER can triage to urgent care centre as appropriate – Reduced strain on ER Dept.

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Multi-Disciplinary Services

Essential for providing comprehensive services:

- Nurse practioners/Physician Assistants
- Dieticians
- Pharmacists
- Social Workers
- Enterostomal Therapy
- Chiropodists
- CCAC – PT/OT/nursing

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Smoking Cessation Strategy

In Windsor-Essex County, 29% of residents 18 years and older are current smokers. This is significantly higher than the Ontario average and represents over 78,000 smokers – 91% of whom are daily smokers

Smoling increases the risk of heart disease and stroke by 3x that of non-smokers (23x the risk of lung cancer, 12x the risk of COPD)

A comprehensive multi-disciplinary strategy is needed to properly address this issue including lifestyle and behavioural modification, counselling, pharmacists, social workers, physicians etc.

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Electronic Medical Record

Co-ordinated care without duplication of tests, consultations

Avoids medication errors

Interdisciplinary communication enhanced for higher quality care

Research opportunities due to uniform database

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Advantages

Single EMR – enhanced information sharing
Better co-operation of specialists in care mapping
Less medication errors and adverse drug interactions
Improved adherence to preventative care therapies
Improved Access to timely care
Improved compliance
Promote Wellness – not illness
Prevention of Acute and Chronic Disease
Reduced wait times
Parking Availability
One stop Shopping – single site for allied health care professionals and services
Extended Hours of Operation
Community presence
Research opportunities – single data based with enhanced collaboration

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Benefit To Community

New Services That Were Lacking:

Specialist Diabetic Care Centre

Regional Specialty Hypertension Clinic

Vascular Health Care Centre

Regional Kidney Care Centre

Multi-disciplinary Kidney Stone Clinic

Comprehensive Smoking Cessation Clinic

Made in Windsor Solution:

Tailored to meet local needs by local experts

MADE IN WINDSOR

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Effective Strategies for CDPM:

The 4 P's

Physician Leadership - Co-ordination from local experts

Pan-specialty approach to risk factor modification

Public awareness strategies

Patient adherence and self-management strategies

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Faculty

Endocrinology

- Dr. Arthur Kidd
- Dr. Joseph Shaban
- Dr. Raphael Cheung
- Dr. Robert Wilson
- Dr. Ibrahim Treki
- Dr. Tyceer Abouhassan
- Dr. Rabih Nour

Nephrology

- Dr. Albert Kadri
- Dr. Wayne Callaghan

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Faculty

Cardiology

- Dr. Amr Morsi
- Dr. Roland Mikhail
- Dr. Nisar Huq

Internal Medicine

- Dr. Wasim Saad
- Dr. Osman Tarabain
- Dr. Abdel-Aziz Ahmed
- Dr. Larry Jacobs
- Dr. Avi Wasserman
- Dr. Simon Shanfield

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Faculty

Neurology

- Dr. Michael Winger
- Dr. Abdul Hakim Mustafa

Vascular Surgery

- Dr. Carmen Iannicello

Urology

- Dr. Hussein Khalaff
- Dr. Bassel Al-Farra
- Dr. Raj Goel
- Dr. Tom Deklaj

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Faculty

Diagnostic and Advanced Cardiac Imaging

- Dr. Jack Speirs
- Dr. Kevin Tracey

Emergency

- Dr. Gord Vail
- Dr. Dean Favot
- Dr. Anthony Pozzi

Ophthalmology

- Dr. Fouad Tayfour
- Dr. Barry Emara

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Location

2480 Ouellette Avenue

- Highly visible, central location
- Bus Route Access
- Adjacent to large existing Health Centre
- Minutes from both hospitals, Expressway, 401, Downtown
- Exisiting Building One floor, Handicap accessible
- Over 12,000 square feet with room for expansion
- Ample parking - adjacent lot purchased

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Community Partnerships

HDGH
- lead hospital affiliation
- acute vascular care at HDGH (cardiac, renal, vascular)
- community based prevention model would be ideal fit

SWOMEN
- teaching and research opportunities

Kidney Foundation

CCAC

……etc. Collaboration is the key to success!

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THE ASK:

Existing site will need architectural re-design

Renovation to suit clinic needs

Operational funding and multi-disciplinary care support