Northern Ontario School of Medicine Conference
June 3, 2006

Use of Medical Directives in Diabetes Management at GHC

Cynthia MacKay, RD,CDE, Department Head, Diabetes
Dr. Pauline Bragaglia, Physician Champion, Diabetes

The Ultimate Champion

Instrumental in promoting a team approach and the use of medical directives in diabetes care.

His leadership and untiring efforts left a legacy of excellence.

Dr. Hui Lee
1964 - 2004

THE GROUP HEALTH CENTRE

A unique community-sponsored, not-for-profit, inter-disciplinary health organization serving 60,000 registered patients in Sault Ste Marie

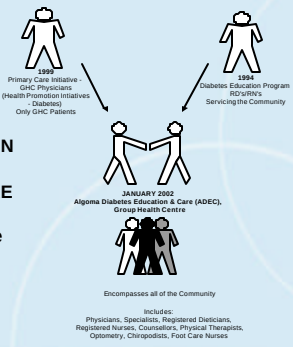
- 38 General Practitioners
- 18 Specialists
- 9 Associate and Visiting Specialists
- 8 Nurse Practitioners
- Allied Health Professionals
- 97 Registered Nurses (full and part time)
- Electronic medical record (EMR) since 1997

The GHC Model

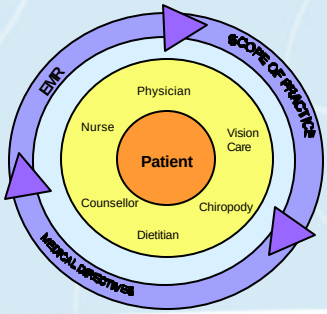
… an example of a different approach to service delivery that involves individuals in their own care, makes better use of health providers, and uses leading-edge infrastructure and technology to help achieve better health outcomes.

Group Health Centre is the health care partnership of the Sault Ste. Marie and District Group Health Association and the Algoma District Medical Group. The two groups are linked together by a common objective -- to provide excellent, innovative, comprehensive health care to meet the needs of the community.

THE EVOLUTION OF DIABETES CARE in Sault Ste. Marie



A Comprehensive Program



Medical Directive

…a written order
for a drug / intervention / test procedure
that applies to a range of clients
when specific conditions are met and
when specific circumstances exist

Evolution of Medical Directive Use in Diabetes Care

- Reviewed Regulated Health Professions Act (RHPA)
- Reviewed Scope of Practice for Registered Nurses and Registered Dietitians as per each College in Ontario
- 2003 - Developed the ADEC Diabetes Medication Adjustment Policies and Guidelines Manual
  - Certification criteria
  - Patient eligibility criteria
  - Policies and guidelines for both insulin and oral diabetes medications

Medical Directive Use cont'd…

- March 2004 - ADEC staff completed certification process
- April 2004 - Implemented Medical Directives
- ADEC referral form within the EMR is the tool used by physicians to sign authorization to adjust insulin and/or oral medications

Evaluation of Medical Directives

Objective:
To determine whether the use of medical directives for insulin dose adjustment is:

- »Efficient
- »Effective
- »Accessible
- »Accountable

Methodology: Sample Selection

Physician

- Physicians in GHC office practices

Patient

- Patients drawn from ADEC EMR templates (Sept - Dec 04)
- On Multiple Daily Injections (MDI)
- Signed medical directive
- Met eligibility criteria

Methodology: Tools

Physician

- Survey re: Use of Medical Directives in Diabetes (unvalidated)
- EMR

Patient

- Survey re: Insulin Delivery System Rating Questionnaire (IDSRQ) (validated)
- Survey re: The Assistance of the Diabetes Educator with Insulin Dose Adjustment (unvalidated)
- EMR

Results

Physician Sample Characteristics

Measure	Number of Items
# of GPs in office at GHC	33
sample size surveyed (2 away on sabbatical)	31
# of responses	25
# who did not respond (due to vacation)	3
# who did not respond (unknown reason)	3

Patient Sample Characteristics

Measure	Number of Items
Sample Size	93
# with Type 1	46
# with Type 2	47

Survey Tool: The Insulin Delivery System Rating Questionnaire (IDSRQ)

From: Peyrot, Mark and Richard R. Rubin. 2005. Validity and Reliability of an Instrument for Assessing Health-Related Quality of Life and Treatment Preferences. Diabetes Care: 28(1):53-58.

IDSRQ Patient Sample Characteristics

Measure	Number of Items	Mean	Actual Range
Sample Size	47 / 93	--	--
# of Females	24 (51.1%)	--	--
# of Males	23 (48.9%)	--	--
# with Type 1	21 (44.7%)	--	--
# with Type 2	26 (55.3%)	--	--
Avg yrs with Diabetes	--	22.6	3 - 58
Avg age at diagnosis	--	36.8	5 - 75
Avg age of start of Insulin	--	43.6	6 - 78
Avg yrs on Insulin	--	17.5	1 - 68

Physician Survey Results

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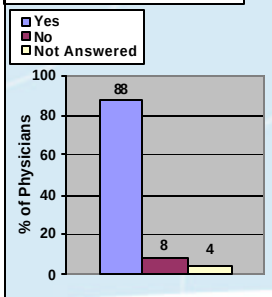
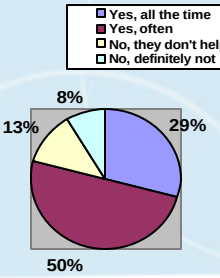
Physician awareness of the Medical Directives for insulin dose adjustment



Physician use of the Medical Directives for insulin dose adjustment



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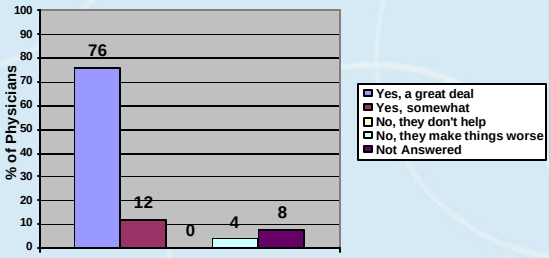
Physician Response: Medical directives in diabetes are **effective** in helping patients with adjusting their insulin doses



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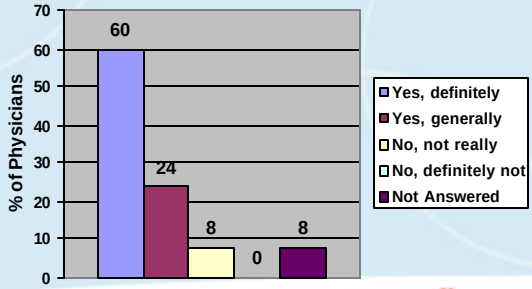
Physician Response Medical Directives for insulin dose adjustment **lessen** their workload with this patient population



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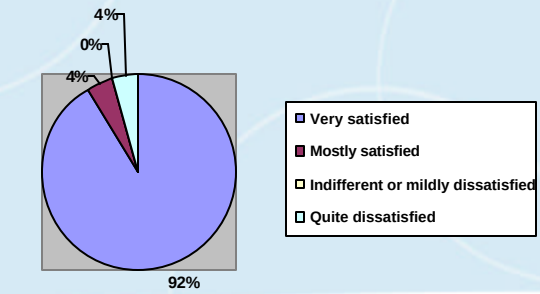
Physician Response: **Satisfaction** with the Use of Medical Directives for Insulin Dose Adjustment



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Patient Survey Results

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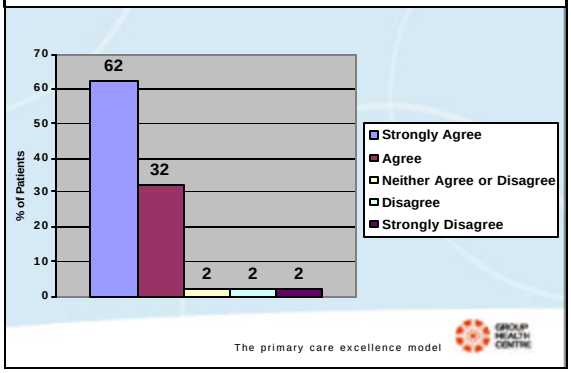
Patient Response: A Diabetes Educator can provide instruction regarding insulin dose adjustment **as well as** a physician



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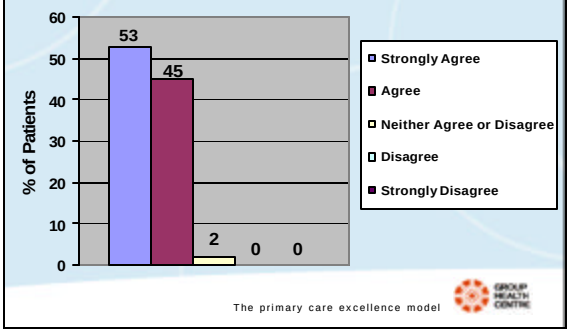
Patient Response: The Diabetes Educator **helps me more** with my insulin than my physician.



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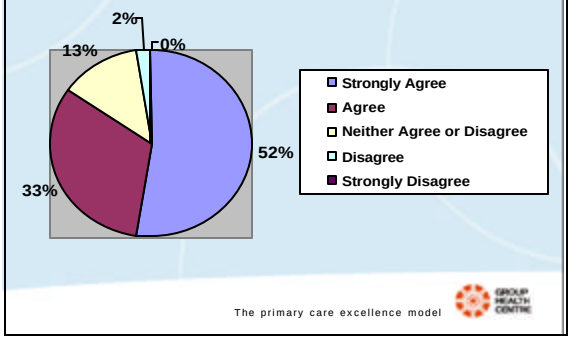
Patient Response: It is **easier and faster** to contact my Diabetes Educator than my physician when my blood sugars are elevated



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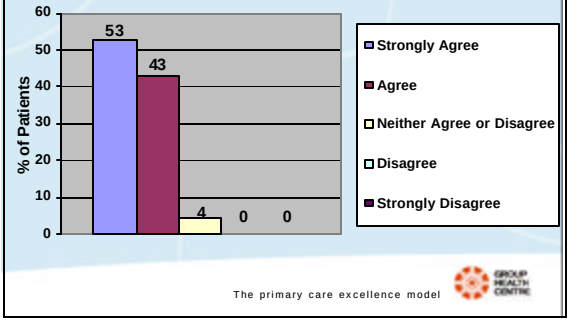
Patient Response: The Diabetes Educator has helped me to feel **more confident** adjusting my own insulin



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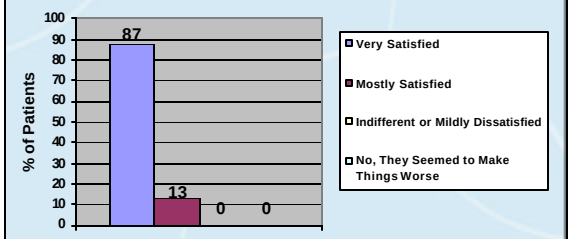
Patient Response: Overall **satisfaction** with the Diabetes Educator assisting in insulin dose adjustment



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Results:

Insulin Delivery System Rating Questionnaire (IDSRQ)

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Statistics of Insulin Delivery System Rating Questionnaire (Total Sample)

	Mean	Actual Range
Treatment Satisfaction	80%	61.70 - 91.49
Daily Activity Interference	22%	8.52 - 31.92
Clinical Efficacy	83%	68.09 - 89.36
Diabetes Worries	23%	6.39 - 39.42
Psychological Well-being	65%	36.18 - 93.62
Social Burden	18%	2.13 - 38.30

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Statistics of Insulin Delivery System Rating Questionnaire Type 1 and Type 2 Comparison

	Initial Mean	Actual Range
Treatment Satisfaction	72%	47.62 - 90.48
	87%	73.08 - 92.31
Daily Activity Interference	23%	4.76 - 42.86
	21%	7.70 - 38.46
Clinical Efficacy	83%	66.67 - 95.24
	83%	69.23 - 92.31
Diabetes Worries	29%	4.76 - 47.62
	19%	7.69 - 38.46
Psychological Well-being	73%	42.86 - 100
	59%	30.77 - 88.46
Social Burden	17%	0 - 42.86
	19%	3.85 - 50.00

Type 1 ☐
Type 2 ☐

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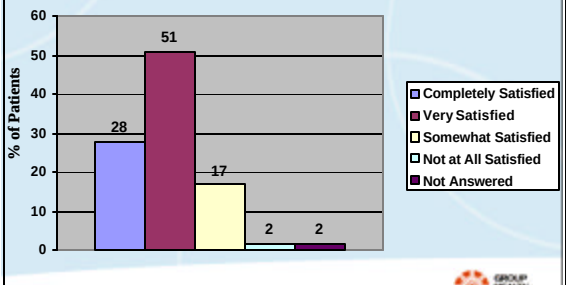
Overall Satisfaction with Insulin Delivery System
(Type 1 and Type 2 patients)



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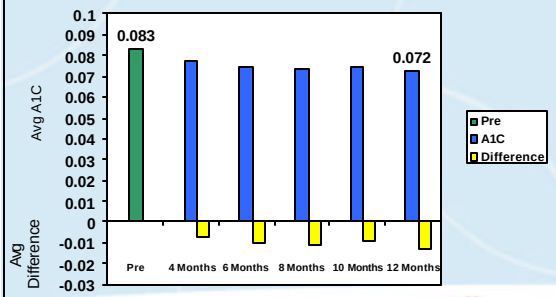
A1C Results of All Patients



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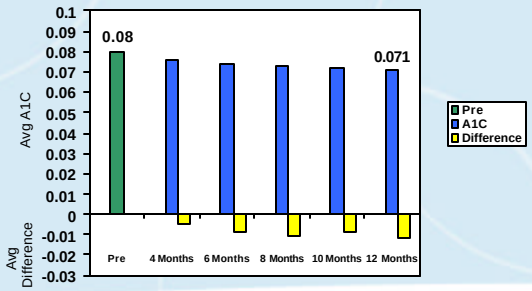
A1C Results of Type 1 Patients



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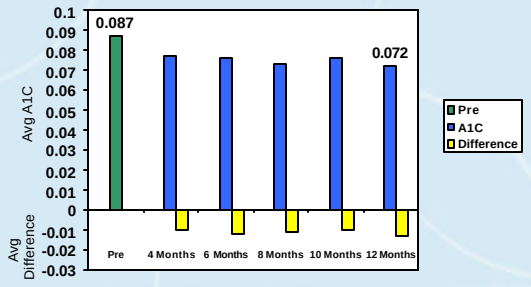
A1C Results of Type 2 Patients



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After 6 months of using the medical directive…

In a sample of 93 patients:

- 49% of those with Type 1 diabetes showed average drop in A1C by **1.1%**
- 51% of those with Type 2 diabetes showed average drop in A1C by **1.3%**

After 12 Months…. Results maintained

In a sample of 93 patients:

- 49% if those with Type 1 diabetes showed average drop in A1c by **1.2%**
- 51% of those with Type 2 diabetes showed average drop in A1c by **1.3%**

Significance of Results

Challenging population:

- Patients on MDI
- 50% of patients have Type 1 diabetes
- Previously on insulin
- Long standing diabetes

1% decrease in A1C results in a 25-33% reduction in diabetes-related complications for both Type 1 and Type 2 diabetes

(Diabetes Complications & Control Trial (DCCT), 1993
United Kingdom Prospective Diabetes Study, (UKPDS), 1998)

Conclusions

The use of medical directives for insulin dose adjustment are:

- »Efficient
- »Effective
- »Accessible
- »Accountable

Efficient

- Maximizes RN and RD scope of practice
- Lessens physician workload
- Achieves improved blood glucose for patient
- Provides more timely access to diabetes care

Effective

Physician:

- Physicians support the use of medical directives in diabetes care
- Physicians are satisfied

Patient:

- Improved glycemic control
- Increased patient confidence to self manage
- High clinical efficacy
- Minimal daily activity interference
- Patients are satisfied

Accessible

- More timely access to diabetes care
- Empowered patient to self manage
- More patient contact

Accountable

- Results indicate >1% improvement in A1C after 6 months and maintained after 12 months
- Better use of physicians who are in short supply
- Can treat more patients with diabetes

Secrets of Success !!!

- Physician Support
- Policy and Guidelines Manual
- Comprehensive Team
- Empowered Patients

THANK YOU!

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