

A Group Approach to Improving Individual Diabetes Care

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Background

A Brief Review of Group Visits

- Group visits have been implemented in managed care settings since the mid-1990's.
- The main focus has been on chronic illness: diabetes, asthma, osteoporosis, coronary artery disease.
- No single model or definition exists.

Three Group Visit Models

1. Cooperative Health Care Clinic
 - High-utilizing elderly patients are seen regularly over a given time period
2. Combination of Medical Visits + Group Education
 - Booked in advance with continuity over specified time frame
3. "Drop-in Clinic"
 - Patients with a particular illness can drop-in during a certain time period on monthly basis

Group Visit Variability

- Conducted by medical doctors, nurses, and health educators
- Different models exist depending on the disease and the patient population
- Structure depends on whether they are conducted in a managed care setting, a nationalized health care setting, or a fee for service setting

Billing for Group Visits

- No special billing codes exist
- Not an issue in managed care or nationalized health care settings
- Continue to use the traditional office visit Evaluation and Management (E&M) codes employed in standard one-on-one office visits

Benefit of Group visits

1. Decreased utilization, hospitalizations, ER visits, and subspecialty referrals (Scott et al., 2004)
2. Improved metabolic outcomes (Trento et al., 2001)
3. Patient and provider satisfaction with this mode of health care delivery (Clancy et al., 2003)
4. Potential cost benefit through increased provider productivity (Noffsinger & Atkins, 2001)

Diabetes Group Visits

- Original studies conducted in the late 1990's, at the University of Turin, Italy by Dr. Marina Trento.
- Randomized controlled clinical trial, N = 112
 - 56 patients were allocated to groups of 9 or 10 individuals who participated in group visits
 - 56 underwent individual visits plus support education

(Trento et al., 2001)

Table 2—Clinical data of patients at the beginning and end of the study

	Group patients		Control subjects		Statistical significance
	Beginning of study	End of study	Beginning of study	End of study	
n	56	43	56	47	—
Sex (M/F)	27/29	22/21	34/22	30/17	NS
Age	62.0 (35–80)	63.0 (37–82)	61.0 (43–78)	64.0 (45–80)	NS
Schooling*	N=15, P=31, M=5, H=3, U=0	N=11, P=24, M=5, H=3, U=0	N=2, P=41, M=11, H=1, U=2	N=1, P=33, M=11, H=0, U=2	†
Occupation‡	H=14, R=24, W=4, B=7, O=7	H=11, R=18, W=3, B=6, O=5	H=10, R=27, W=2, B=8, O=9	H=7, R=24, W=2, B=7, O=7	NS
Known duration of diabetes (years)	9.4 (1–23)	11.7 (3–25)	9.8 (1–39)	12.3 (3–41)	NS
Attendance in clinic (years)	4.8 (1–11)	6.8 (3–13)	4.8 (1–9)	7.0 (3–11)	NS
Family history of diabetes	37	30	31	25	NS
Self-monitoring blood glucose	12	10	16	14	NS
Smoking (currently/never/stopped)	10/32/14	6/25/12	15/27/14	11/20/14	NS
Hypertensive	34	26	25	22	NS
Hypoglycemic treatment:					
Diet only	6	2	10	5	NS
Sulphonylureas	27	18	21	13	NS
Metformin	5	3	6	6	NS
Sulphonylureas + metformin	18	18	19	25	NS
Insulin	—	2	—	5	NS
Quality of life (DQOL/Mod score)	67.6 ± 19.0	55.6 ± 15.9	66.7 ± 25.0	80.8 ± 31.5	P < 0.001
Knowledge of diabetes (GISED score)	14.9 ± 7.9	24.0 ± 6.6	20.2 ± 7.4	17.4 ± 8.6	P < 0.001
Health conduct (CdR score)	11.1 ± 2.7	15.8 ± 2.9	12.0 ± 4.3	11.3 ± 4.3	P < 0.001
Body weight (kg)	77.4 ± 13.1	76.0 ± 13.4	78.2 ± 14.6	77.1 ± 14.7	NS
BMI (kg/m ²)	29.7 ± 4.5	29.0 ± 4.4	27.8 ± 4.1	27.6 ± 4.2	P = 0.06
Fasting blood glucose (mmol/l)	9.8 ± 2.6	9.9 ± 2.7	10.0 ± 3.1	9.2 ± 2.9	NS
HbA _{1c} (percentage of total hemoglobin)	7.4 ± 1.4	7.5 ± 1.4	7.4 ± 1.4	8.3 ± 1.8	P < 0.002
Total cholesterol (mmol/l)	5.8 ± 1.1	5.7 ± 1.2	5.5 ± 0.9	5.6 ± 1.2	NS
HDL cholesterol (mmol/l)	1.2 ± 0.3	1.4 ± 0.4	1.3 ± 0.3	1.3 ± 0.3	P < 0.05
Triglyceride (mmol/l)	2.6 (0.7–11.5)	2.1 (0.7–6.9)	1.7 (0.5–5.2)	1.7 (0.6–3.9)	P = 0.53
Creatinine, (µmol/l)	91.6 ± 14.2	88.8 ± 16.5	90.0 ± 14.0	87.8 ± 17.2	NS
Albuminuria (none/micro or macro)	32/24	20/21	37/19	19/22	NS
Diabetic retinopathy (none/mild/more severe)	42/8/6	35/5/3	38/13/5	33/7/7	NS
Foot ulcers (never/past/active)	54/0/2	42/1/0	53/2/1	45/1/1	NS

Data are mean ± 1 SD, median range, or absolute numbers, as applicable. *N = No formal education, P = primary school, M = middle school, H = high school, U = university degree; †patients followed by group consultations had less education than those in one-to-one care (N versus P versus all others, $P < 0.01$; N versus all others, $P < 0.005$); ‡H = housewife, R = retired, W = white-collar worker; B = blue-collar worker, O = other.

(Table 2 from Trento et al., 2001)

Outcomes Two Years Later

Group Visit Arm

- HbA1c levels lower
- HDL levels higher
- BMI lower
- Triglycerides lower
- Improved knowledge of diabetes
- Improved quality of life
- Greater satisfaction with their health care

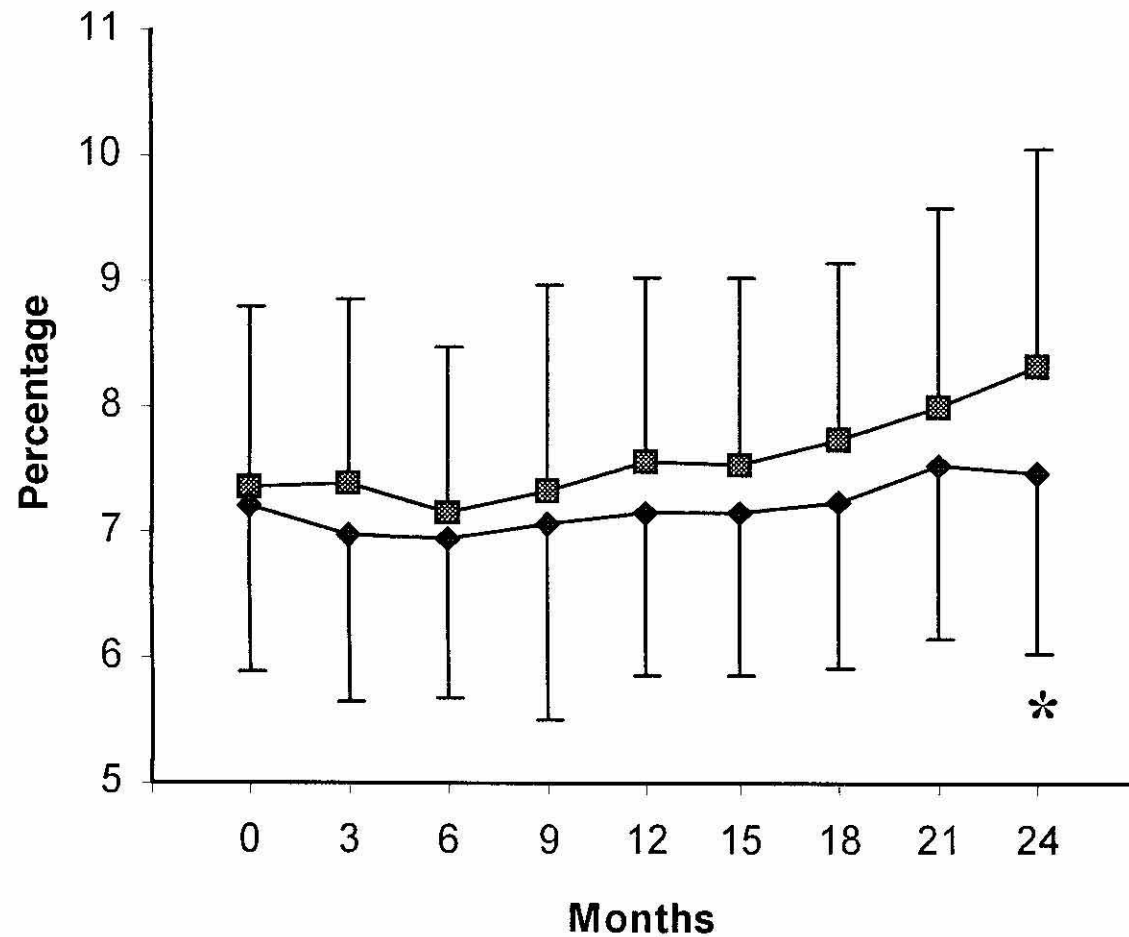


Figure 1—Levels of HbA_{1c} in the patients who participated in group visits (◆, case subjects) and those who received individual care and education (▣, control subjects). * $P = 0.015$.

(Figure 1 from Trento et al., 2001)

Follow Up Study University of Turin, Italy

- 5-year randomized controlled clinical trial
- Hospital-based secondary care diabetes unit
- 120 patients with non-insulin-treated diabetes
- Group visits every 3 months as compared to individual care

(Trento et al., 2004)

Outcomes 5 Years Later

Group Visit Arm

- HbA1c levels remained low
- HDL remained high
- BMI remained low
- Knowledge of diabetes and problem solving ability improved
- Improved quality of life

Further Studies Show Group Visit Benefits

- Patients in the group visit model have:
 - Improved sense of trust with their health care provider
 - Better follow up and coordination of care
 - General acceptance of this type of care

(Clancy et al., 2003)

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Clinical Effectiveness and Patient Safety Grant
University of Colorado Denver School of Medicine
2008

University Medicine-Anschutz Medical Campus and
University Medicine-Denver

Feasibility Study

- Implement diabetes group visits into the University Medicine-Anschutz (AMC) and University Medicine-Denver clinics
- In 2007, 26 providers at University Medicine-AMC saw over 16,000 patients-1196 unique diabetics.
- 17 providers at University Medicine-Denver saw over 15,000 patients-925 unique diabetics.

Who is Participating?

- Adult (age > 18), English-speaking patients with type II diabetes
- Patients with a HbA1C \geq 6.5
- Exclude patients with cancer, terminal illness, cognitive deficits
- Patients were sent a letter inviting them to participate
- Maximum of 14 patients accepted at each site anticipating 6-12 patients at each group visit

Group Visit Model

Group Visits are:

- Physician run
- An individual medical visit + a group education session
- Within specific allotted times that allow the physician to see any patient individually if needed
- Booked in advance with patient and provider continuity for the duration of the visits
- Monthly for 3 months and then every 3 months to complete a year (6 visits total)
- 2-hour sessions

Group Visit Topics

- The meaning of diabetes
- Nutrition
- Exercise
- How to grocery shop
- How to eat out at a restaurant or a party
- Mood
- Coping skills
- Troubleshooting
- Medications

Where are we now?

- Group Visits have been successfully implemented at both clinic sites since February 2008
- 4 of 6 group visits have been completed
- Ingrid Lobo, MD leads group visits at University Medicine-AMC
- Nivedita Mahidhara, MD leads group visits at University Medicine-Denver

Interim Results

- Originally recruited 30 participants
- 20 were included in the interim data analysis
 - 6 never attended any group visits
 - 2 officially requested to be removed from the study – Both were independently well controlled diabetics who stated that they did not find the sessions helpful
 - 2 attended only one of the four sessions to date and were removed from all interim analyses due to lack of data
- Average attendance of 8 patients per session
 - Range = 6 - 11

Participant Demographics

- Among 30 originally recruited participants

	N (%)			
Gender	Male 9 (30)	Female 21 (70)		
Race*	Cauc. 12 (48)	Afr. Am. 10 (40)	Latino 2 (8)	Filipino 1 (4)
Age	Mean = 58 SD = 9.9			

* Only recorded for 25 participants.

Outcomes Measured

1. Clinical outcomes

- NCQA defined diabetes quality measurements
- Pneumococcal vaccination status

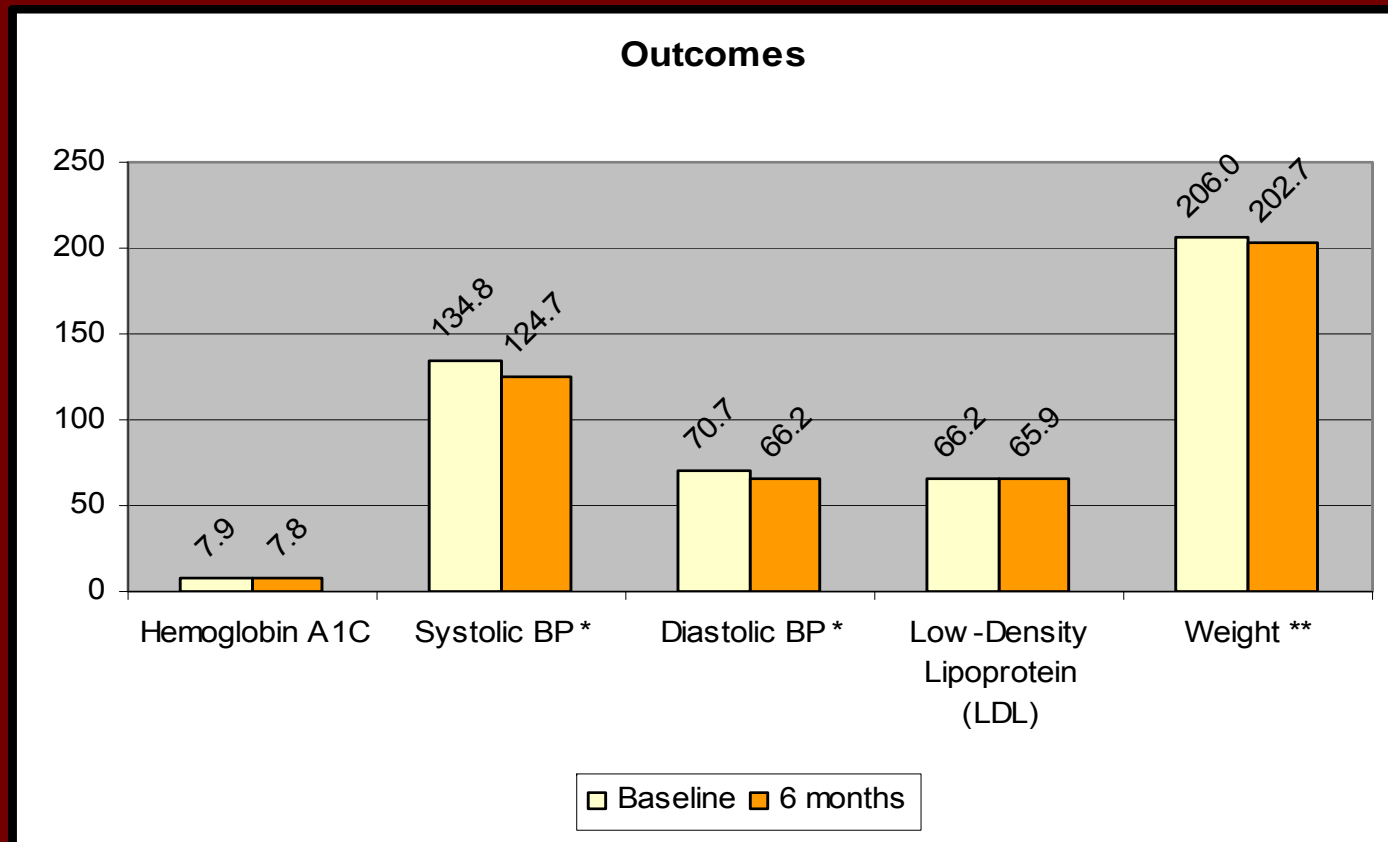
2. Knowledge of diabetes

3. Financial sustainability

4. Patient and provider satisfaction

Clinical Outcomes

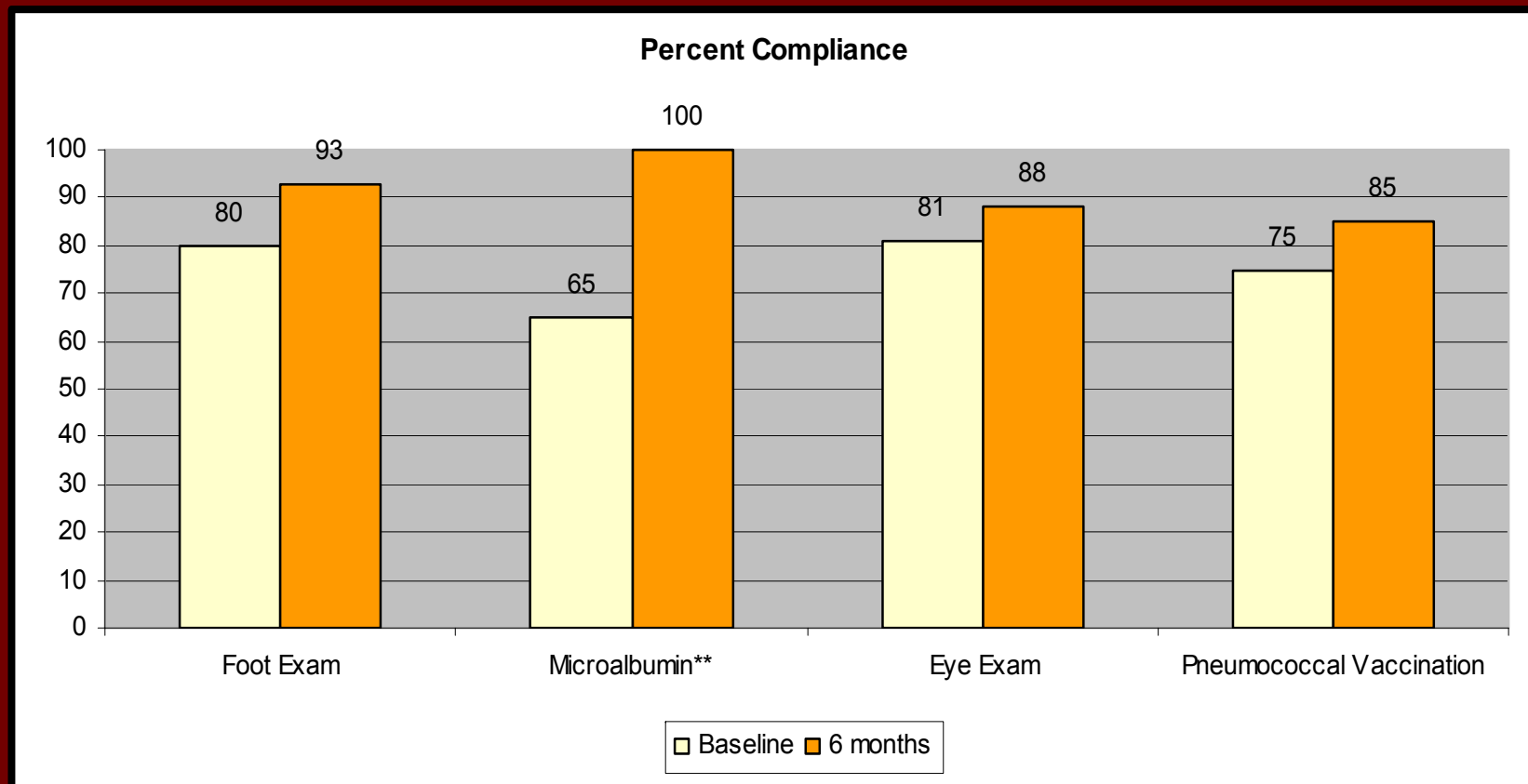
- Based on participants who attended \geq half of the group visits



* Indicates $p < .05$; ** Indicates $p < .005$; All other values were not significant.

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Financial Metrics

	Average ½ Day wRVU*	Average Group Visit wRVU
Provider 1	7.9	9.2
Provider 2	7.3	10.2

* wRVU = Work-Related Value Unit

Patient Comments

“I love it! I get a lot out of it – I’m learning and I enjoy sharing it with others.”

“That book we got is phenomenal!”

“Everyone with Diabetes needs something like this – a group to go to, to get information and support – and not have it cost an arm and a leg.”

Limitations

- The most poorly controlled diabetics who might benefit most may be least likely to participate.
- Some patients without transportation and other patients who work may find it difficult to attend two hour group visit sessions.
- Self-selected participants may be more motivated to change.
- It may be difficult to fill diabetes group visits every year.

Moving Forward

- Potentially a financially sustainable model for diabetes group visits in fee-for-service environments
- Expansion to other chronic disease management programs
- Dissemination into community based clinics that serve lower income and vulnerable populations
- May serve as a model as the health care system is changing and access appears to be declining