

# **A Critical Review of Current and Future Educational Models for Diabetes**

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for ABCD Glasgow April 2006

# **NICE Health Technology Assessment 2002**

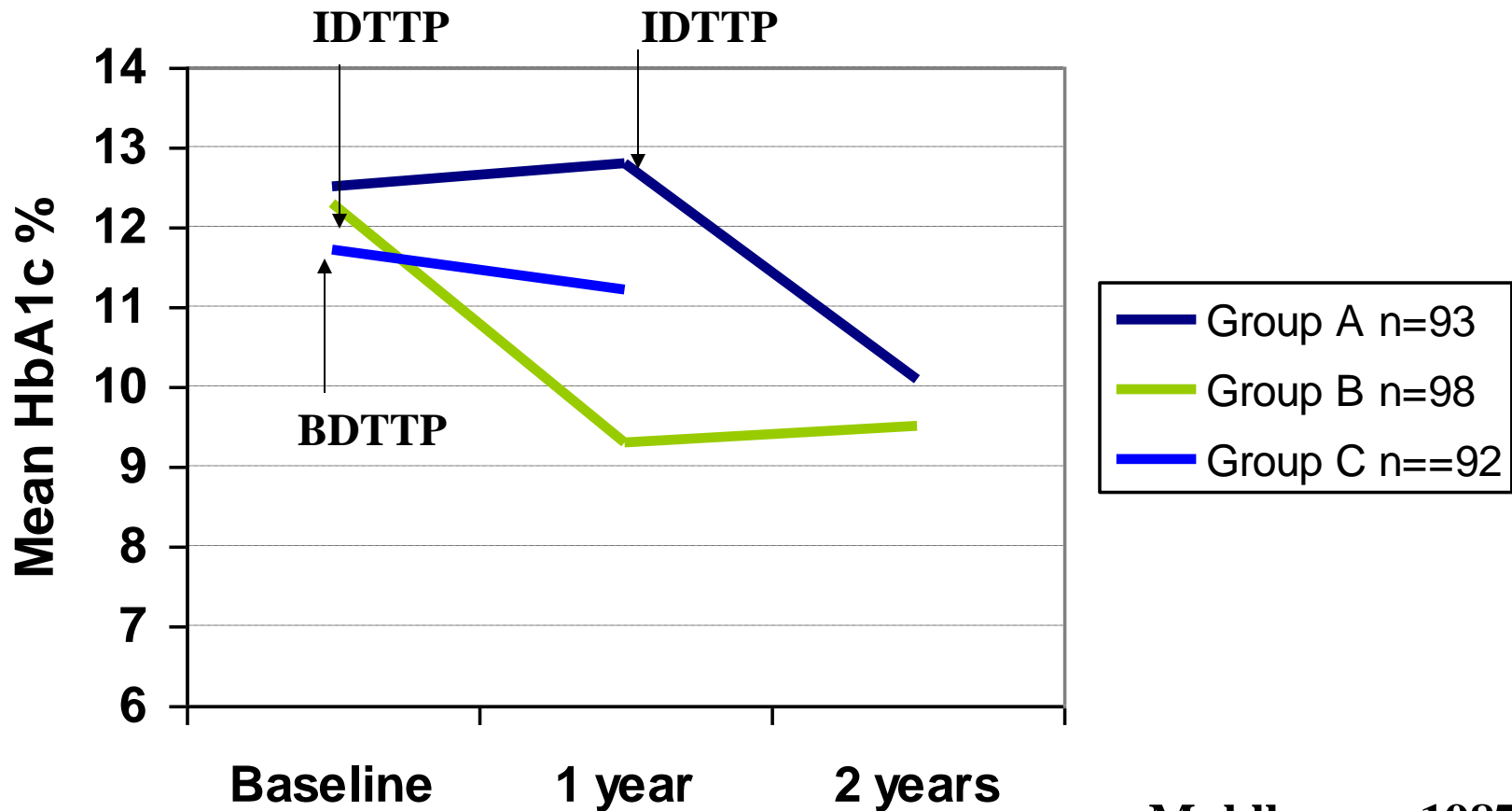
*Objective: to establish the clinical and cost effectiveness of available models for educating people with diabetes in diabetes self management, and to provide guidance to the NHS in England and Wales*

# NICE Health Technology Assessment April 2003

Recommendation: *structured patient education is made available to all people with diabetes at the time of initial diagnosis and then as required on an ongoing basis, based on a formal, regular assessment of need.*

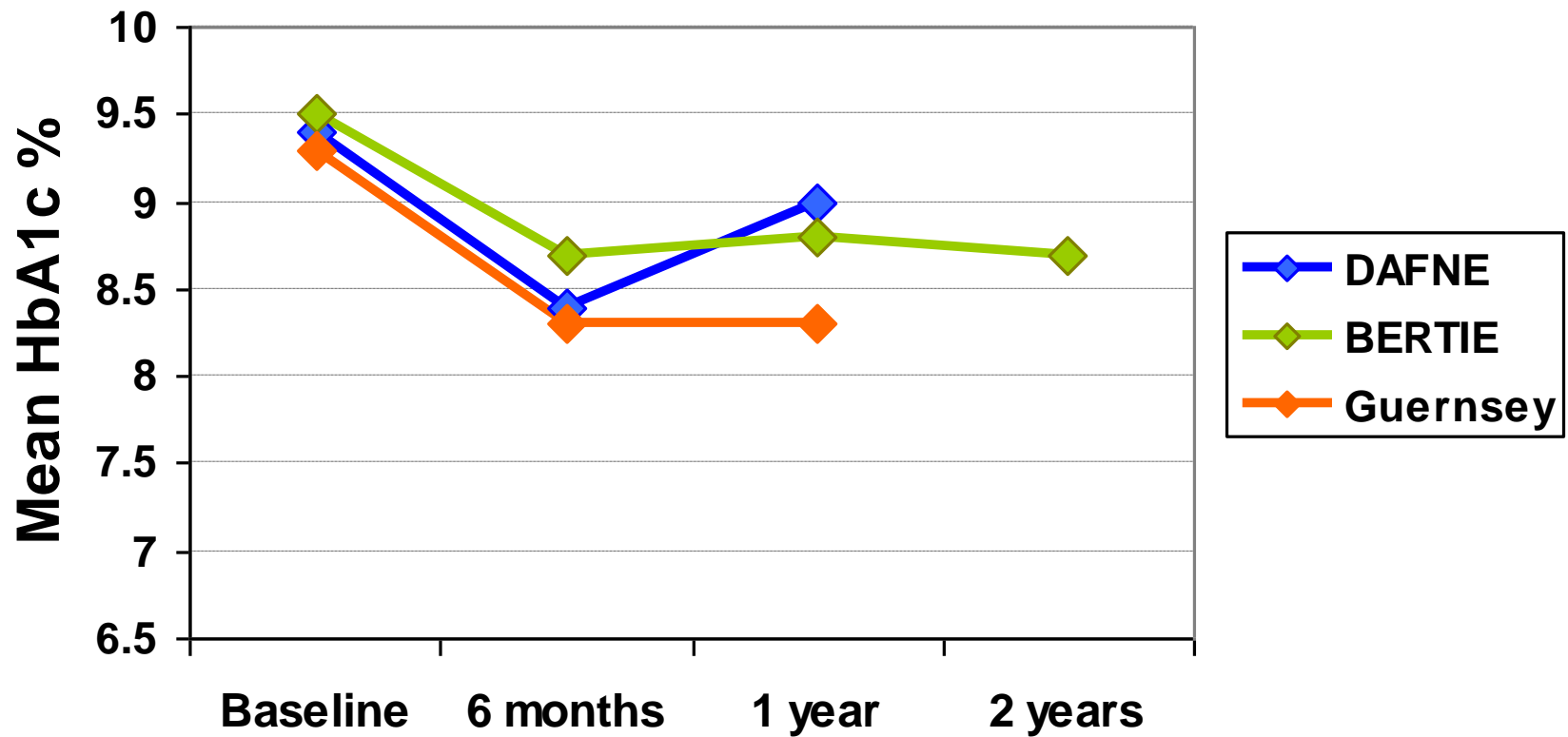
Usual 3-month funding directive waived until re-instatement January 2006

# Dusseldorf Type 1 Education Programmes



Muhlhauser 1987

# Type 1 Intensified Insulin Education Programmes



# **Structured Patient Education in Diabetes**

Report from the Patient Education  
Working Group

January 2005

NDST from Dept of Health and  
Diabetes UK

# Criteria for high quality structured education programmes

## Key criteria

- Structured written curriculum
- Trained educators
- Quality assurance
- Audit



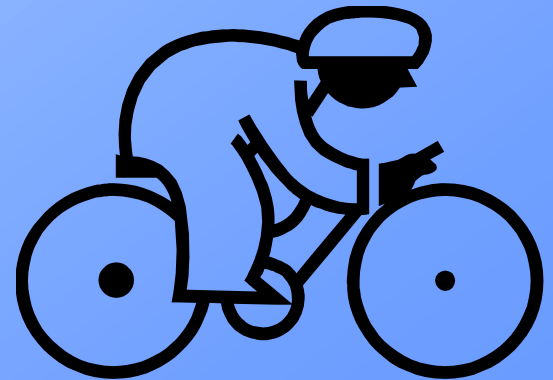
Accredited programme

# Analogies with junior doctor training

- Structured training with curriculum
- Formal teaching programme
- Individualised teaching / learning episodes

Opportunities for learning – all the time

- Assessment of need
- Agree the objectives
- Reflective learning
- Contact with the teachers
- Review progress





# Criteria for high quality structured education programmes

## Key criteria

- Structured written curriculum
- Trained educators
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- Audit



Accredited programme

# Criteria for high quality structured education programmes: Key criteria

## Quality Assurance

- Trained educators adequate frequency to maintain skills
- Reflective practice with diary and peer discussions
- Periodic review of delivery by colleague
- Periodic review of patients' experience
- Maintain database of outcomes

# Structured diabetes education

- Any educational activity e.g. newly diagnosed type 1; HBGM; care of feet in high risk patient
- Individual or group
- Flexible to respond to individual(s)

PCTs are now obliged to provide  
*structured* education for their  
diabetic patients.

# **Type 1 education network set up 2003**

## **Mission Statement**

*To support teams in integrating structured education for children and adults with diabetes in their service, by providing a framework for curriculum, training, quality assurance and audit which meet the Department of Health criteria.*

# **Type 1 education network**

21 centres listed – completed a self assessment of core programme content for structured education programme

Intensified insulin treatment programmes of varying style and duration

12 – 35 hours education time

3 days to 6 weeks

*Do we need a type 2 education  
network?*

# **Type 2 Diabetes Education and Follow Up: Turin Study Trento et al**

Randomised controlled trial

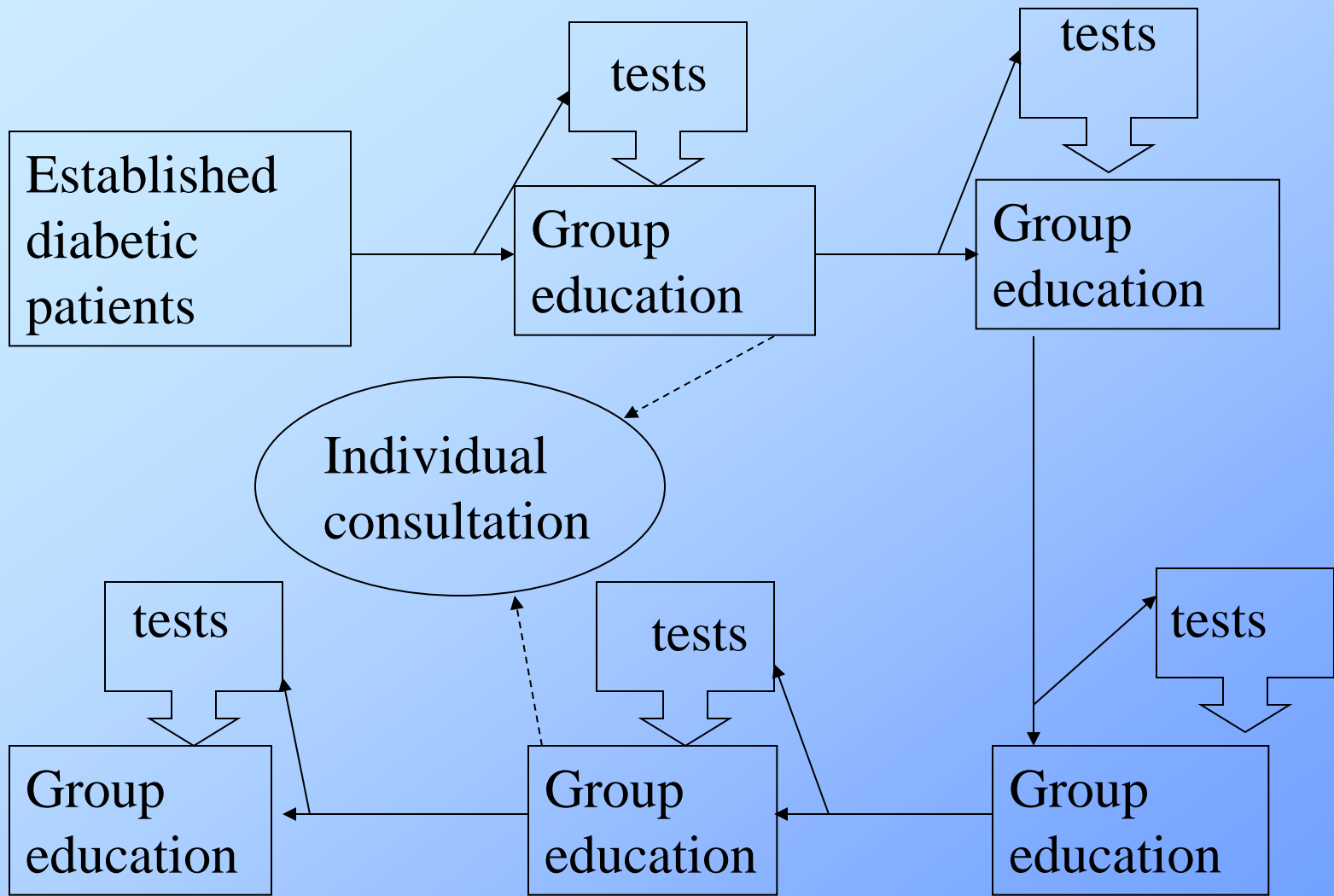
112 patients under hospital care

Duration 9 years and mean age 61 years

Intervention: group education ~1 hour every 3  
months

Control: usual 3 monthly clinic visits

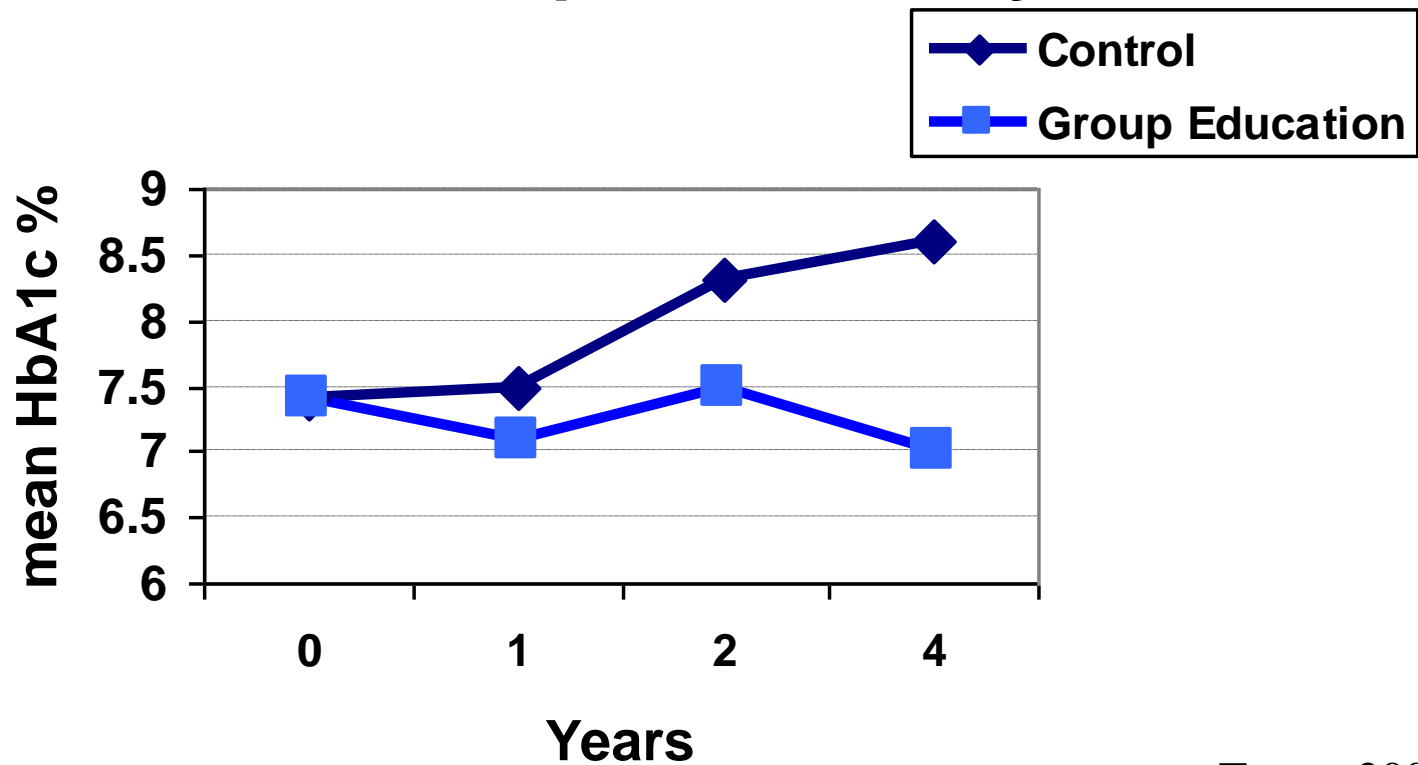




### **Trento model**

NB HCP reviewed tests before group session and given to patient in envelope

# Type 2 Diabetes Group Education and Follow Up: Turin Study



Trento 2002

# Education at diagnosis of type 2 diabetes

DESMOND

# **Poole Diabetes Education Programme for newly diagnosed type 2 diabetes**

Run for 25 years

Open access, seen within 7 days of diagnosis

3 sessions: at diagnosis, +2 and + 6 weeks

DNS & dietitian interactive teaching

Includes patient review of home monitoring  
and laboratory results to decide treatment

# **Poole Diabetes Education Programme for newly diagnosed type 2 diabetes**

Audit for 12 month period to 31.5.2004

895 diabetic patients attended and within 3  
months of diagnosis

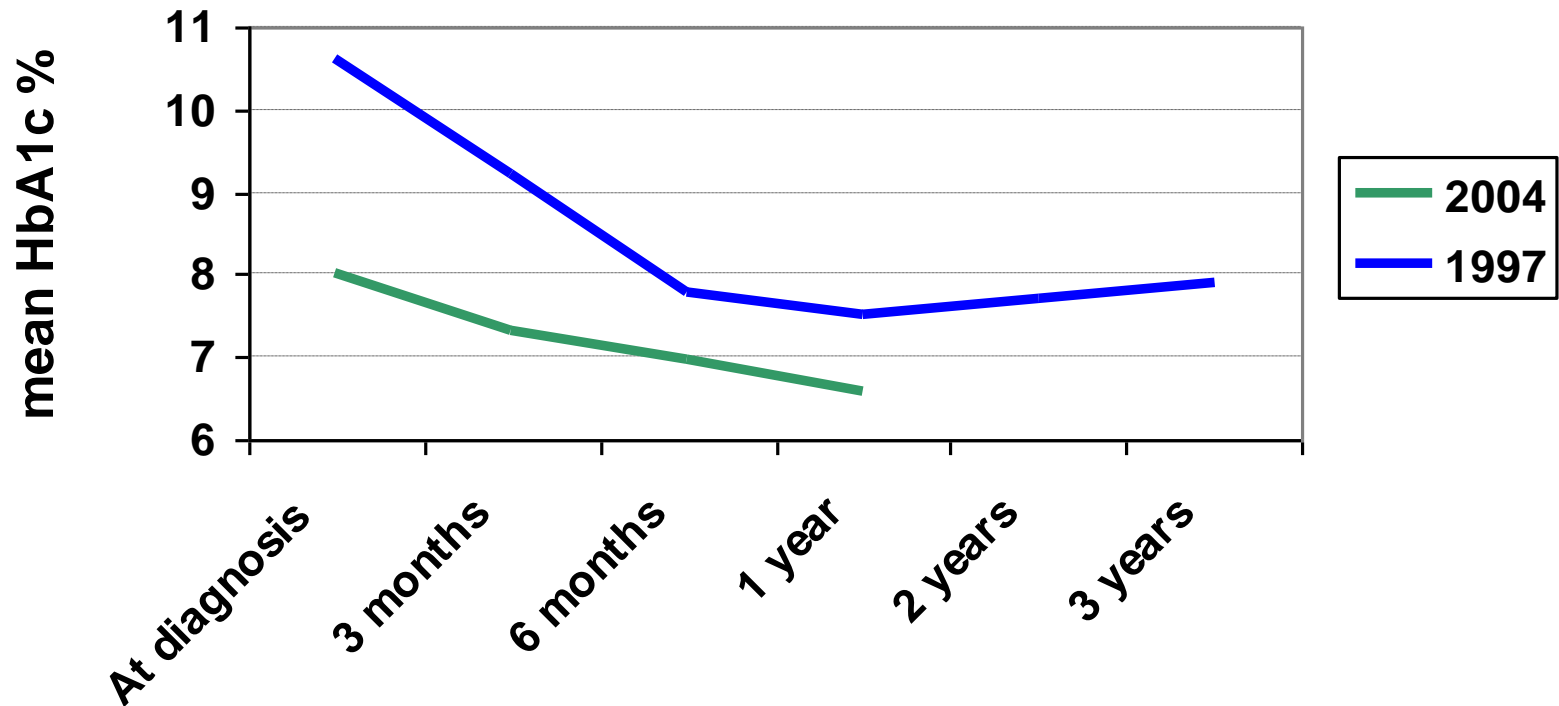
Reductions in mean

↓ HbA1c 0.8% (95% CI 0.7-0.9)

↓ Weight 1.9 kg (95% CI 1.7-2.1)

↓ Cholesterol 0.6 mmol/l (95% CI 0.5-0.8)

## Poole Type 2 Diabetes Education Programme & Follow Up



### Poole Diabetes Education Programme

Capacity: 1000 patients per year

Cost: £70 per patient

# Poole Diabetes Education Programme for newly diagnosed type 2 diabetes

Audit

Percentage of patients

Target	3 months	12 months
HbA1c $\leq$ 10% QOF	93%	99%
HbA1c $\leq$ 7.4% QOF	68%	87%
HbA1c $\leq$ 7.0% local	57%	77%

# **Group based training for self- management strategies in people with type 2 diabetes (review)**

Deakin T, McShane CE, Cade JE &  
Williams RDRR

The Cochrane Library 2006



# **Group based training for self management strategies in people with type 2 diabetes**

## **Deakin 2006**

Search Jan-Feb. 2003 identified 5497 citations

Systematic review of 190 full publications →  
11 randomised controlled trials [1995-2002]

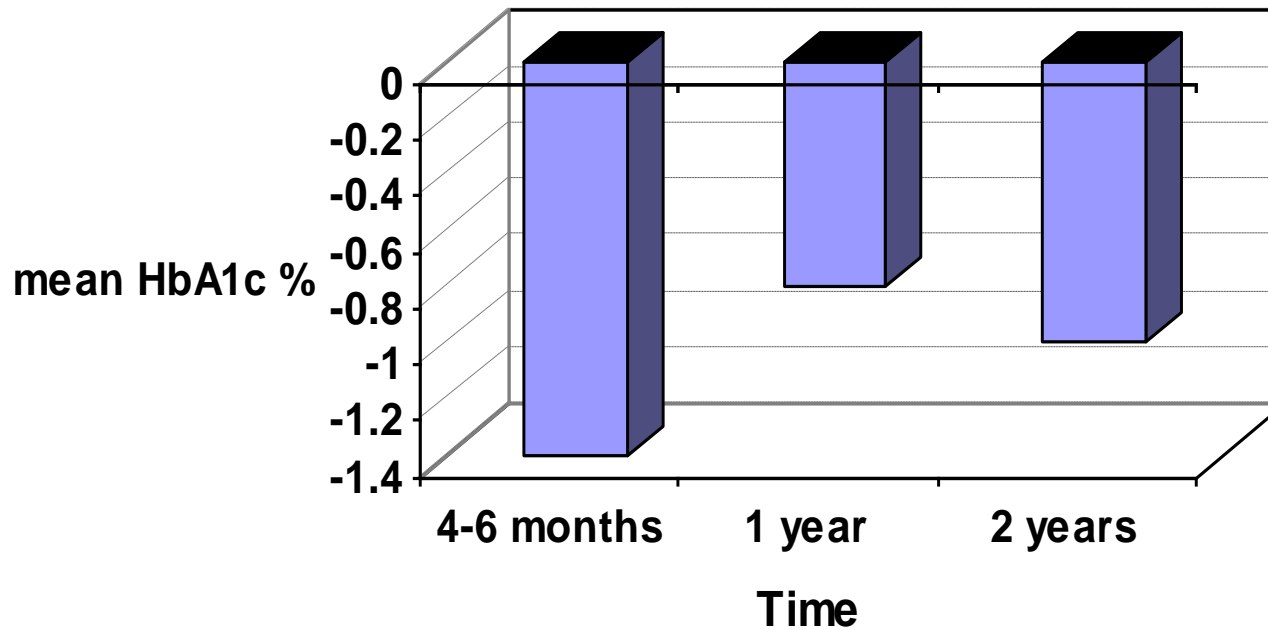
# **Group based training for type 2 diabetes. Deakin 2006**

Meta-analyses in favour of group based education

- Reduction in HbA1c
- Reduction in fasting glucose
- Reduction in body weight
- Reduction in systolic BP
- Improvement in diabetes knowledge
- Reduced need for diabetes medication

‘for every 5 patients attending a group based education programme, we could expect 1 patient to reduce diabetes medication’

## Effect of Type 2 Diabetes Education on Glycaemic Control: change from baseline



Deakin 2006

# Group based training for people with type 2 diabetes

- Duration of education: least intensive (3-4 hours per year) similar effect on HbA1c as intensive (52 hours)
- Size of group no effect (4 to 18 patients)
- No difference between place of delivery (primary vs. secondary care)
- Educator: Dr, nurse or dietitian all the same effect

**Diabetes patient education  
(type 1 & 2 diabetes):  
meta-analysis & meta-  
regression**

Ellis SE et al

Nashville, USA

Patient Education and Counselling

2004; 52:97-105

# Diabetes patient education: meta-analysis & meta-regression

21 randomised controlled trials involving 1-36  
‘teaching episodes’ over 1-12 months [1990-2000]


Difference in HbA1c  $-0.32\%$  between intervention  
and control groups. NB  $-0.66\%$  drop from  
baseline in controls! What works?

3 interventions explained 44% of variance in HbA1c

- Face-to face delivery
- Cognitive reframing
- Exercise


# Diabetes patient education: meta-analysis & meta-regression

‘Teaching methods’

1. Didactic
2. Goal setting – dictated
3. Goal setting –negotiated
4. Situational problem solving
5. Cognitive reframing 

# Diabetes patient education: meta-analysis & meta-regression

## Topics

1. Diet
2. Exercise 
3. HBGM
4. Basic diabetes knowledge
5. Medication adherence
6. Psychosocial



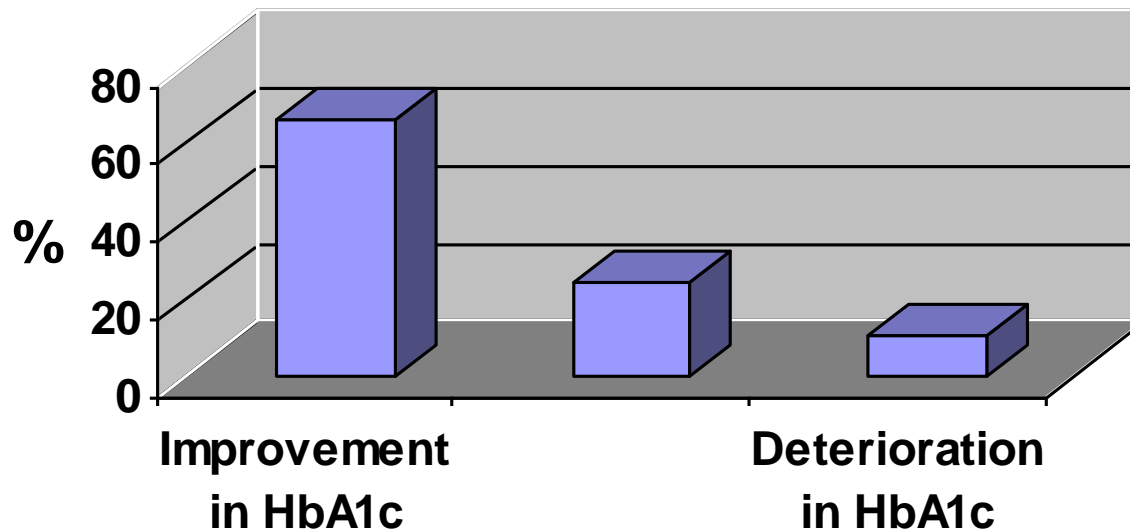
# **Diabetes patient education: meta-analysis & meta-regression**

‘Dose’ of education was not significantly  
related to improvement in HbA1c

# Education Works but...

- Trials patients may not be representative of your local diabetic patients
- Are a subset of diabetic patients in the community
- How do programmes perform in usual care?

**Glycaemic Outcome after BERTIE:  
excluding patients with HbA1c < 7.5%  
Naik & Cavan**



# BARRIERS TO CHANGE

Acceptance  
of  
Diagnosis

Lack of  
Motivation

Negative  
Thoughts

Perception  
Of  
Diabetic control

Lack of Family  
Support

Routine diabetes education is still dominated by the traditional model in which HCPs interact with patients on a one-to-one basis. ....leads to active prescription of diet, medication and advice on healthy lifestyle *but may not stimulate effective patient motivation and behavioural change.*

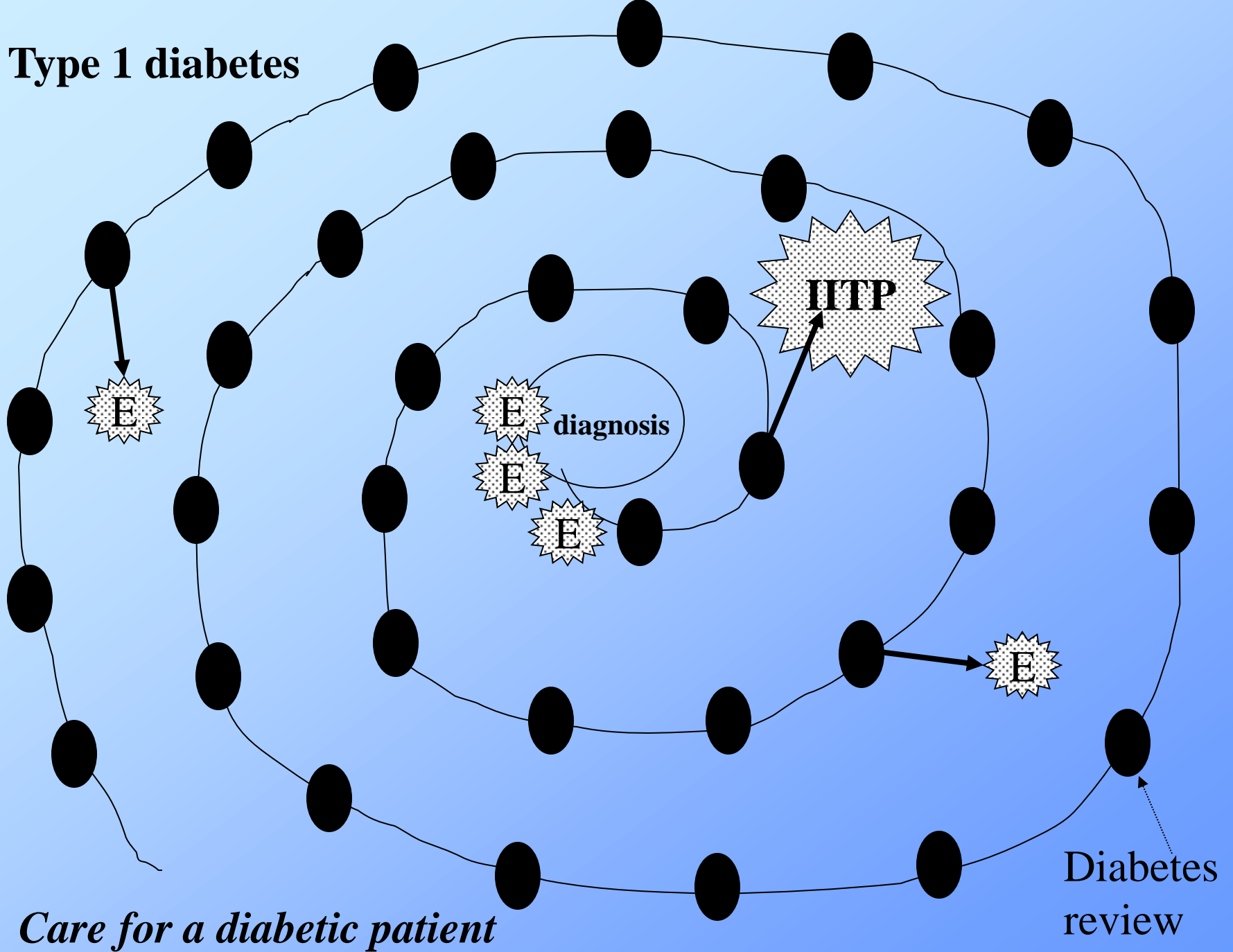


Trento 2002

# Future Challenges

- Develop local models incorporating education into routine care for the majority of diabetic patients in the community
- Develop a cost effective programme that is affordable for your area
- Evaluate outcomes on whole community

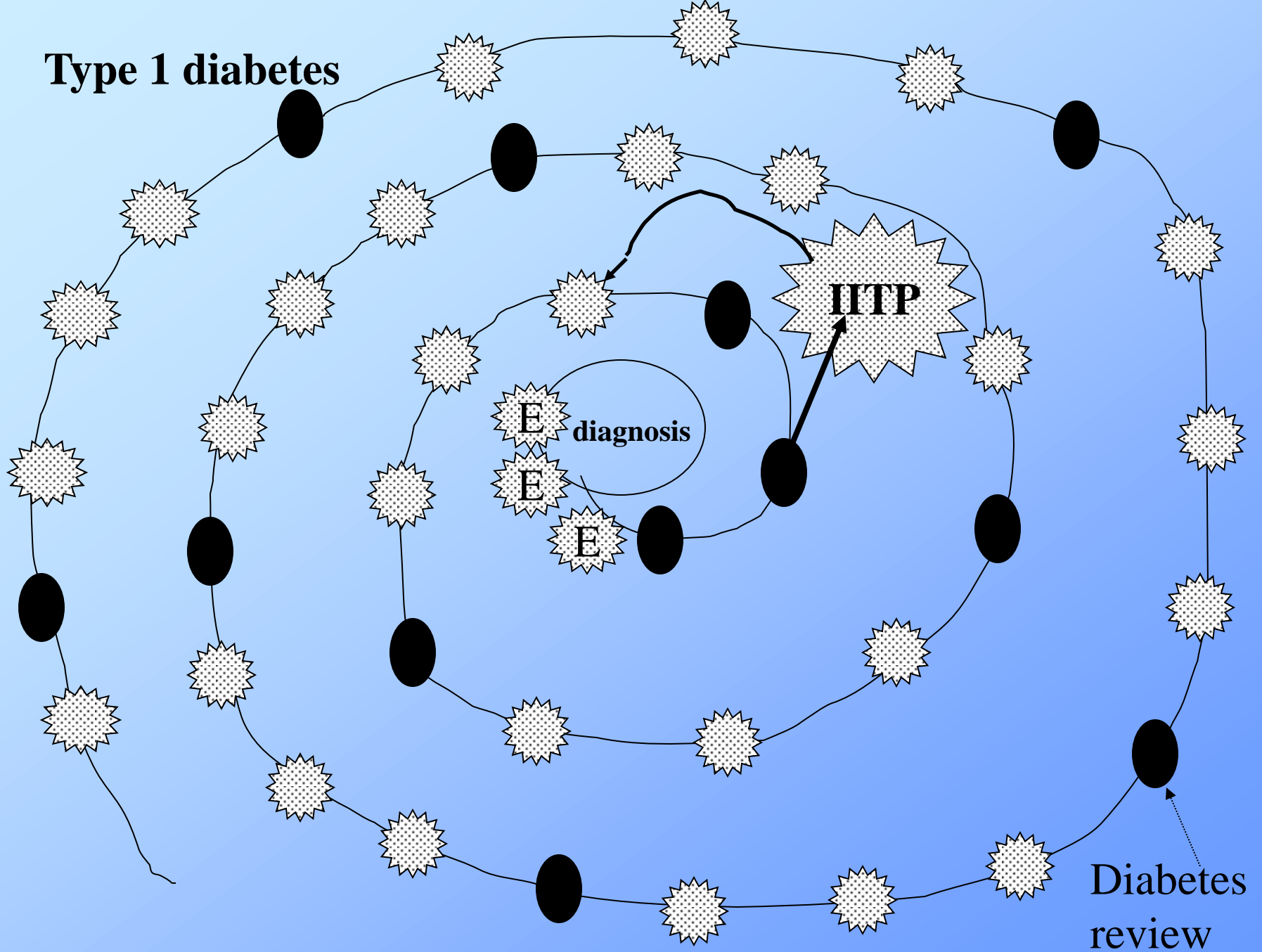
# Type 1 diabetes



*Care for a diabetic patient*

Diabetes  
review

**Type 1 diabetes**

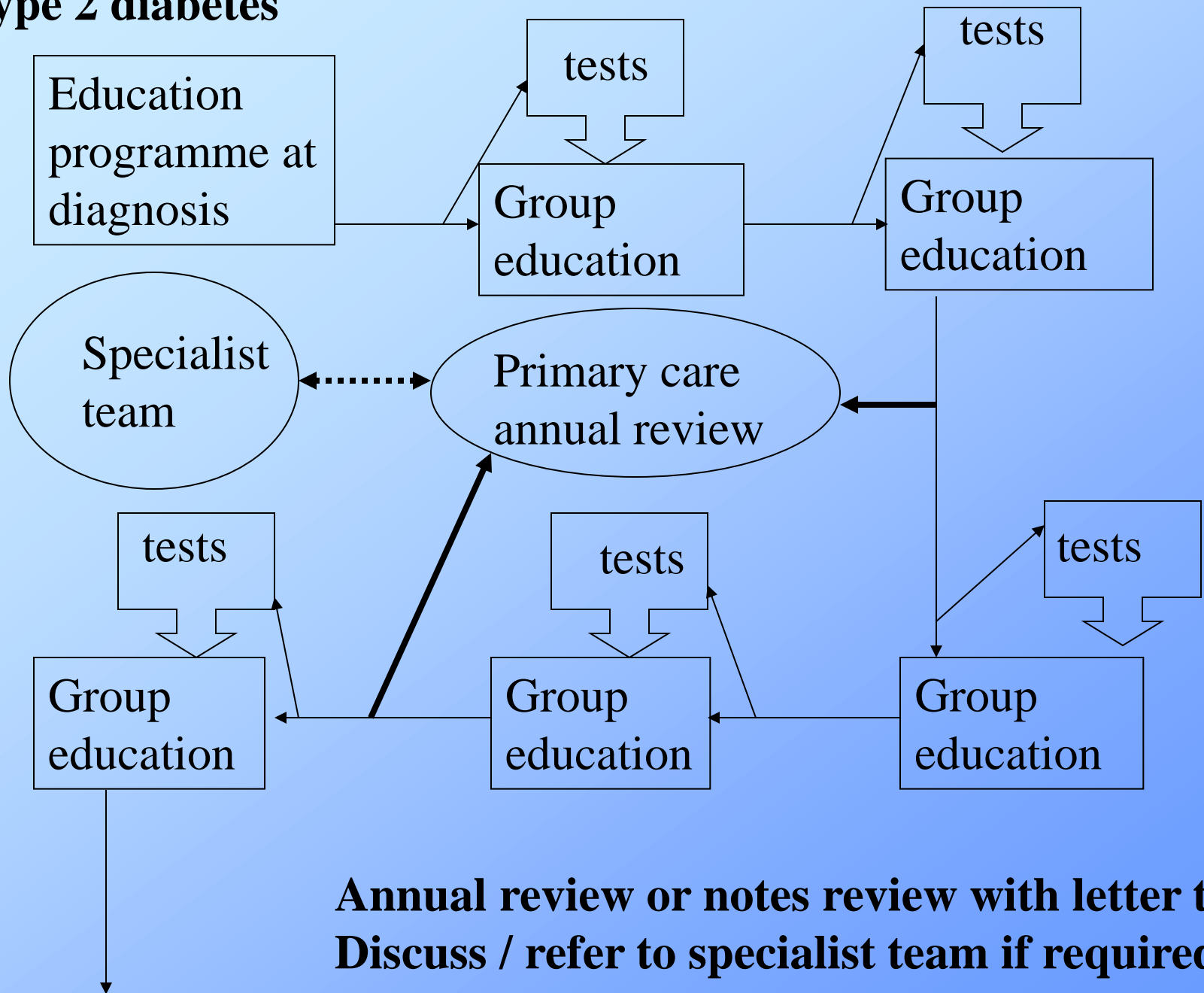


*Integrated Education & Care for a diabetic patient*

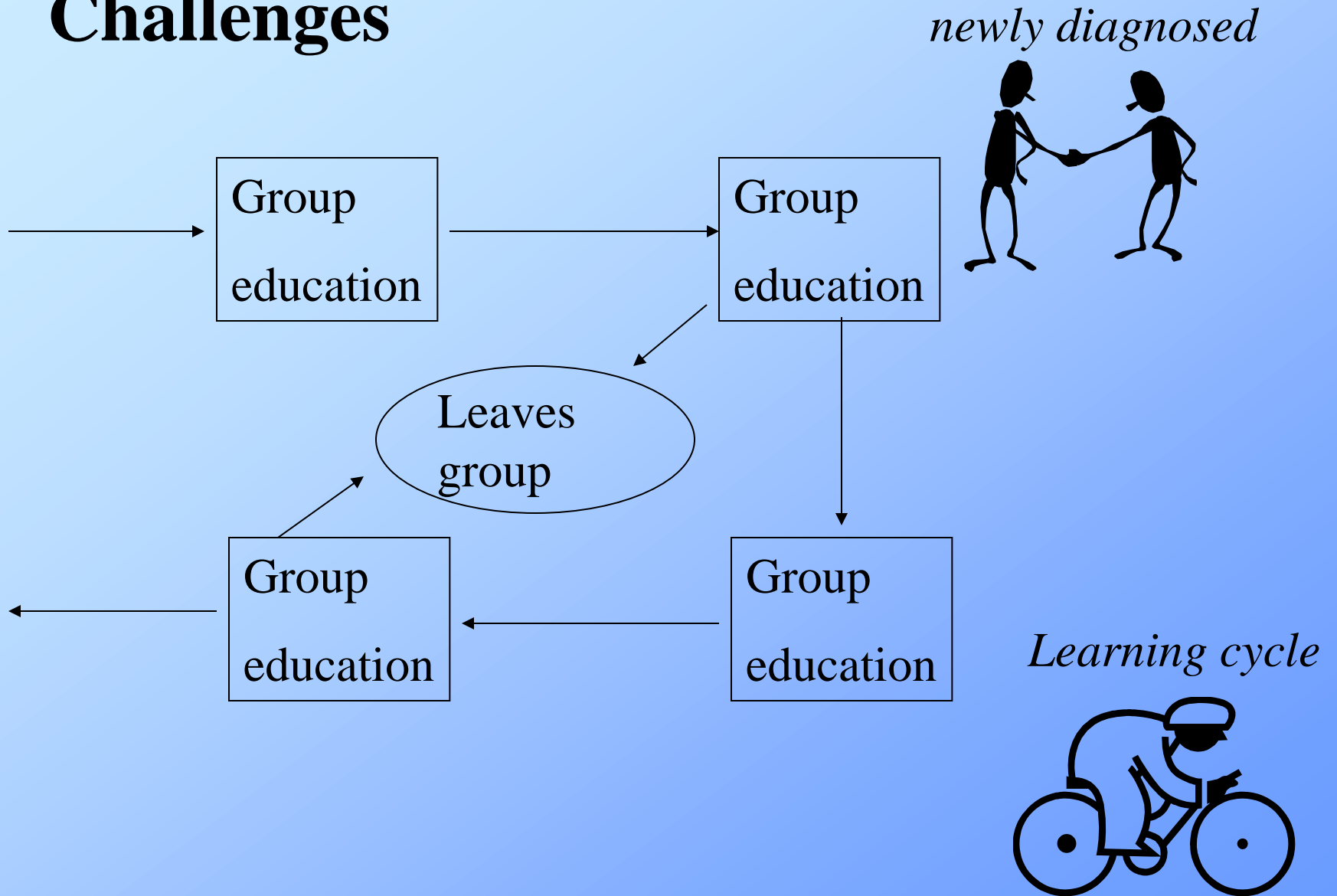
Diabetes  
review



# Type 2 diabetes



# Challenges



# Future Education Models

Explore the most cost effective models

- minimum time / resources for maximal gain
- assess benefit for patients – QoL
- assess impact on HbA1c, BP, Cholesterol
- assess impact on hypos, DKA, hospital admissions
- assess impact on developing complications

# Organisation of diabetes care in your locality

- Integrated diabetes education with care
- Accredited education programmes in primary and secondary care
- Explicit guidelines for which patients require specialist education & care
- No barriers across health care provision
- Regular review of outcomes by each provider and all providers together



# Cognitive Reframing

*involves suggesting alternate self-perceptions that are more advantageous to self management.*

*e.g. 'instead of feeling deprived of food at the holiday parties, how about thinking of them as opportunities to really focus on other family members and taking a pride in caring for yourself?'*

# Structured Patient Education in Diabetes

*‘structured patient education is made available to all people with diabetes at the time of initial diagnosis and then as required on an ongoing basis, based on a formal, regular assessment of need’*