

Improving the outcomes of insulin pump therapy

Bournemouth Diabetes and Endocrine Centre

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www.b-dec.co.uk



Pump Start Programme 2009

2 full days group training for pump initiation

Weekly
Telephone calls

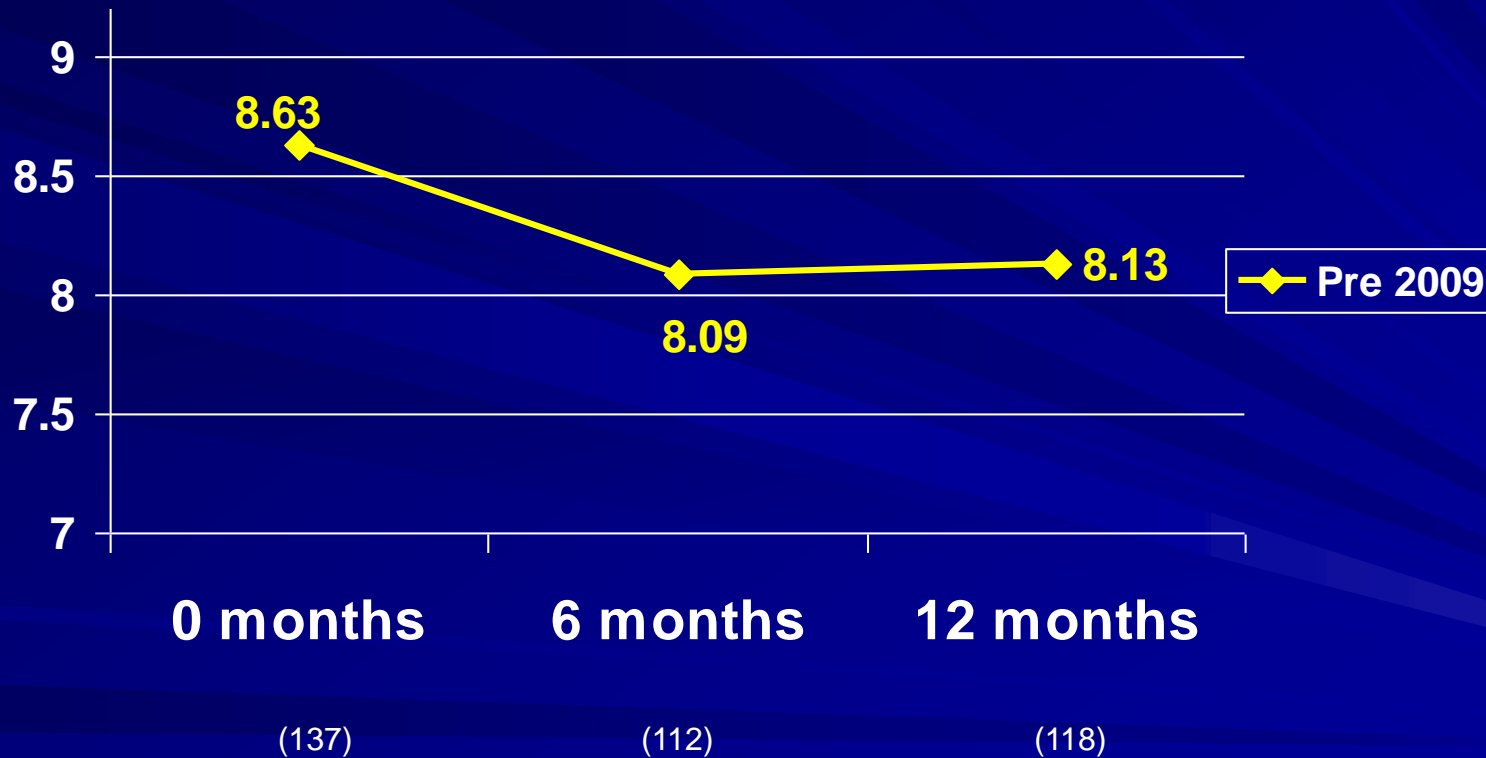
Group review at 1
month

6 monthly individual
pump clinic
consultations

Pump training included dietetic input, CHO ratios, correction factors and general pump therapy management skills!!

Mean change in HbA1c after pump therapy prior to 2009

HbA1c %



(Journal of Diabetes Nursing vol. 14 no.5 2010)

Service improvement project (2008)

- 17 pump users
(mean duration of diabetes, 28yrs, age 44 yrs)
- Attended 1 of 4 focus groups (1hr sessions)
- HbA1c >8% (>64mmol/mol)

Questions asked

Have expectations of pump therapy been met?

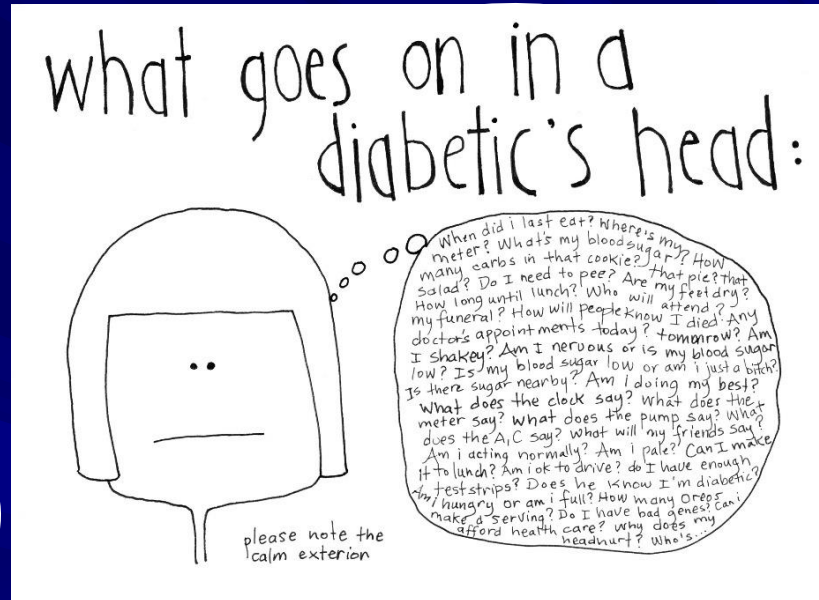
What HbA1c they wanted to achieve?

Barriers in not achieving HbA1c of 7.5%

What would help achieve HbA1c of 7.5%

If successful.. How?

Why not successful ?



Feedback

- Fear of hypoglycaemia
- Hard work to achieve
HbA1c 7.5% and mistrust of HbA1c
- Good control results in less freedom and more restrictions
- Development of pragmatic 'safe' self-management behaviour
- Peer support would be beneficial



Aim

To improve clinical and quality of life outcomes by developing a novel 12 month intensive group education programme for patients starting pump therapy.



Service Development Plan

1. Extend pump initiation training over a week; reduce anxiety & build confidence at onset
2. Pre-scheduled group review & education sessions at 1, 3, 6 & 9 months after pump initiation
3. Develop system of peer support and vicarious learning

Programme since 2010

PRE PUMP

Need/skills
NICE Assessment

BERTIE or other carbohydrate
counting /insulin adjustment
course/education.

Optimise skills
*Support for emotional &
Psychological issues*
Build confidence

PUMP START

Day 1

Goal setting
Contract
Calculations
Introduce pump,
handset & cannula

1 week
Practice

Day 2

Get connected
Management skills

Overnight
Experience

Day 3

Practicalities
Focus on basal
reviews
Management skills

3 ½ days , 4 patients, 12 groups /yr

POST PUMP

2 hr Reviews groups
At 1, 3, 6 & 9 months
Build skills for
independent pump skills

Medical Pump Clinic at
12 months
Ongoing review or
discharge to referrer

HbA1c, weight
PAID
Hypos Awareness
Review goals

Pre Pump

NICE criteria

BERTIE or other carbohydrate
counting course
E-learning website

Pre -Pump
Check List

Psychological issues, fear of hypos,
PAID
hypo awareness
assessment
Eye check

Pump
Training
programme

Optimise skills, learning ability,
current regime
Show insulin pump and explain
process/ commitment to follow up

MD Pump
Team
meeting

Pump Start Programme

(9.15am -12 noon) Groups of 4 patients
Led by DSN or dietitian

Day 1

Goal setting
Baseline data: Wt, HbA1c, PAID, Hypo Awareness
Calculate and set basal rates, bolus and correction ratios
Introduce pump & handsets, infusion sets & cannulas

After 1 week

Day 2

Choose infusion sets, get connected
First boluses
Focus on basal settings & reviews
Pump Management Skills
Test overnight

Day 3

Review initial experience/overnight basals
Practical issues/supplies
Introduce clinical psychologist

Pump Review & Education Programme

(2hrs, 2-4pm) Groups of up to 8 patients

Led by DNS & Dietitian

Introduce group
Download pumps
Complete questionnaires

General level of satisfaction – working towards goals?
What is going well, what problems have occurred?
Review of basal diaries and glucose downloads
Optimise bolus and basal settings
Practicalities of Infusion sets & sites
Problem solving
Set new goals

Data at 3, 6, 9 months
Weight, HbA1c, PAID, Hypo awareness

Medical Pump Clinic 12 months

- PAID, Hypo score - Fill in when checking in
- Download pump / meter- HCA clinic staff
- Review / assess individual needs & goals
- Discharge to referrer
- Dr, DNS or Dietician
- Access data base

Date	WHO	Group Visit
18 Jan 2011	Mel	JS
24 Jan	Mel	JS
25 Jan	Mel	JS
23 Feb 2011	Mel	I & J 1
13 April 2011	Mel	I & j 3
13 July	Mel	I & J 6
12 Oct	Mel	I & J 9
Dec/Jan 2012	Consultant	I & J CLINIC APPT
Jan 17, 24, 31, 7 Feb IIT	Emma/Jacky	
15 February 2011	Jacky	KS
22 February	Jacky	KS
23 February	Jacky	KS
1 March	Emma	LS
7 March	Emma	LS
8 March	Emma	LS
23 March	Emma /Jacky	K & L1
18 May	Emma /Jacky	K & L 3
24 August	Emma /Jacky	K & L 6
23 Nov	Emma /Jacky	K & L 9
February 2012	Consultant	Clinic Appt
Feb 14, 21, 28, 7marchIIT	Julie/Catherine	? Mel
March 14, 21, 28, 4 April IIT	Emma/Jacky	?Mel
3 May 2011	Mel/Jacky	AS
9 May	Mel/Jacky	AS
10 May	Mel/Jacky	AS
16 May 2011	Julie	BS
23 May	Julie	BS
25 May	Julie	BS

Insulin Pump Start Programme 2019

Review groups held on Wednesday pms

VISIT		PUMP COURSE 1 Hannah	PUMP COURSE 2 Mel	PUMP COURSE 3 Julie/Emma/Jacky??
1	PUMP Introduction Baseline Data	Tues 22 Jan	Tues 14 May	Tues 3 Sept
2	Pump Start	Mon 28 Jan	Mon 20 May	Mon 9 Sept
3	Initial review	Tues 29 Jan	Tues 21 May	Tues 10 Sept
4	2 week review	Wed 13 Feb	Wed 5 June	Wed 24 Sept
5	1 month review	Wed 27 Feb	Wed 26 June	Wed 9 Oct
6	3 month review HbA1c	Wed 1 May	Wed 28 August	Wed 4 Dec
7	6 month review Data Collection	Wed 24 July	Wed 20 Nov	Wed 11 March 2020
8	9 month review Satisfaction questionnaire	Wed 23 Oct	Wed 19 Feb 2020	Wed 10 June 2020
9	1 Year Clinic review Data Collection	Jan 2020	May 2020	Sept 2020

Data Collection:

Weight

HbA1c

QOL – PAID & Hypo Fear questionnaires

Clarke and Gold Score Hypo questionnaires

PUMP CLINIC COVER SCHEDULE FOR 2019

Monday pm week 2 & 3 – Helen P pumps

Wed am weeks 1- 4 – Gus pumps

Thurs pm weeks 1, 3 & 5 – Helen P pumps

DATE	CLINIC	DAY	FIRST	PM REVIEW GROUPS AL, OTHER
Jan 2	AMSB	WED	HG	
Jan 10	YPC	THURS	EA&AM	
Jan 14	HLP	MON	JC	
Jan 16	AMSB	WED	MW	
Jan 17	HLP	THURS	JR	
Jan 21	HLP	MON	EJ	
Jan 23	AMSB	WED	EJ	
Jan 24	YPC	THURS	EA&AM	
Feb 6	AMSB	WED	HG	
Feb 7	HLP	THURS	NS	
Feb 11	HLP	MON	JR	
Feb 13	AMSB	WED	JC	
Feb 20	AMSB	WED	HG	

Timetable for CGMS Education Programme Royal Bournemouth Hospital

Groups will run from **9-11am on Tuesday mornings** in the Learning Zone



VISIT		COURSE 1 Mel	COURSE 2 Emma	COURSE 3 Hannah	COURSE 4 Jacky
CCG MEETING		9 Nov	5 Feb	17 May	3 Sept
1	CGMS Start Baseline Data	Tues 27 Nov	5 March	2 July	22 Oct
2	Interpreting data/alert settings	Mon/Tues 3/4 Dec	12 March	9 July	29 Oct
3	1 month review	Wed 19 Dec	2 April	30 July	19 Nov
4	2 month review Consider ongoing sensor provision	Tues 22 Jan	7 May	27 August	17 Dec
CCG MEETING		5 Feb	17 May	3 Sept	?
5	3 month review Final Data collection	Tues 26 Feb	4 June	1 Oct	21 Jan 2020

Each patient receives 3 month bundle consisting of 1 G6 transmitter and 9 sensors for the 3 month period.

At CCG meetings, it is decided which patient will join next course and also which patients from previous course would be able to continue beyond the 3 month period.

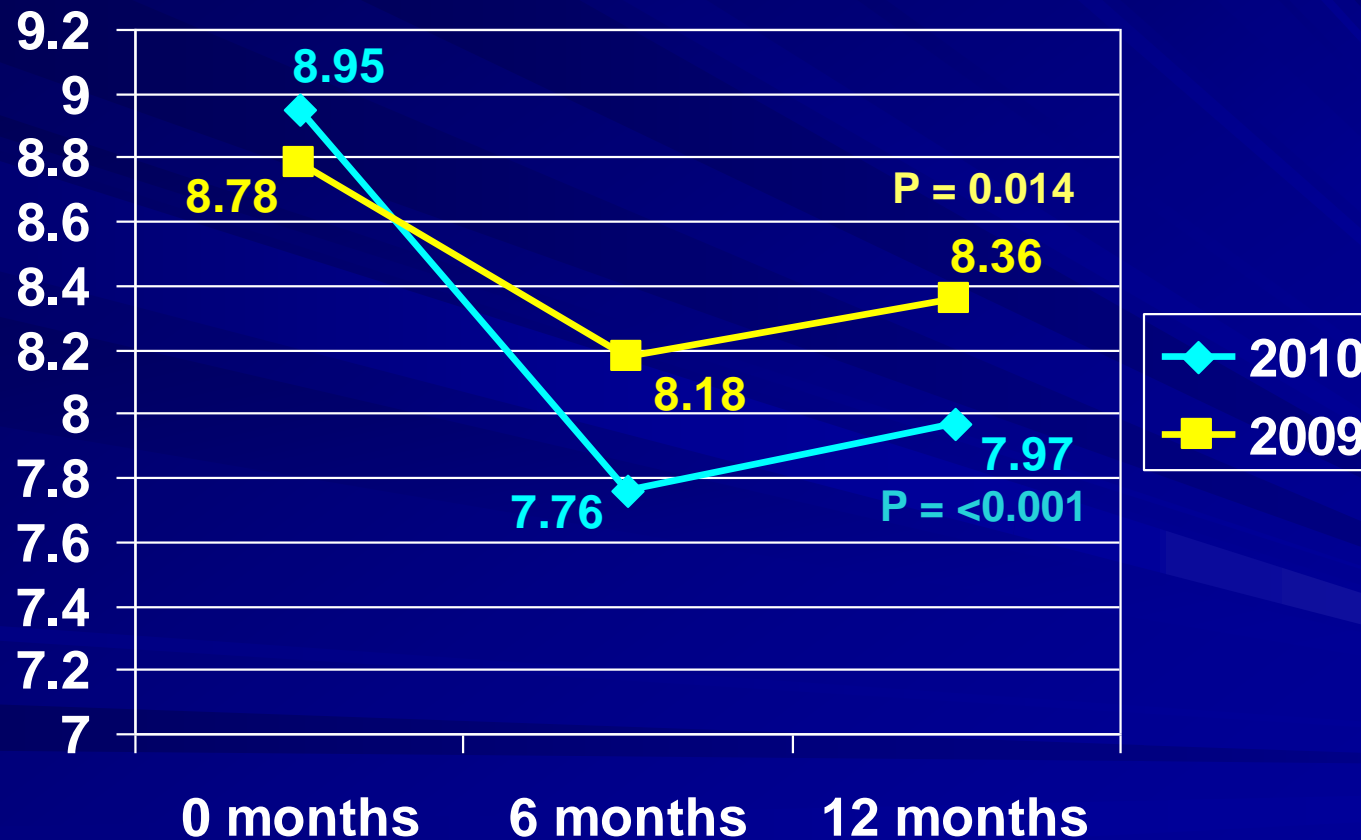
2011 Audit

We compared changes in HbA1c and Problem Areas in Diabetes (PAID) in patients who commenced pump training in 2009 and 2010

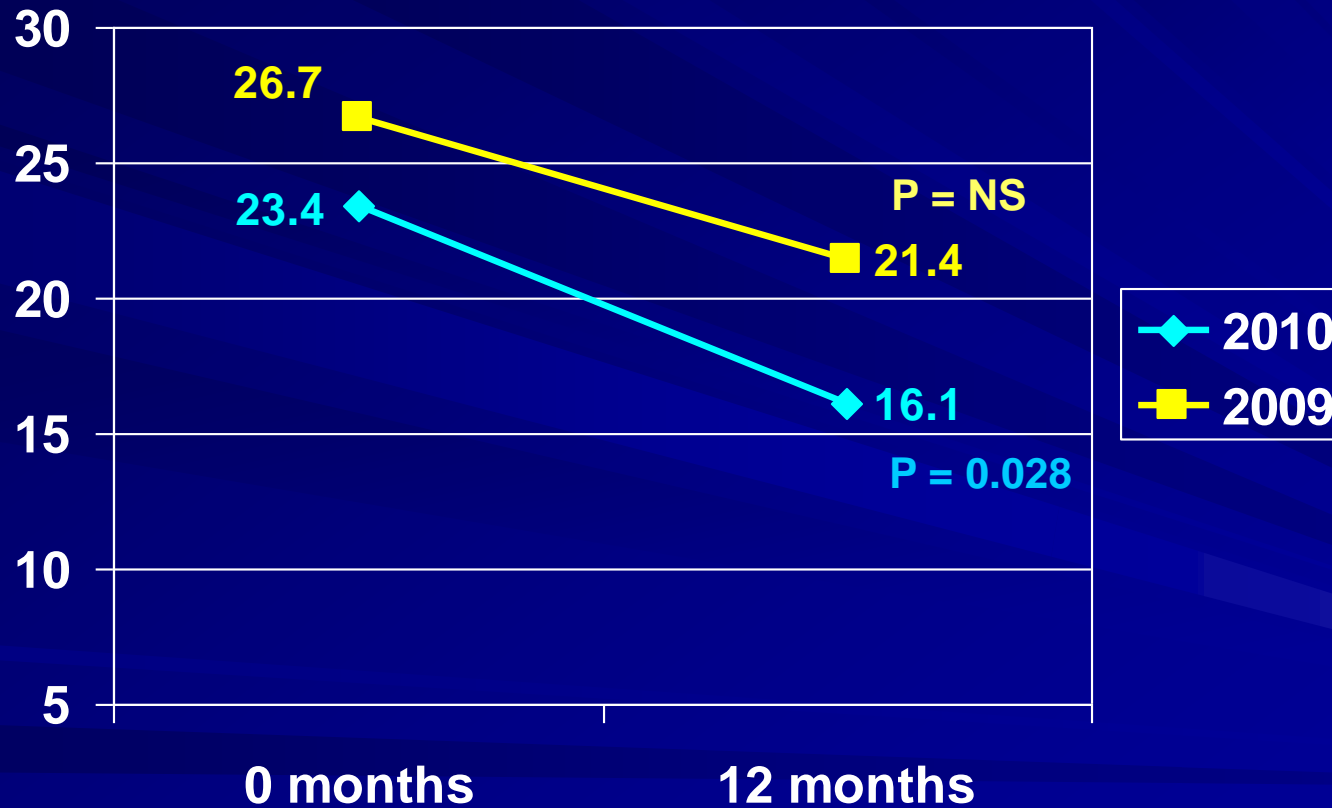
	2009 n = 46	2010 n=59
Mean Age	40yrs	38yrs
Mean diabetes duration	26yrs	20yrs
Gender	44% male	36% male

Change in HbA1c after starting pump therapy

HbA1c %



Change in PAID Scores after starting pump therapy



Pump Assessment Check List

Name:

Hospital Number:

CCG:

HbA1c (Date):

Funded requested: Yes/No/NA

Diabetes Management Skills	Check	Comments
Frequency of blood testing (4+ per day)		
Frequency of attendance in clinics		
Attendance at Type 1 Education		
Appropriate Carb Counting Skills Carb Ratio Correction Factor Target Blood Glucose Hypo treatments Sick day rules Adjustments with exercise (Expert Skills test?) Use of Bolus advisor meter		
Screening Questionnaires: Gold PAID Hypo Behaviour Hypo Worry		Results

Reason for Pump Therapy

Improve HbA1c (8.5%/69mmols +)

Hypoglycaemia Unawareness

Fear of injections

Planning Pregnancy

Lifestyle Flexibility e.g. Shifts

Severe/Frequent Hypoglycaemia

Dawn Phenomenon

Absorption Problems

Insulin sensitive

Other.....



Demonstration/Explanation	Check
Pump System Pump Handset Cannulas Reservoirs Accessories Back up pens	
Discuss Pros & Cons	
Pump Education Programme	
Give Pump Info Pack	
Give Pump Programme leaflet	

- ✓ Worn constantly with up to 1 hour disconnected
- ✓ Need to check ketones & infusion sets/cannulas with Hyperglycaemia
- ✓ Need back up supplies
- ✓ Still need to count carbs and adjust insulin to lifestyle
- ✓ Need to attend reviews & clinics
- ✓ Regular blood testing

Future Plan:

BERTIE ☐

Other Education (Individual) ☐

Provisional pump start dates given ☐

Discuss at team meeting ☐ (Name on list)

Comments:.....

HP Name:.....

Date:

Consistent, thorough, pre-pump assessment and care planning

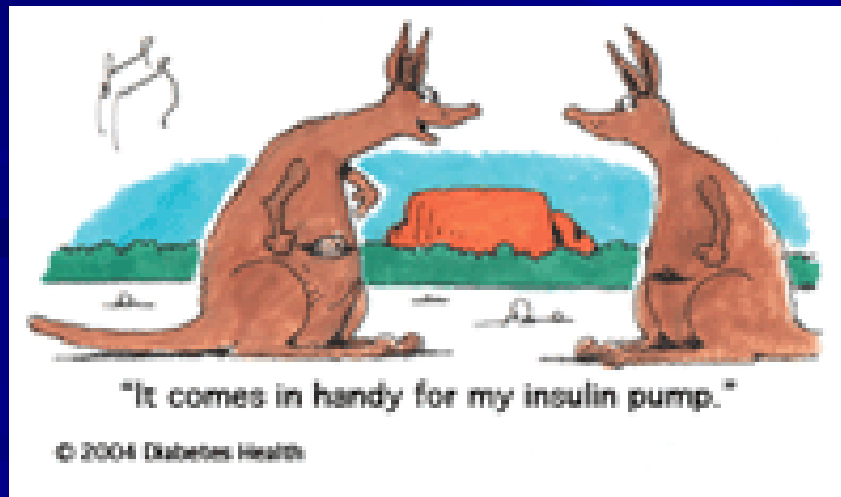
Considerations

- ❖ Anxieties about sharing data
- ❖ A belief that others are doing better
- ❖ Difficult to cover all individual problems
- ❖ May still need contacts between sessions
- ❖ Considerable commitment & time away from work



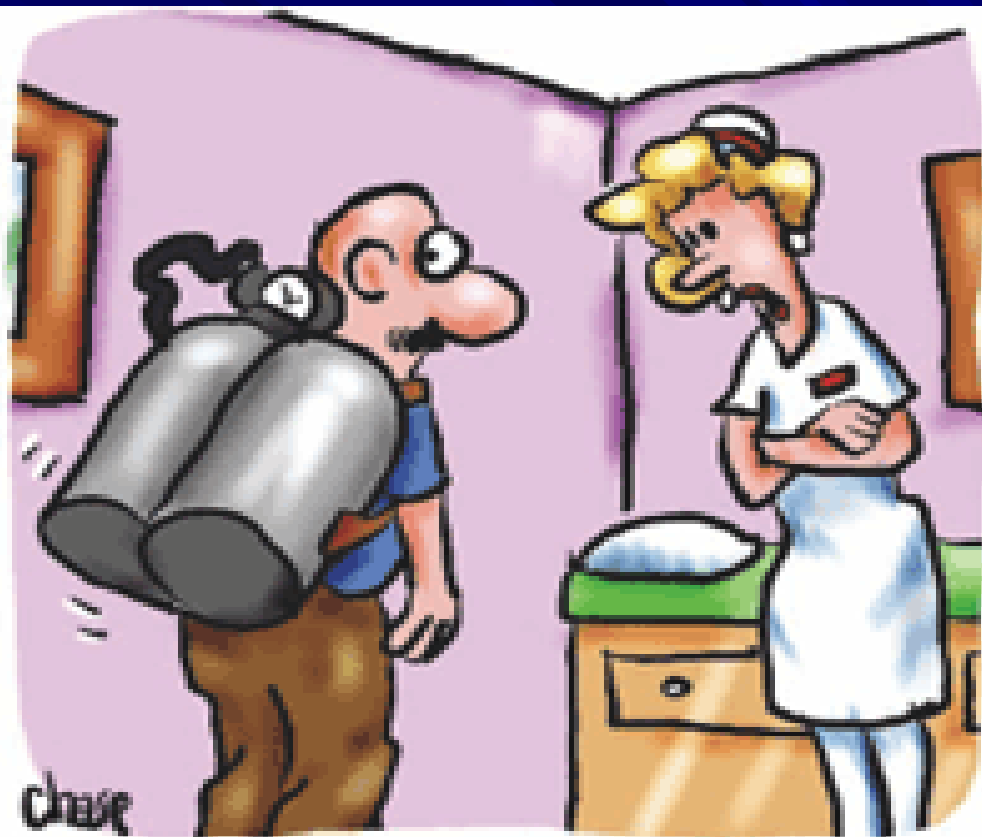
Positive Considerations

- ✓ Very positive environment
- ✓ Peer support
- ✓ Normalises problems – motivating
- ✓ Share experiences/tips - vicarious learning
- ✓ Downloads highlight patterns from which management strategies can developed
- ✓ Still developing new skills at 9 months
- ✓ Often want more group sessions beyond 1 year



Further Developments

- Encourage home downloads - email to team before group
- Encourage HbA1c tests & basal review diaries before group
- After initial introduction and sharing experience, split group up into 3-4 to review downloads and support individuals better
- Psychological input at review not start
- Collect & review more data e.g. hypoglycaemia



"Have you thought about an insulin pump upgrade?"

© 2006 Diabetes Health

Don't forget!

Administration

Coordinate literature

Appointments

Data collection & Audit

Ordering pumps and consumables

Checking invoices!