



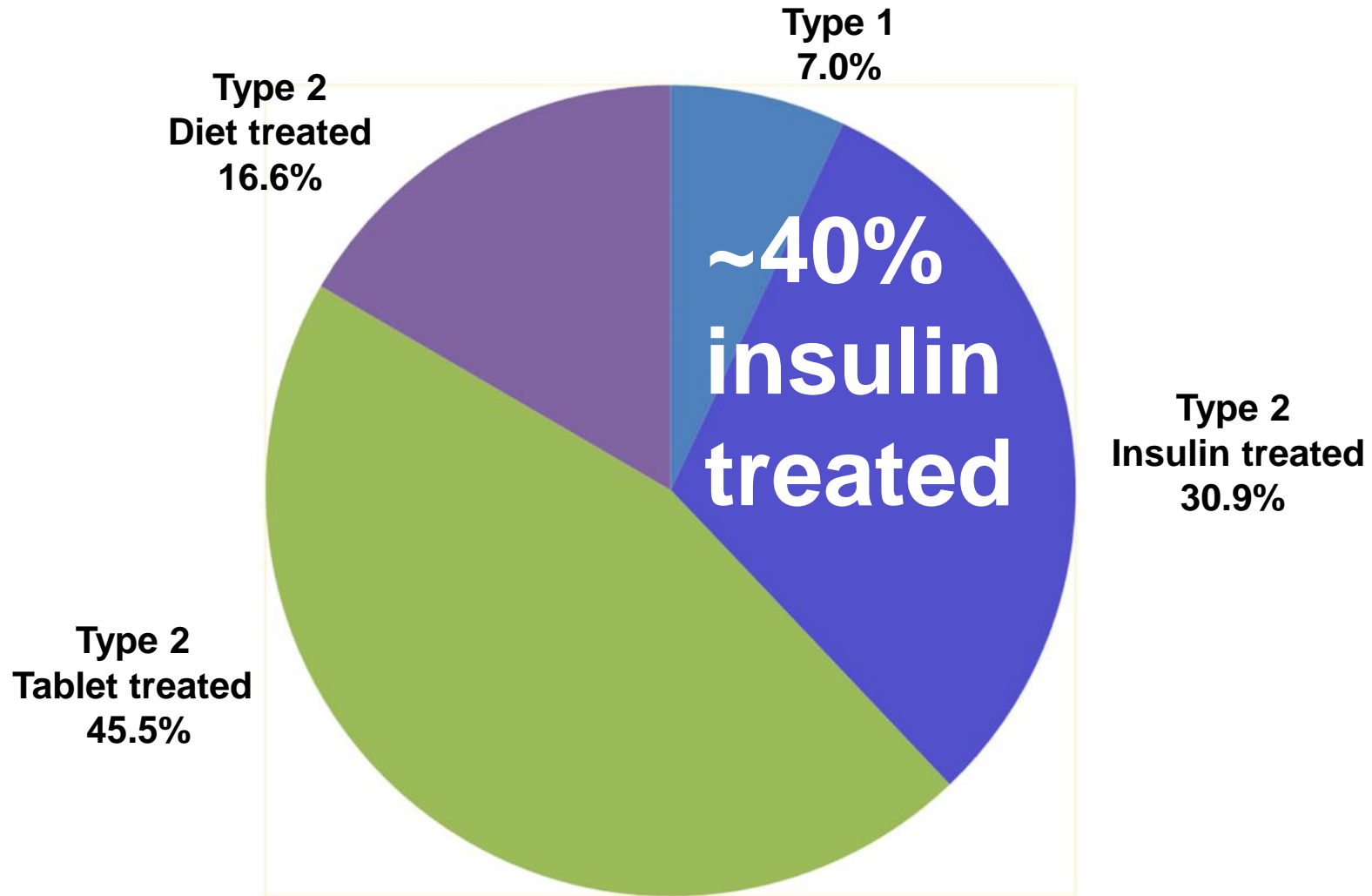
# **The National Diabetes Inpatient Audit (NaDIA) 2010 (vs 2009)**

Gerry Rayman

Ipswich Hospital, Suffolk

National Clinical Lead  
for Inpatient Diabetes

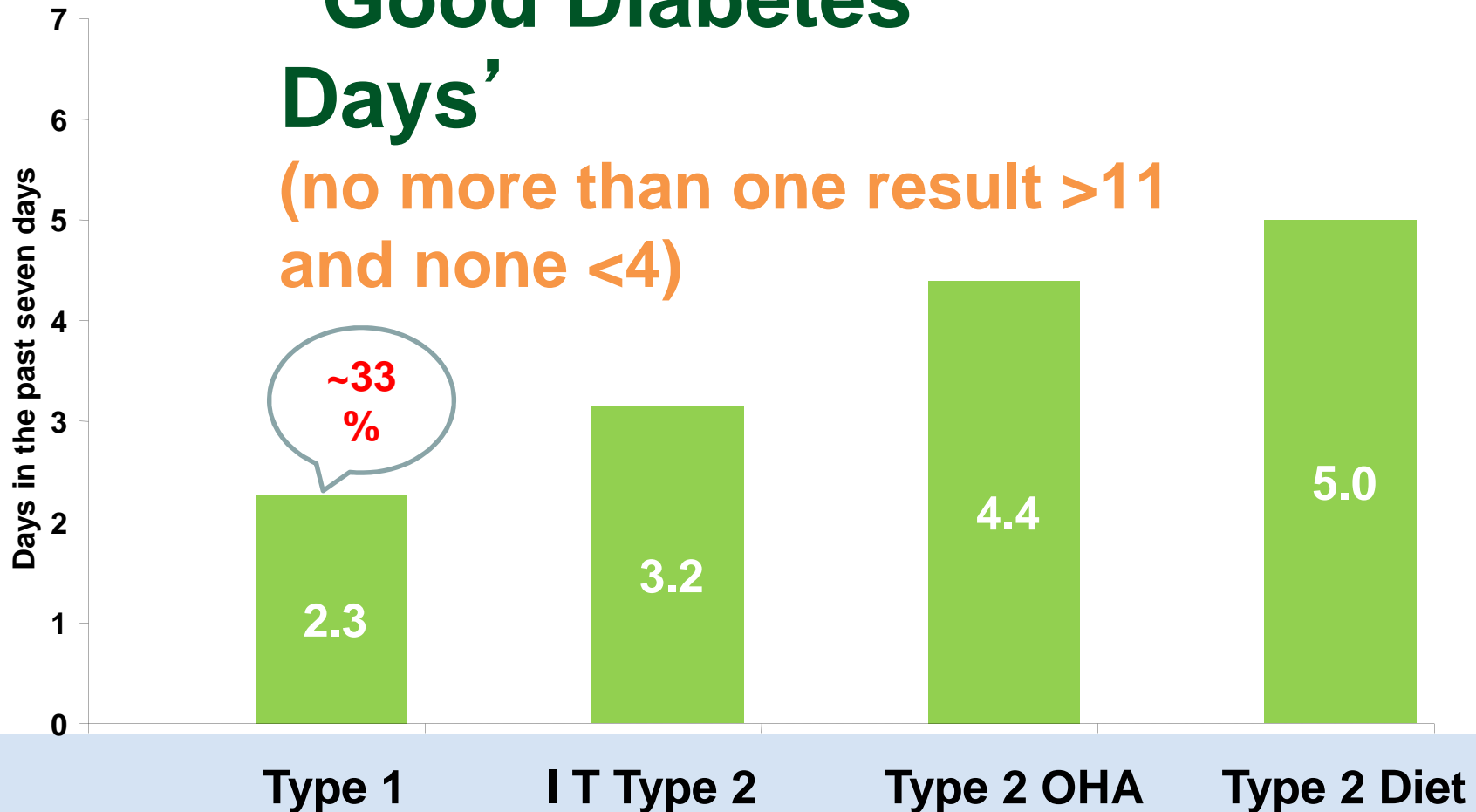
# Type of diabetes



# Glycaemic control

## 'Good Diabetes Days'

(no more than one result >11 and none <4)



# Delivery of Care

## Medication Errors (prescription & management)

37.1% Of charts had at least one medication error

26.0% Had one or more prescription errors

20.0% One or more management errors



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Inpatient care for people with diabetes

- Patient experience
- Early identification of patients with diabetes
- Early and comprehensive assessment of patients with diabetes and their needs
- Implementation of a jointly agreed care pathway
- Effective use of the inpatient specialist diabetes team
- Training of staff using adult education modules
  
- Good commissioning and planning (felt to be less relevant in Scotland)

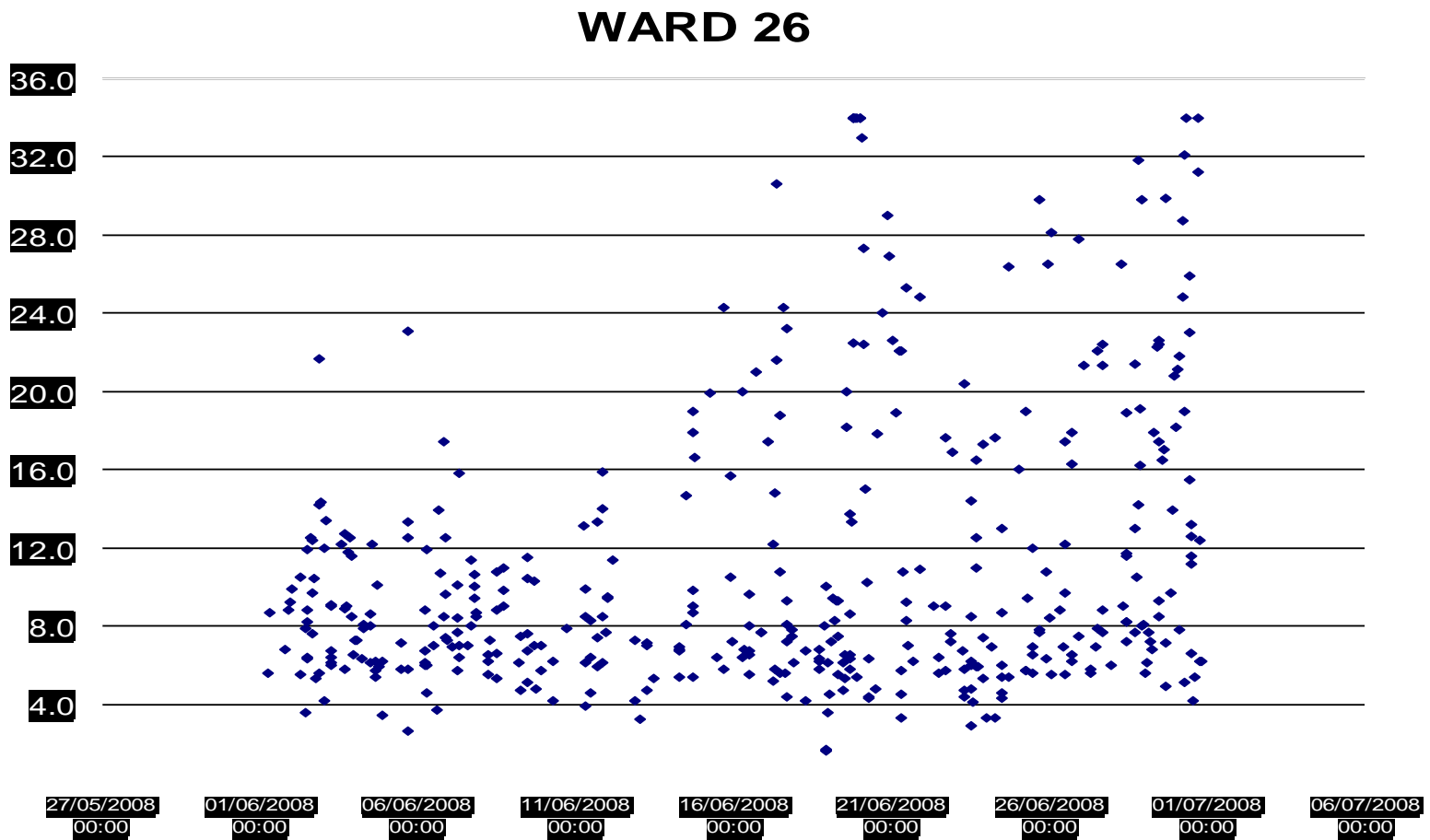
# **The Association of British Clinical Diabetologists (ABCD)**

## **Clinical Audit Programme 2009-10**

**An audit of Inpatient Diabetes Care across NHS Lothian;  
The effectiveness of the use of information technology, the Scottish  
Patient Safety Programme and 'Think Glucose'.**

John A McKnight, Karen Adamson Alan W Patrick, Mark  
Strachan, Anne Donaldson and Stuart Ritchie  
Western General Hospital, NRIE and St John's Hospital,  
Lothian, Scotland

# 'Automatic' data collection



<b>LOCATION</b>	<b>NO. OF RESULTS</b>	<b>WITH CHI</b>	<b>OTHER ID(NAME/HO SP NO)</b>	<b>WITHOUT ID</b>	<b>% ID</b>
ARAU	682	175	2	505	26
ITU & 21	2074	1691	27	356	83
Ward 2	274	52	0	222	19
Ward 3	207	13	0	194	6
Ward 4	175	15	0	160	9
Ward 6	90	54	0	36	60
Ward 22	168	45	4	119	29
Ward 23	173	1	0	172	0.5
Ward 24	130	6	0	124	5
Ward 25	181	90	1	90	50
Ward 26	402	319	0	83	79
Ward 27	177	115	1	62	66
Ward 31	115	16	0	99	14
Ward 32	192	68	1	123	35
Ward 33	346	64	1	281	19
Ward 42	56	41	0	15	73
Ward 43	49	26	7	16	67
<b>Nine</b>	<b>more</b>	<b>wards</b>			
<b>Totals</b>	<b>7954</b>	<b>3516</b>	<b>55</b>	<b>4384</b>	<b>45</b>



# ABCD

- Audit award towards this work
- 2009
- Idea to present this a year later
- 4 years on.....

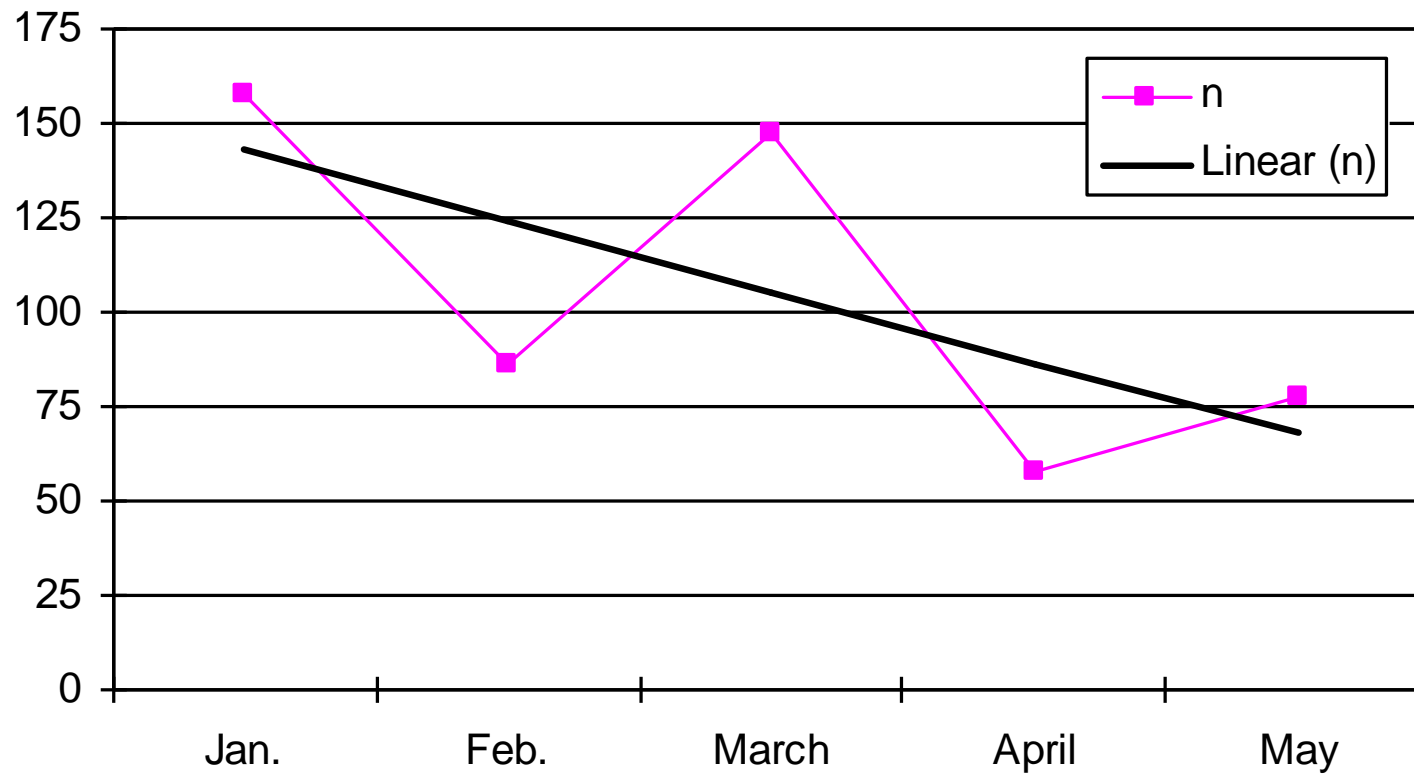
# Audit proposal

- Audit of early identification of patients with diabetes. ✓
- Rate of correctly scanning the individual patient identifier at the time of glucose measurement ✓
- Within each ward area the number and relative frequency of results below 4 mmol/l, above 12, 20 and 30 mmol/l. ✓
- Recorded management of hypoglycaemia. ✓

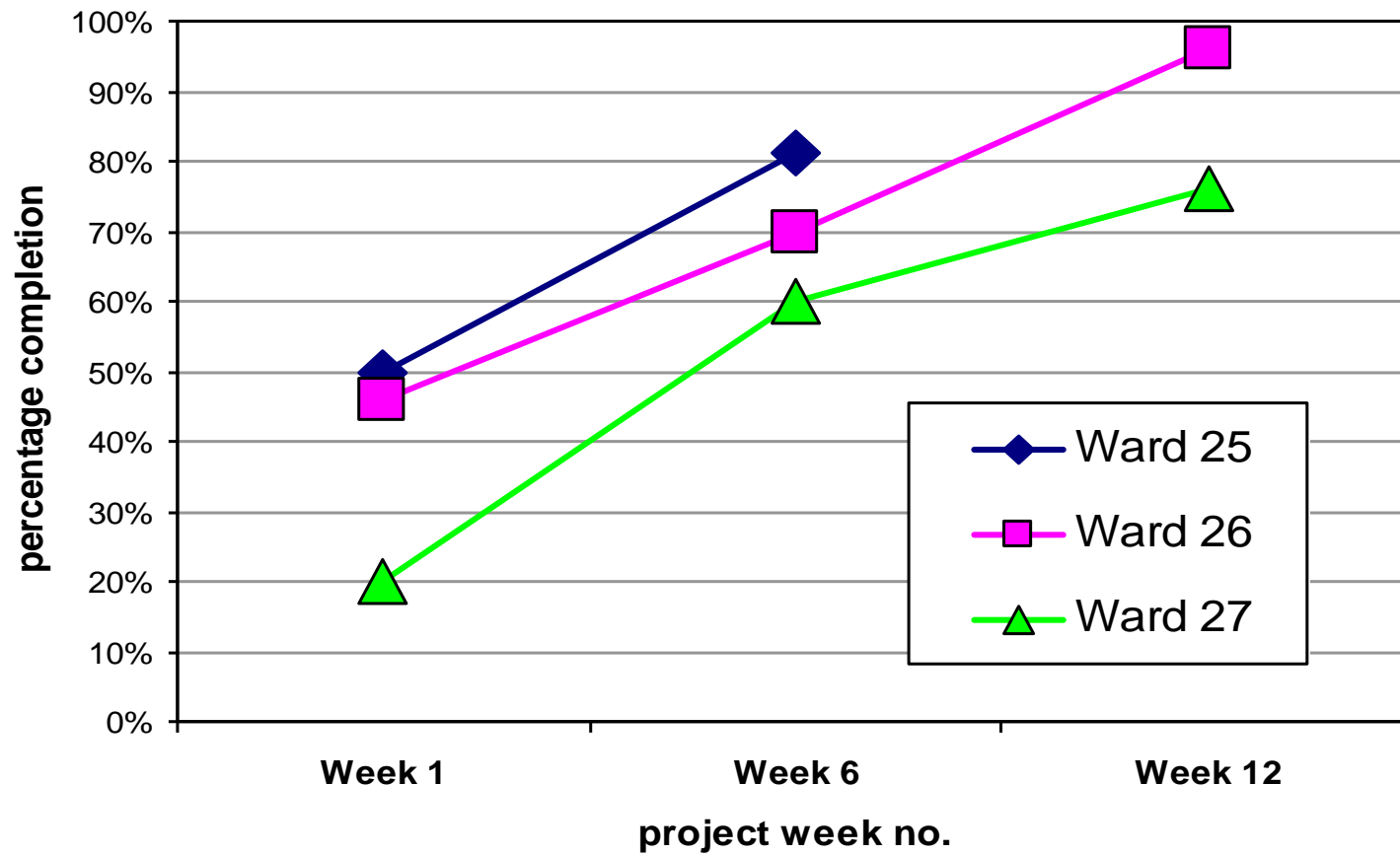
# Audit proposal

- DATIX forms audit before and after intervention
- Our IT systems will easily supply information on inpatient hospital length of stay
- Publish results

### Ward 26: number of incomplete IDs (2011)



**Wards 25, 26 and 27: completion of ID compliance**



What happened next?

# Support

- NHS Scotland Quality Improvement Hub
- Quality and Effectiveness Support Team (QuEST)
- Scottish Government Health Directorate
- Scottish Diabetes Group

# National Project team

- NHS Forth Valley
  - Dr Alison McKenzie, Lead Clinician
  - Roslyn Grant, Project Manager
- NHS Greater Glasgow & Clyde
  - Dr Colin Perry, National Lead Clinician
  - Janice Kinnaird, TG Project Manager
  - Karen Ross, Planning Manager, LTC
- NHS Lothian
  - Dr Stuart Ritchie, Lead Clinician
  - Suzanne Dillon, Project Manager
- NHS Scotland Quality Improvement Hub
  - June Watters, Improvement Advisor
  - Jackie McCallum, Improvement Advisor
-



# National project

- Phase 1 (pilot)
  - August 2011 to March 2013
  - 5 wards in 3 NHS Board areas
- Phase 2
  - Sustainable spread
  - 5 wards in 2 NHS Board areas
- Decision on full roll out nationally to be made

# Aims

- 5 wards across 3 different health boards (0.5 WTE Band 6)
- For 80% of patients with diabetes to be assessed within 24 hours of admission
- To reduce insulin errors by 50%
- To reduce hypoglycaemic episodes by 33%
- For 80% of hypoglycaemia episodes to be appropriately managed
- To reduce the mean length of stay for patients with diabetes by two days

# Patient assessment tools

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 Hospital care for people with diabetes

Assessment Slicker  
 Artwork:layout 1

## Admission for urgent or major elective surgical procedure

- Acute coronary syndrome
- Diabetic ketoacidosis / hyperosmolar / hyperglycaemic state
- Severe hypoglycaemia
- Newly diagnosed type 1 diabetes
- Newly diagnosed type 2 diabetes
- Intravenous insulin infusion with glucose outside limits
- Previous problems with diabetes as inpatient
- Intravenous insulin infusion for over 48 hours
- Impaired consciousness
- Unable to self manage
- Parenteral or enteral nutrition
- Foot ulceration
- Sepsis
- Vomiting
- Patient request

**Always Refer**



## Referral to diabetes team may be required

- Significant educational need
- Intravenous insulin infusion with good glucose control
- Nil by mouth more than 24 hours post surgery
- Persistent hyperglycaemia
- Possible type 2 diabetes
- Stress hyperglycaemia
- Poor wound healing
- Steroid therapy

**Sometimes Refer**

## Referral to diabetes team not normally required

- Minor, self treated hypoglycaemia
- Transient hyperglycaemia
- Simple educational need
- Routine dietetic advice
- Well controlled diabetes
- Good self management skills
- Routine diabetes care

**Rarely Refer**

This assessment tool is intended to provide ward staff with guidance as to when a patient requires input from the specialist diabetes team. These are not hard and fast criteria, and staff should always use their professional judgement in making referrals about individual patients.

Review status on a daily basis. If in doubt, contact the diabetes team.

Remember: All patients should have their blood glucose measured on admission.

Referral to specialist diabetes team

Always Refer

Sometimes Refer

Rarely Refer

(tick assessment made)

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### Diabetes Inpatient Assessment

Date / Time of Assessment \_\_\_\_\_

Assessment Completed by \_\_\_\_\_

Referral Made \_\_\_\_\_ Yes / No

If yes, Date / Time referral made \_\_\_\_\_

If yes, Date / Time patient seen by diabetes specialist team member \_\_\_\_\_

Referral to specialist diabetes team

Always Refer

Sometimes Refer

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# Interventions

- Education package developed delivered by DNS
- PDSA cycles – insulin errors
- Implementation of the Patient assessment tool stickers
- Implementation of Think Glucose Magnets
  
- Education of staff on Hypoglycaemia and management
- Implementation of Hypo boxes
- Implementation of Hypo algorithm
- Implementation of new Blood glucose charts with Hypo algorithm on back (CDG)

# Improvement tools

- Clinical Quality Indicators
- Ward insulin guide
- Standardised hypoglycaemia protocol (on the reverse of the insulin prescribing chart)
- Documented prescribing guidance for foundation doctors with regular feedback

## • In-patient Insulin Use and Supply •

- The majority of patients with diabetes are treated using a small number of insulin preparations
- Patients admitted as emergencies to in-patient sites may not have their prescribed insulin on their person
- The appropriate ward stock insulin can be prescribed and substituted on a unit-for-unit basis with the patients usual insulin, until this can be supplied by pharmacy or the patient can self administer their own insulin

**To facilitate safe insulin use, the following advice is provided**

- Patients bringing their own supply, and who are able to administer their own insulin, should do so.
- Patients who do not bring their own insulin, or who cannot administer their own insulin, should receive ward stock as follows:

Duration of action Supply	Rapid Immediate with food	Short 15 to 30 minutes before food	Long Same time every day	Intermediate Same time every day	Analogue Mixture Up to 15 minutes before food	Fixed Mixture Up to 30 minutes before food
Patients usual insulin	Novorapid Humalog Apidra	Actrapid Velosulin Humulin S Insuman rapid	Lantus Levemir	Insulatard Humulin I Insuman Basal	Humalog Mix 25 Humalog Mix 50 Novomix 30	Humulin M3 Mixtard 30 Insuman Comb (15,25,50)
Ward stock alternative (as 10ml vials)	<b>Novorapid</b>	<b>Actrapid</b>	<b>Lantus</b>	<b>Insulatard</b>	<b>Humalog Mix 25</b>	<b>Humulin M3</b>

\*For patients who are on non-human insulin preparations, it is acceptable to receive a dose of the human equivalent prescribed with close monitoring of capillary blood glucose.

If patients require a supply of their own insulin from the hospital pharmacy, it should be ordered on an Individualised Patient Supply Form (IPS) from pharmacy. This should be sent home with the patient on discharge. Until this supply is delivered then the above guideline should be used to avoid the omission of insulin doses.

**Points to remember:**

- All insulin vials should be marked with the date of first use.
- Within the hospital, all vials expire 4 weeks after their first use.
- Under no circumstances should pen devices be administered by nursing staff.
- Under no circumstances should insulin cartridges be used for drawing up insulin into a syringe.

# Education

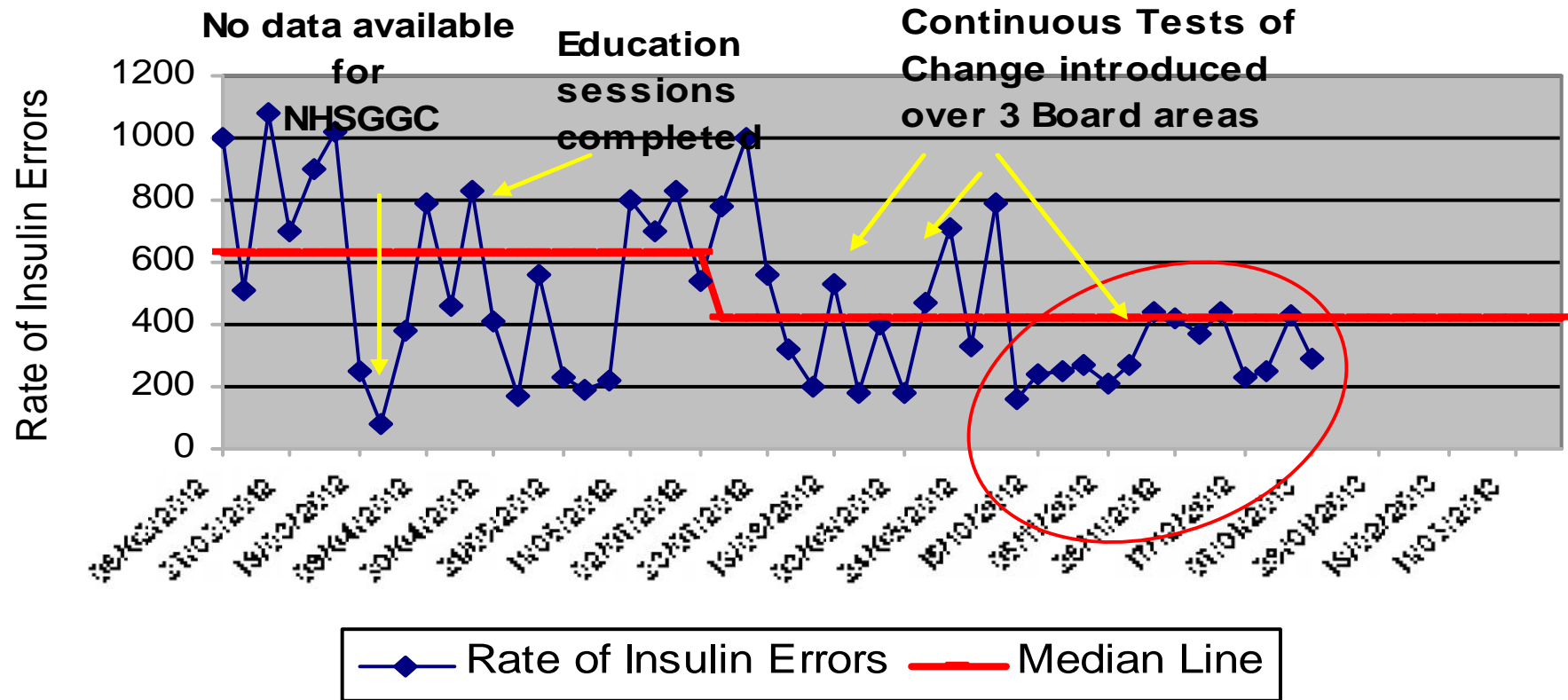
- PDSA cycles especially in insulin errors
  - Weekly visits with immediate feedback
  - Monthly newsletters
- Education on Safer use of insulin
  - Mandatory FY1
  - Encouraged for other healthcare workers
- Since August 2013
  - Insulin teaching 1 hour (Lothian wide)
  - Mandatory FY1 induction – learnpro module
  - Hypoglycaemia (25 mins)
  - Case based teaching in first foundation post
  - With consultant 1 hour



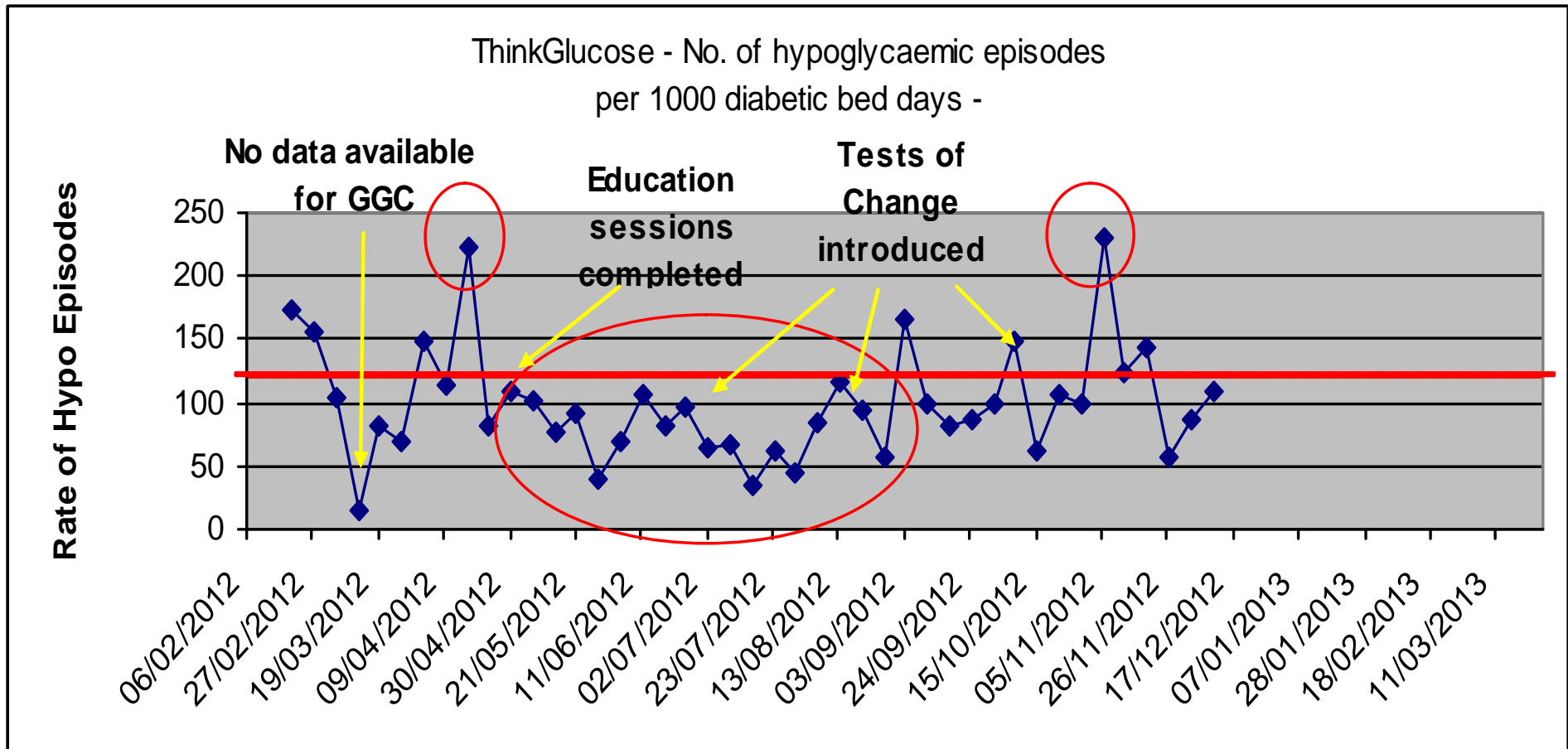


# Aim: Reduce Insulin errors by 50%

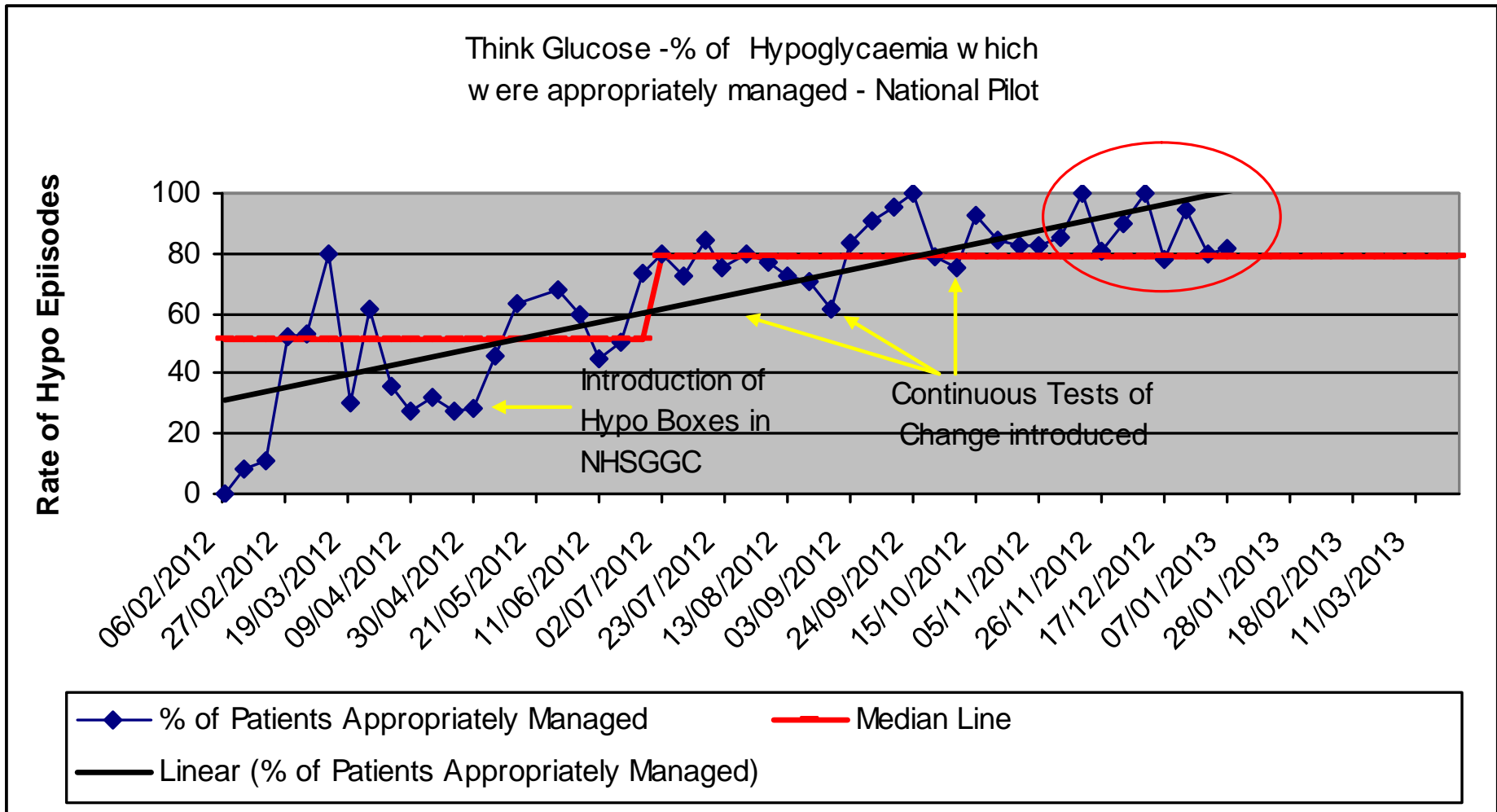
ThinkGlucose - No. of insulin prescribing errors per 1000 insulin treated bed days - National Pilot



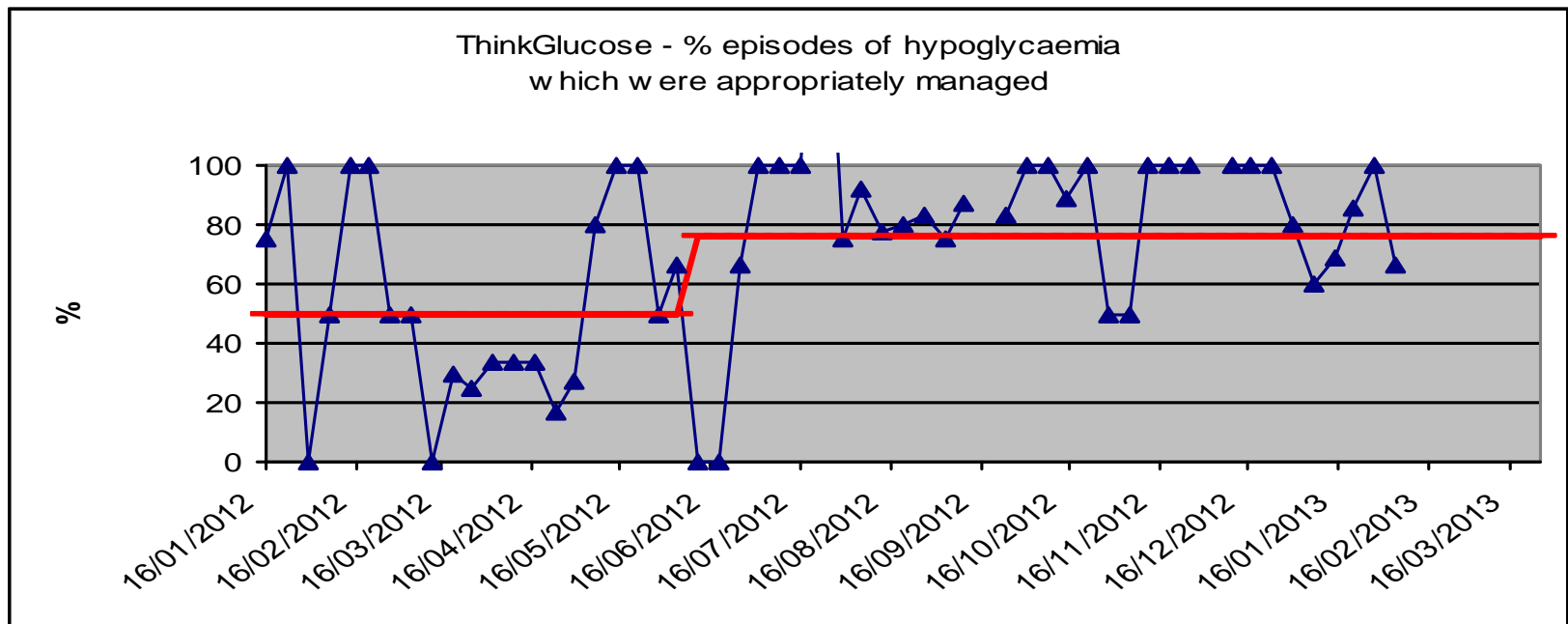
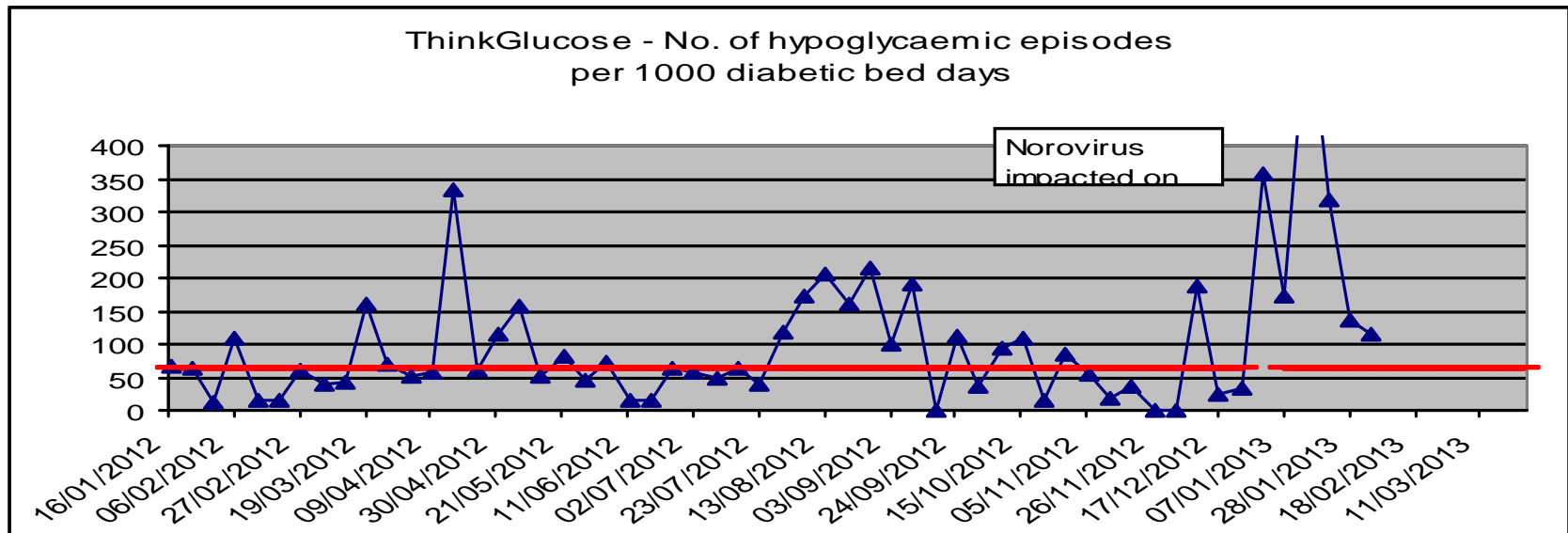
# Aim: To reduce hypoglycaemic episodes by 33%



# 50% increase in the appropriate management of hypoglycaemic episodes

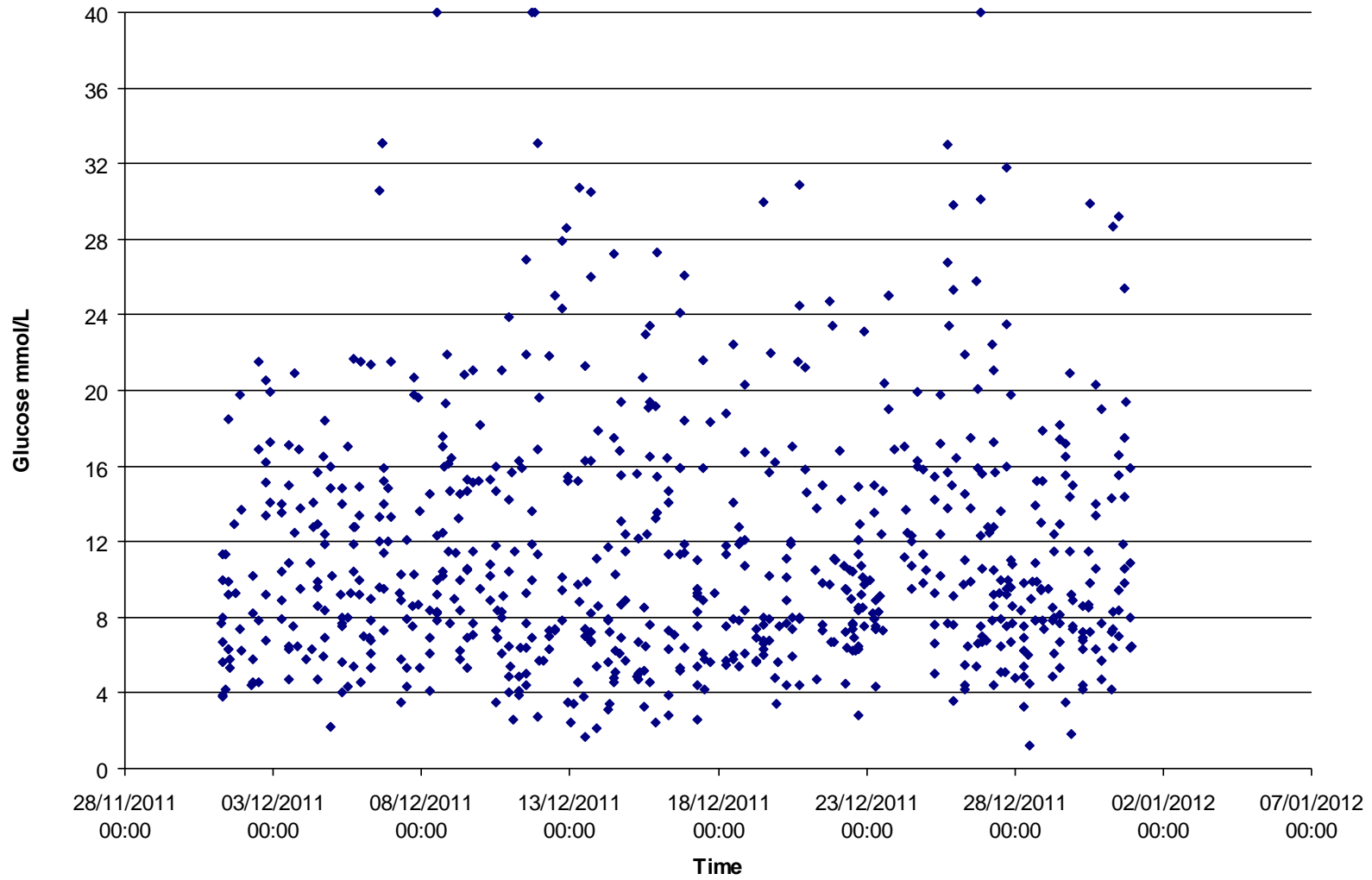


(Methodology change)

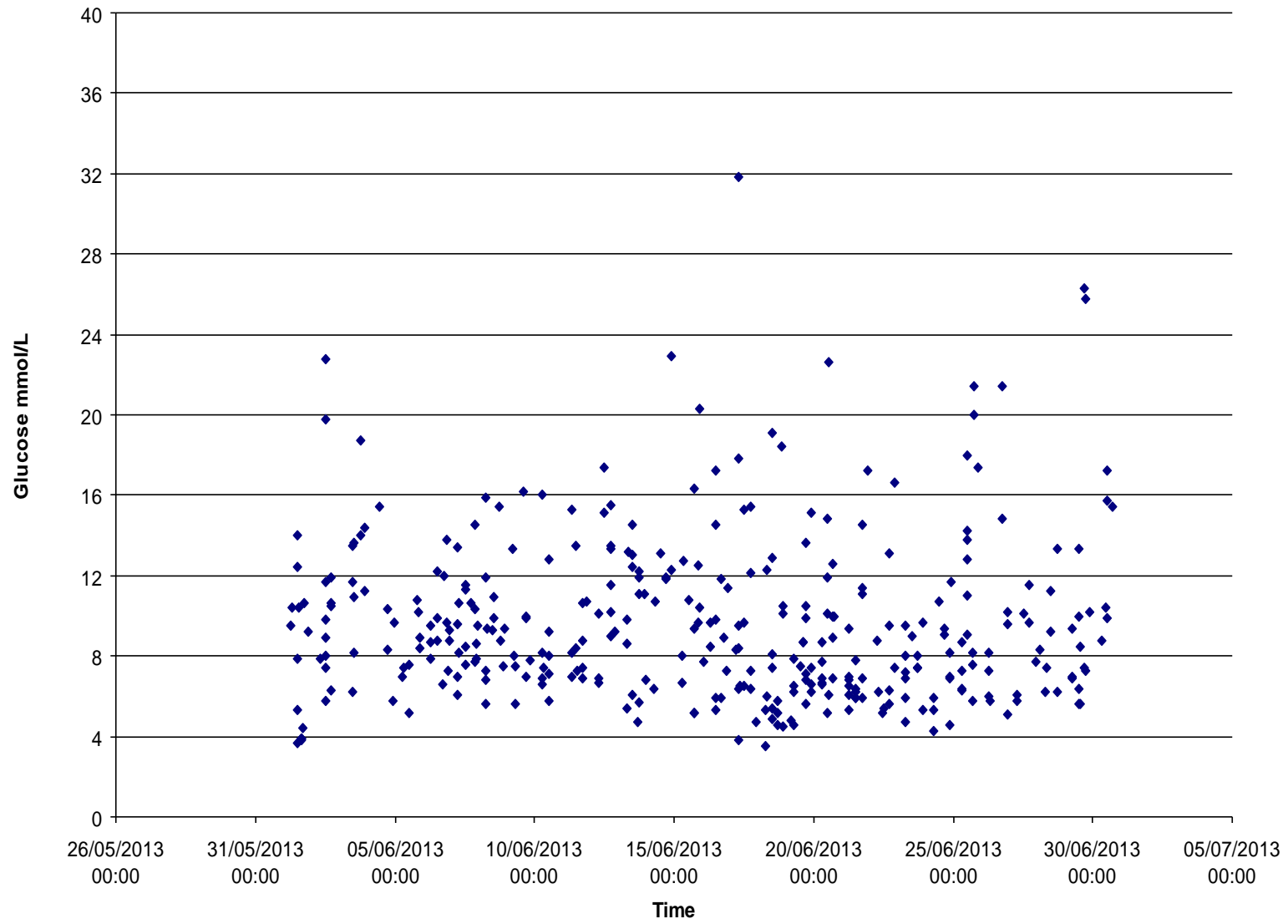


# Challenges and constraints

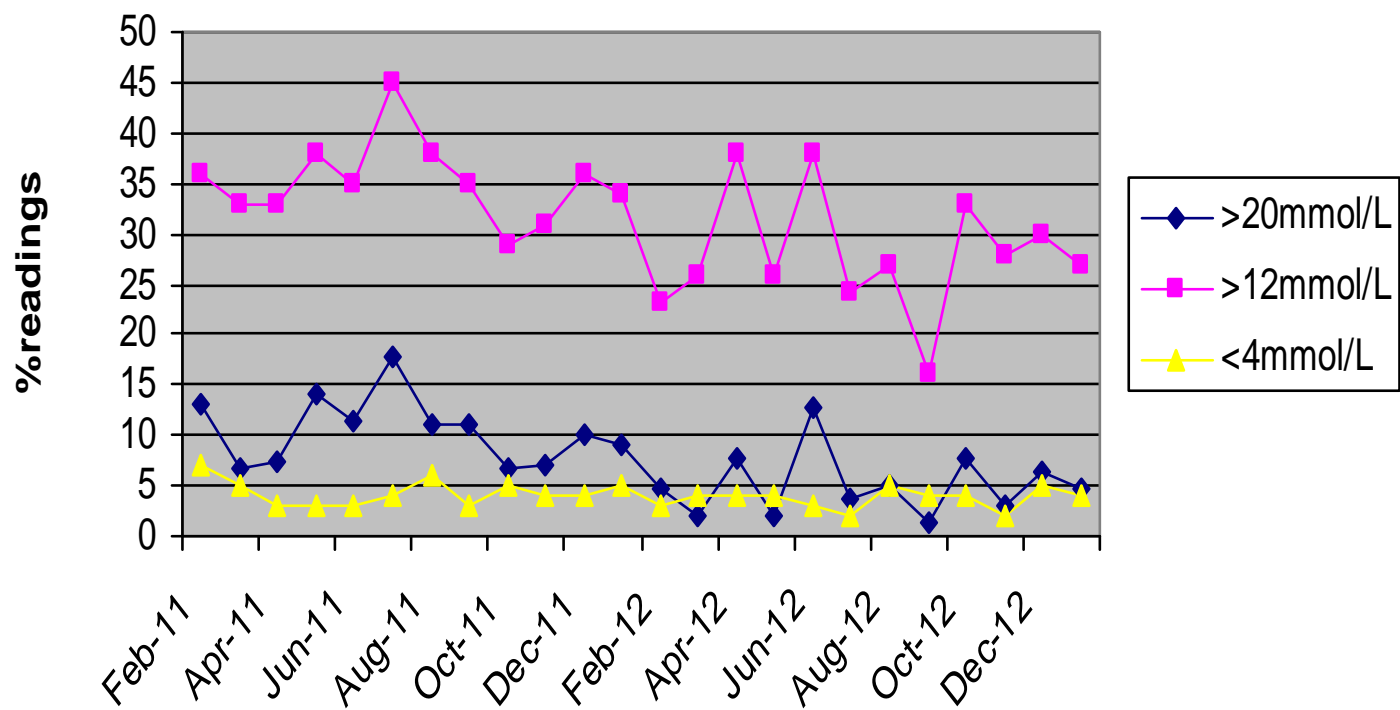
WARD 26 DEC 11  
710 RESULTS, 4% <4, 36% >12



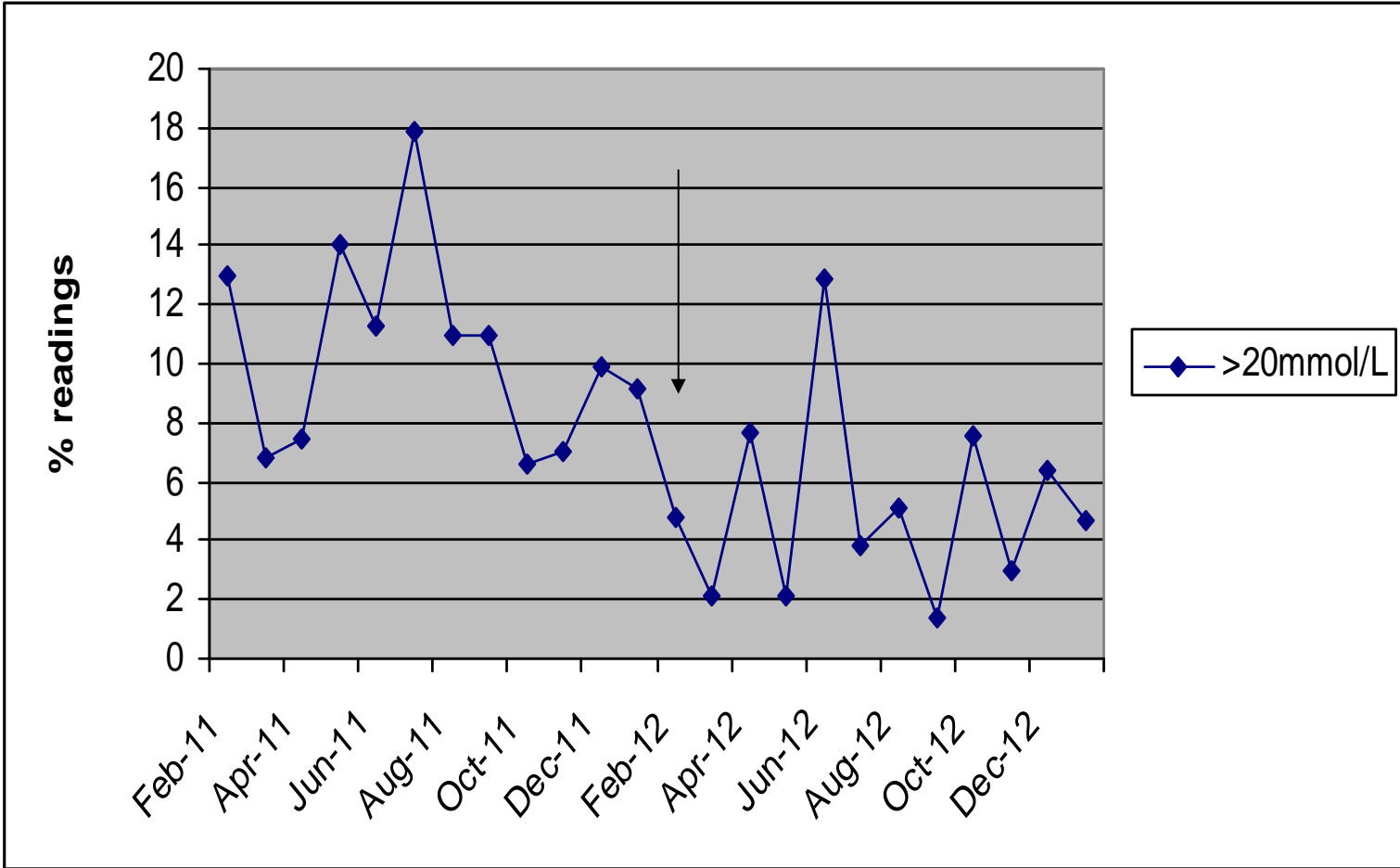
WARD 26 JUN 13  
357 RESULTS, 2% <4, 21% >12



### Glucose readings on ward26







10.4%

5.1%

> 12mmol/L	
Pre	35%
Post	28%



