



Gloucestershire

Gloucestershire Care Services

# Telehealth – The Gloucestershire Experience

care

Ann Aspinall Project Manager  
Adrian Strain CNS Heart Failure

care

# What we will cover

- What we mean by Telehealth
- Outcomes for patients
- Benefits for practitioners
- Maximising the benefits for all
- Issues raised
- Telehealth in practice
- The future in Gloucestershire

# Telehealth

- The remote monitoring of vital signs and lifestyle of patients on a regular basis and as frequently as the patient's condition requires
- The passing and sharing of this information to appropriate clinicians to allow early intervention /ongoing management of patients
- Not an Emergency Response Service





# Outcomes for Patients

## Anticipated outcomes:

- Patients learn to manage their condition
- Less visits to GP
- Less frequent visits by professionals
- Reduces unscheduled hospital admissions
- Remain in own environment for longer
- Improves the way patients and their families access information and learn
- Decreases patient anxiety

# Benefits for Practitioners

## Anticipated benefits:

- Indicates 'trends' in the patient's condition allowing for earlier intervention
- Improves delivery of care and access to information
- Reduces unplanned admissions
- Lowers healthcare costs, reduces travel and decreases patient waiting time

# To Maximise the Benefits

- Develop a Service Model
- Right staff with right competencies
- Criteria for selection of patients
- Understand the patients
- Ethics and consent
- Ensure technology is easy to use
- Train patients in use of technology and importance of daily readings
- Reassure patients that results are actively monitored

# Issues Raised

- Ethics
- Informed Consent
- Roles & Responsibility
- Training
- Monitoring & Evaluation
- Contracts
  - Manufacturer
  - Support & Maintenance
- Funding



# Current Position

- Heart Failure
  - 60 monitors
  - 163 patients
  - Expanding to 90 monitors
- Respiratory
  - 56 monitors
  - 83 patients
  - Expanding to 98 monitors
- Innovations
  - LD 6/52 project
  - Diabetes?
  - Care Homes?

# Monitoring & Evaluation

- SF 36v2 Quality of Life (QOL)
- Patient Satisfaction Survey
- GP/Staff Satisfaction Surveys
- Hospital database to audit hospital admissions and avoidance rate (related to condition only)
- Athena (Heart Failure database)
- Project manager and admin
- The nurses

# What impressed you most?

- It saves a lot of hospital visits
- Immediate improvement in my general health
- Simplicity - compactness and visual read out to keep user informed
- The whole system is admirable - in particular the fact that any blip in my condition is transmitted immediately and "the team" responsible for me react accordingly. This allows me to carry on doing those things of which I am capable, with complete confidence

# Demonstrate cost savings

- Each admission costs:
  - HF - £2,900
  - COPD - £2,300
- Follow Up Out Patients Appointments:
  - HF - £80
  - COPD - £99
- Using methodology created by British Heart Foundation to identify saved acute admissions (not validated)



*Gloucestershire*

Gloucestershire Care Services

# Telehealth in practice

care





**Gloucestershire floods 2007 and snow 2010**



# Gloucestershire

Population 601,405



**Distances:**

Tewkesbury to Cirencester 22 miles

Lydney to Chipping Campden 47 miles

# Criteria for installation

- *Patients must meet **all** of the following criteria:*
  - Over 18 and registered with a Gloucestershire GP.
  - Identification and final selection by the Team.
  - Has the manual dexterity and competency/capacity to use the equipment or a carer who can assist and support them.
- *One or more;*
  - Had one or more unplanned hospital admissions in the last 12 months
  - Following referral the patient is judged to be likely to have unplanned admissions e.g. for lack of concordance with treatment.
  - Telehealth forms part of a supported discharge package to avoid readmission.
  - Frequent medication changes and titration of therapy requiring regular monitoring to stabilise their condition.
  - Deemed to be motivated to self manage and take greater control of their symptom management following an evaluation with their Heart Failure Service
  - The patient will significantly benefit from the extra monitoring/self care element of the Telehealth approach over and above present monitoring.



# Exclusion Criteria

Patients will be excluded from Telehealth monitoring if they meet **one** of the following criteria:

- Identified as palliative, for comfort care only.
- Those not wishing to receive the service.
- Those lacking manual dexterity and have no carer able to undertake the daily readings on their behalf (nurse decision)
- Known to have behavioural problems or the installation of Telehealth would exacerbate adverse health behaviour/s.
- Cognitive impairment sufficient to interfere with their use of the Telehealth equipment and do not have a carer to support them.

# In other words

- Titration of medication
  - Low BP
  - Large geographical & rural county
  - Patients who work
- Unstable patients
  - Known to decompensate without close HF nurse intervention
  - Non health seeking
  - Risk of decompensation
  - Don't 'get it'
- New Referrals / Recent hospital discharges
- Nurses refer patients to me directly – using the agreed criteria and their clinical acumen as to whether patient appropriate for Telehealth

# Data Recorded

- Weight
- Blood Pressure
- Heart Rate
- Oxygen Saturation
  - Cold fingers can be a problem!
- 2 Questions
  - More SOB today?
  - Extra pillows last night?
- Individual parameters are set for the patient

# How we do it

## Nurse led service

- Nurse installs monitors in patients' homes and trains them on its use
  - Monitor requires Electricity and BT phone line (0800 number)
- No external help with installations

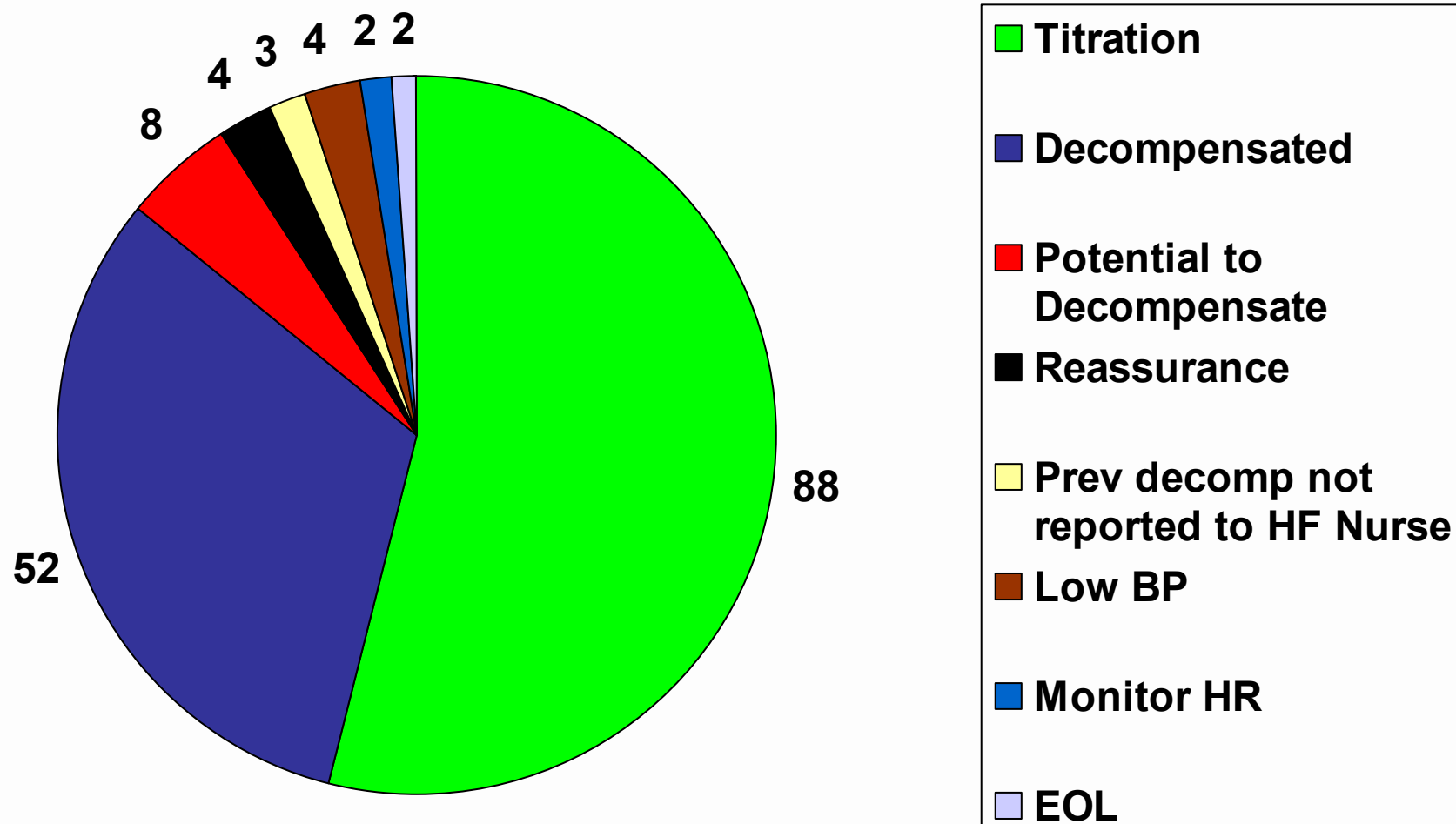
# Reviewing Data

- No call centre
- Nurses responsible for reviewing their patients' data (Mon – Fri)
  - Messages relayed to colleagues
  - Lead Nurse has ultimate responsibility for ensuring data is checked
  - Patients monitor 7 days a week
- Patients telephoned if intervention or retests are required
- Face to Face contact same day if necessary

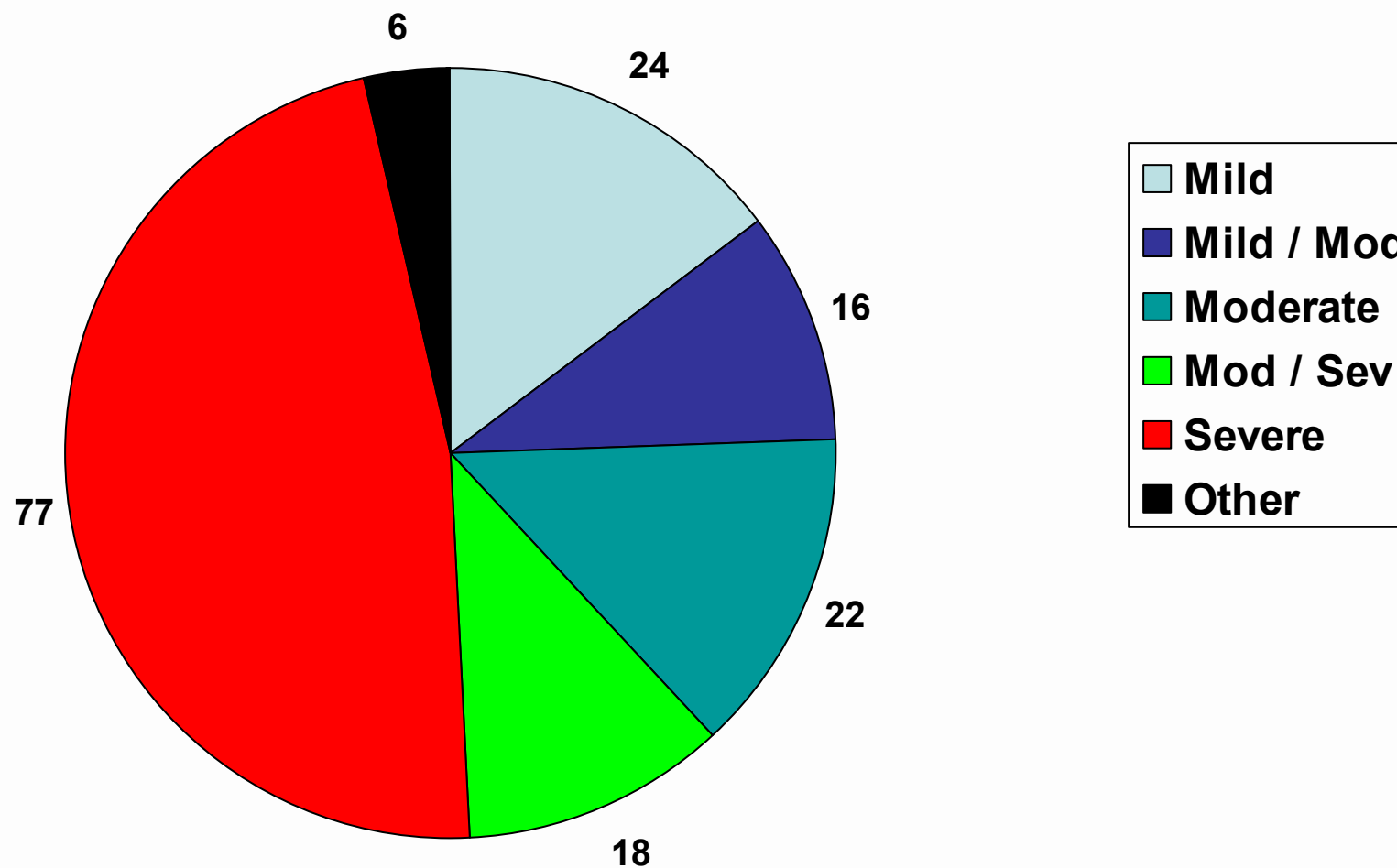
# Audit

- 163 patients with HF have used Telehealth
- 8 months is average time patient is monitored
  - All patients' suitability for continued monitoring reviewed every 3 months
- Age range
  - 20 – 98 years

# Reason For Telehealth



# Severity of LVSD





# Criteria

## Admission Avoided

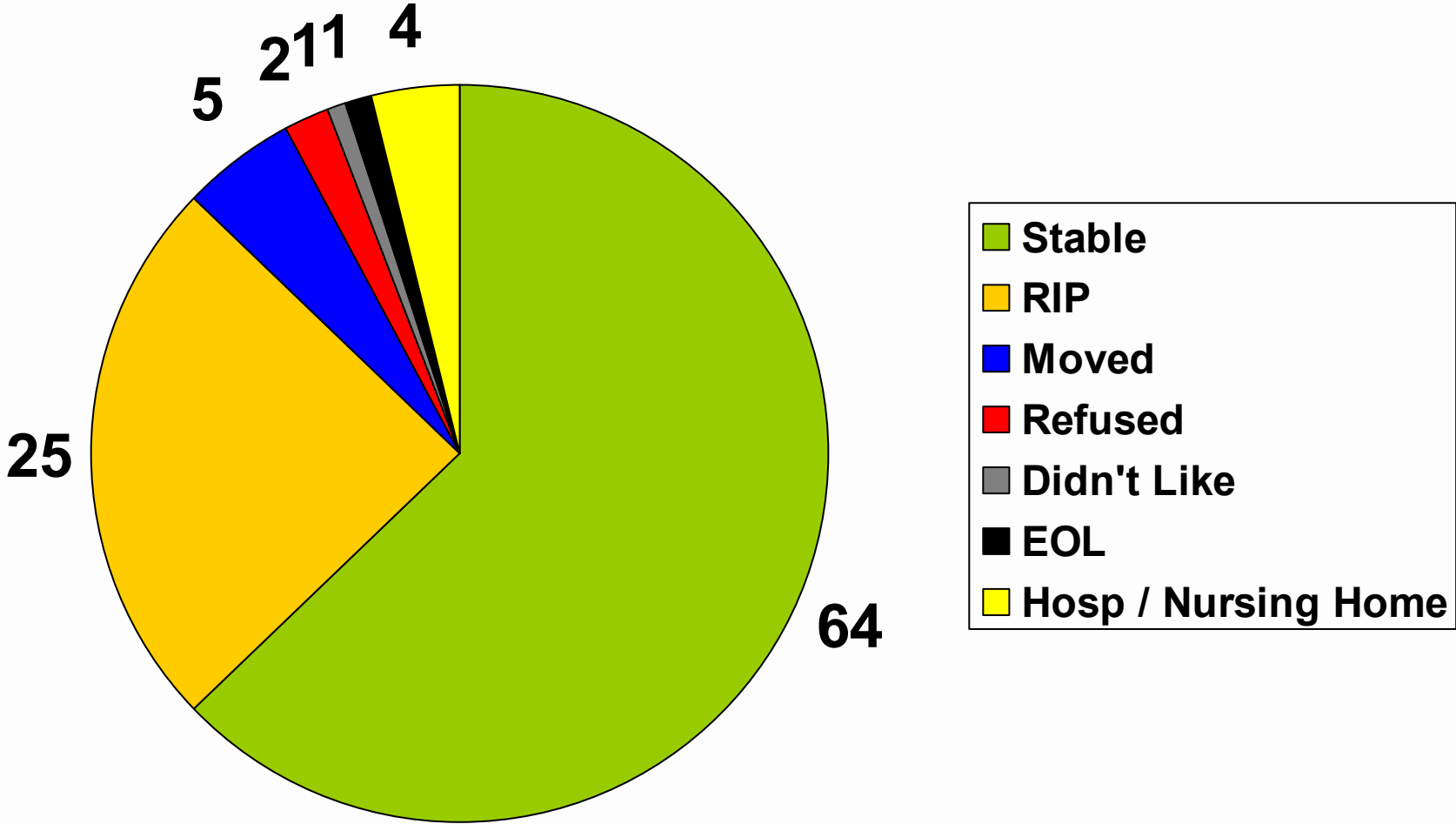
- BHF tool
  - Non accredited
- Weight gain 2kg
- Reviewed
  - Telephone / Face to Face Contact
- Medication Changed
- Reviewed within 72 hours
  - Telehealth / Telephone / Face to Face Contact
- Stable

# Reason For Discharge



Gloucestershire

Gloucestershire Care Services



# Outcomes at 2 years

- Self management & empowerment
- Reassurance
- Research based intervention
- Additional 60 patients on Heart Failure Service caseload
  - Equal to 1 HF Specialist Nurse case load

# The Future

- More monitors
- More staff learning to install kit
- GPRS
  - flexibility on where to site unit
- Cardiology Consultant referrals considered for non Left Ventricular Systolic Dysfunction patients

# Challenges

- Rapid installation post discharge
- Faster titrations
- Raising profile of service
  
- PAT testing
- New monitors – batteries in scales & BP machines
- Audit
- Correct infrastructure
- Funding

**Tabular Trends**

**Patient**

- Alert Limits
- Current Status
- Demographics
- Equipment Setup
- Patient Information
- Patient List
- Tabular Trends

**Organisation**

- Carers
- Diagnoses
- Equipment List
- Insurer
- Medications
- Sites/Categories
- System Configuration
- Users

**Tools**

- Change Password
- System Log
- User Settings

**System**

- Exit
- Log-off

Date	Condition	Weight	BP	SpO2	Heart Rate	Temperature
Sun 12/06/2011 20:28	Within Limits	--	118 / 73	95	96	--
Sun 12/06/2011 09:44	Missing Data	--	-- / --	98	84	--
Sat 11/06/2011 20:33	Within Limits	--	121 / 76	97	104	--
Sat 11/06/2011 11:12	Within Limits	--	124 / 68	97	92	--
Fri 10/06/2011 19:52	Within Limits	--	113 / 71	96	83	--
Fri 10/06/2011 13:30	Alert	--	105 / 74	98	89	--
Thu 09/06/2011 20:46	Within Limits	--	111 / 74	96	90	--
Thu 09/06/2011 08:59	Alert	--	115 / 71	97	98	--
Wed 08/06/2011 18:59	Alert	--	124 / 77	96	108	--
Wed 08/06/2011 11:04	Alert	--	120 / 75	95	115	--
Tue 07/06/2011 10:29	Alert	--	113 / 71	93	114	--
Mon 06/06/2011 20:38	Alert	--	134 / 76	92	116	0.0/0.0
Mon 06/06/2011 08:29	Within Limits	--	111 / 69	94	88	--
Sun 05/06/2011 20:53	Alert	--	122 / 77	90	110	--
Sun 05/06/2011 09:43	Alert	--	125 / 71	83	141	--
Sat 04/06/2011 18:28	Alert	--	124 / 75	97	102	--
Sat 04/06/2011 11:21	Within Limits	--	107 / 71	95	101	--
Fri 03/06/2011 19:56	Within Limits	--	114 / 68	97	93	--
Fri 03/06/2011 08:34	Within Limits	--	110 / 66	97	102	--
Thu 02/06/2011 18:58	Within Limits	--	118 / 69	95	79	--
Thu 02/06/2011 09:27	Within Limits	--	111 / 73	97	97	--
Wed 01/06/2011 20:06	Within Limits	--	116 / 65	97	86	--
Wed 01/06/2011 08:40	Within Limits	--	110 / 63	97	80	--
Tue 31/05/2011 20:49	Within Limits	--	114 / 71	96	87	--
Tue 31/05/2011 16:39	Within Limits	--	115 / 74	97	79	--
Mon 30/05/2011 20:40	Within Limits	--	122 / 78	95	93	--
Sat 28/05/2011 10:23	Within Limits	--	121 / 71	98	78	--

Expected Readings: 0 Scheduled Readings Recorded: 0 Next Reading:





Days 90

Sites/Categories

Tabular Trends

Vitals

- Patient**
  - Alert Limits
  - Current Status
  - Demographics
  - Equipment Setup
  - Patient Information
  - Patient List
  - Tabular Trends
- Organisation**
  - Carers
  - Diagnoses
  - Equipment List
  - Insurer
  - Medications
  - Sites/Categories
  - System Configuration
  - Users
- Tools**
  - Change Password
  - System Log
  - User Settings
- System**
  - Exit
  - Log-off

Date	Condition	Weight	BP	SpO2	Heart Rate	Temperature
✓ Fri 10/06/2011 09:00	Alert	162.4	117 / 67	95	58	--
✓ Thu 09/06/2011 09:00	Within Limits	162.0	122 / 64	96	67	--
✓ Wed 08/06/2011 09:00	Within Limits	162.6	123 / 64	95	70	--
✓ Tue 07/06/2011 09:00	Alert	163.8	126 / 66	93	64	--
✓ Mon 06/06/2011 09:00	Alert	167.4	118 / 66	97	73	--
✓ Sun 05/06/2011 09:00	Alert	166.6	123 / 70	95	69	--
✓ Sat 04/06/2011 09:00	Alert	166.6	118 / 60	96	62	--
✓ Fri 03/06/2011 09:00	Alert	167.4	122 / 57	97	66	--
✓ Thu 02/06/2011 09:00	Alert	165.2	123 / 61	96	56	--
✓ Wed 01/06/2011 09:00	Alert	163.8	109 / 57	96	64	--
✓ Tue 31/05/2011 09:00	Alert	165.0	125 / 63	97	71	--
✓ Mon 30/05/2011 09:00	Alert	166.0	107 / 60	96	62	--
✓ Sun 29/05/2011 09:00	Alert	165.8	126 / 67	96	58	--
✓ Sat 28/05/2011 09:00	Alert	164.6	121 / 65	95	53	--
✓ Fri 27/05/2011 09:00	Alert	164.4	125 / 68	97	66	--
✓ Thu 26/05/2011 09:00	Alert	164.8	131 / 70	97	63	--
✓ Wed 25/05/2011 09:00	Alert	163.2	135 / 65	96	56	--
✓ Tue 24/05/2011 09:00	Alert	163.8	127 / 66	97	57	--
✓ Mon 23/05/2011 09:00	Within Limits	163.0	123 / 67	96	68	--
✓ Sun 22/05/2011 09:00	Within Limits	163.0	124 / 67	96	65	--
✓ Sat 21/05/2011 09:00	Alert	162.0	123 / 64	96	56	--
✓ Fri 20/05/2011 09:00	Within Limits	162.8	135 / 64	95	72	--
✓ Thu 19/05/2011 09:00	Within Limits	163.0	129 / 68	96	71	--
✓ Wed 18/05/2011 09:00	Alert	163.6	124 / 68	96	64	--
✓ Tue 17/05/2011 09:00	Alert	163.4	119 / 67	95	54	--
✓ Mon 16/05/2011 09:00	Alert	164.4	125 / 77	95	65	--
✓ Sun 15/05/2011 09:00	Alert	164.0	125 / 71	95	65	--

Expected Readings: 0 Scheduled Readings Recorded: 1 Next Reading: 17/06/2011 09:00

Navigator Quick Select

Details

OK

13 1 4 2 11

# Thank You



*Gloucestershire*

Gloucestershire Care Services

[ann.aspinal@glos.nhs.uk](mailto:ann.aspinal@glos.nhs.uk)

[adrian.strain@glos.nhs.uk](mailto:adrian.strain@glos.nhs.uk)