

How a Busy Anticoagulant Service Monitors the NPSA Safety Indicators

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Anticoagulant Clinic

The Royal Berkshire Hospital

- Large DGH located in the town of Reading
- Serves >500,000 patients
- Large Geographical catchment area
- >1000 Beds
- >4,000 staff
- Annual budget of £228 million
- Douglas Bader, legs amputated 1931
- Kate Middleton, born 1992

RBH Anticoagulant Service

Workload

5250 patients

93,000 INRs Sept'10 to Sept'11

Postal Results Service but urgent
dose changes are telephoned
on the day

Automation

3 x Sysmex CS

DAWN AC # 7.6

Staffing

2 Nurse (Band 6 & Band 7)


1 Admin (Band 4)

1 BMS (Band 7/6)

1/2 MLA

Total 4 1/2 FTE Every Day


NPSA Patient Safety Alert 18



 National Patient Safety Agency

Patient safety alert

18



Alert

28 March 2007

Actions that can make anticoagulant therapy safer

Anticoagulants are one of the classes of medicines most frequently identified as causing preventable harm and admission to hospital.^{1,2} Managing the risks associated with anticoagulants can reduce the chance of patients being harmed in the future.

This patient safety alert has been developed in collaboration with the British Society for Haematology (BSH) and a broad range of other clinical organisations and individual clinicians, patients and patient groups.

Action for the NHS and the independent sector

The National Patient Safety Agency (NPSA) is recommending that NHS and independent sector organisations in England and Wales take the following steps:

- 1 Ensure all staff caring for patients on anticoagulant therapy have the necessary work competences. Any gaps in competence must be addressed through training to ensure that all staff may undertake their duties safely.
- 2 Review and, where necessary, update written procedures and clinical protocols for anticoagulant services to ensure they reflect safe practice, and that staff are trained in these procedures.
- 3 Audit anticoagulant services using BSH/NPSA safety indicators as part of the annual medicines management audit programme. The audit results should inform local actions to improve the safe use of anticoagulants, and should be communicated to clinical governance, and drugs and therapeutics committees (or equivalent). This information should be used by commissioners and external organisations as part of the commissioning and performance management process.
- 4 Ensure that patients prescribed anticoagulants receive appropriate verbal and written information at the start of therapy, at hospital discharge, on the first anticoagulant clinic appointment, and when necessary throughout the course of their treatment. The BSH and the NPSA have updated the patient-held information (yellow) booklet.
- 5 Promote safe practice with prescribers and pharmacists to check that patients' blood clotting (International Normalised Ratio, INR) is being monitored regularly and that the INR level is safe before issuing or dispensing repeat prescriptions for oral anticoagulants.

Immediate action ☐

Action ☒

Update ☐

Information request ☐

Ref: NPSA/2007/18

For response by:

- All NHS and independent sector organisations in England and Wales

For action by:

- The chief pharmacist/pharmaceutical adviser should lead the response to this alert, supported by the chief executive, medical director, nursing director and clinical governance lead/sr manager

We recommend you also inform:

- Medical staff
- Nursing staff
- Pharmacy staff
- General practitioners
- Community pharmacists
- Dental surgeons
- Patient advice and liaison service staff in England
- Community health councils in Wales
- Medical laboratory scientists

The NPSA has informed:

- Chief executives of acute trusts, primary care organisations, ambulance trusts, mental health trusts and local health boards in England and Wales
- Chief executives/regional directors and clinical governance leads of strategic health authorities (England) and regional offices (Wales)
- Healthcare Commission
- Healthcare Inspectorate Wales
- Commission for Social Care Inspection

- Medicines and Healthcare products Regulatory Agency
- Wales Health Supplies
- Royal colleges and societies
- NHS Direct
- Relevant patient organisations and community health councils in Wales
- Independent Healthcare Forum
- Business Services Centre (Wales)
- Independent Healthcare Advisory Services

- issued 28th March 2007
- “Anticoagulants are one of the classes of medicines most frequently identified as causing preventable harm and admission to hospital”
- “Actions that can make anticoagulant therapy safer”

Action Points

- Ensure all staff caring for patients on anticoagulants have the necessary work competences.
- Written procedures and clinical protocols.
- All patients to receive verbal and non verbal information.
- Promote safe practice with prescribers.
- Promote safe practice when co-prescribing interacting medicines.
- Dental guidelines.
- Promote written practices for social care settings.
- **Undertake Audit using the NPSA safety indicators**

Safety indicators for Patients on OAT

“Proportion of patient time in range”

45 Dawn Clinical Software & Internet Applications. - Windows Internet Explorer

DAWN Clinical Framework version 7.6 Reports

Report:

Start date:

End date:

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Target Range	Days On Treatment	Days In Range	% TIR
1.5 - 2.0 (Target 1.75)	1473	669.92	45.48
1.5 - 2.5 (2.0 Target)	24015	19073.57	79.42
1.8 - 2.3 (2.05 Target)	826	405.45	49.09
2.0 - 2.5 (Target 2.25)	11011	5277.23	47.93
2.0 - 3.0 (2.5 Target)	685008	467291.28	68.22
2.5 - 3.0 (Target 2.75)	6047	2669.2	44.14
2.5 - 3.5 (3.0 Target)	71946	46236.54	64.27

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Done

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Safety indicators for Patients on OAT

% INRs >5, >8 and <1.0 unit below the target

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Reports

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Therapy	Target Range	INRs > 5	INRs > 8	INRs > 1 unit below Target	Total INRs
Maintenance	1.5 - 2.0 (Target 1.75)	1	0	0	131
Maintenance	1.5 - 2.5 (2.0 Target)	12	4	0	871
Maintenance	1.8 - 2.3 (2.05 Target)	1	0	0	68
Maintenance	2.0 - 2.5 (Target 2.25)	12	1	12	683
Maintenance	AFNR98 2.0-3.0	693	96	1907	43016
Maintenance	2.0 - 3.0 (2.5 Target)	804	122	1635	35648

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Safety indicators for Patients on OAT

Percentage of patients suffering adverse outcomes, categorised by type, such as major bleed

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Event	Severity	Count	Patient Years	% per Patient Year
ADMISSION VIA AC CLINIC	Major (Hospitalisation)	6	5136.57	0.12
BERIPLEX	Moderate (Hospitalisation)	4	5136.57	0.08
BERIPLEX	Unspecified	2	5136.57	0.04
BLEED LOWER GI	Moderate (Hospitalisation)	11	5136.57	0.21
BLEED UPPER GI	Major (Hospitalisation)	10	5136.57	0.19
BLEEDING- ANY OTHER SITE	Moderate (Hospitalisation)	8	5136.57	0.16

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Event	Severity	Count	Patient Years	% per Patient Year
<div>Patient Years = Count of INR's x Avg Interval / 365</div>				0.21
				0.26
				0.62
				1.34
				2.11
				1.29
				0.48
				1.39
TIA	Moderate	27	1942	1.39
CVA	Moderate	18	1942	0.93
BRUISING (> 10cm diameter)	Minor	56	1942	2.88
HAEMATURIA	Minor	43	1942	2.21
NOSE BLEED (not self-arresting)	Minor	74	1942	3.81



Safety indicators for Patients on OAT

Percentage of Patients lost to follow up

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Exceeded Non Attendance Limit	Still Active	% Lost to Follow Up
88	5248	1.65

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Internet Applications. - Windows Internet Explorer

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No Next Test Date	Current Active	% With No Next Test
16	5251	0.3

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Safety indicators for Patients on OAT

Percentage of Patients with unknown/inappropriate Target INR, unknown diagnosis or stop date

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DAWNClinical version 7.6
Framework

Reports

Report: NPSA #7-8 Patient Cnt By Range, Diag and Duration

Diagnosis:

- AF for Ablation - AF for Ablation
- AFC - AF For Cardioversion
- AFNR - Non Rheumatic AF
- AFNR98 - Non Rheumatic AF 98
- AFTIA - AF with TIA/CVA
- ARTERIAL DIS - Arterial Disease
- ARTIFICIAL VALVE - Artificial Heart Valve
- CARDIOMYOPATHY - Cardiomyopathy

Target Range:

- None Specified
- 1.3 - 1.7 (Target 1.5)
- 1.5 - 2.0 (Target 1.75)
- 1.5 - 2.5 (2.0 Target)
- 1.8 - 2.3 (2.05 Target)
- 2.0 - 2.5 (Target 2.25)
- 2.0 - 3.0 (2.5 Target)
- AFNR98 2.0-3.0

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Diagnosis Target INR Duration of Therapy Count Total % of Total

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Safety indicators for Patients on OAT

Percentage of patients in therapeutic range at discharge

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DAWN Clinical Framework version 7.6 Reports

Report:

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End date:

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First Maintenance INR In Range	Total	% In Range
378	1508	25.07

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How do we “Promote safe practice with prescribers”

- Every INR dosage event is uploaded to GP web links with next test date
- DNA process automated such that GP is copied in at 3rd DNA and advised to stop prescribing
- DAWN AC compiles a list view that pulls up by anticoagulant start date annually. Bulk letter printed in blocks of GP (approx 300 per month)
? emailing

“Our NPSA List view”

DAWN Clinical Framework version 7.6

You have control

List view

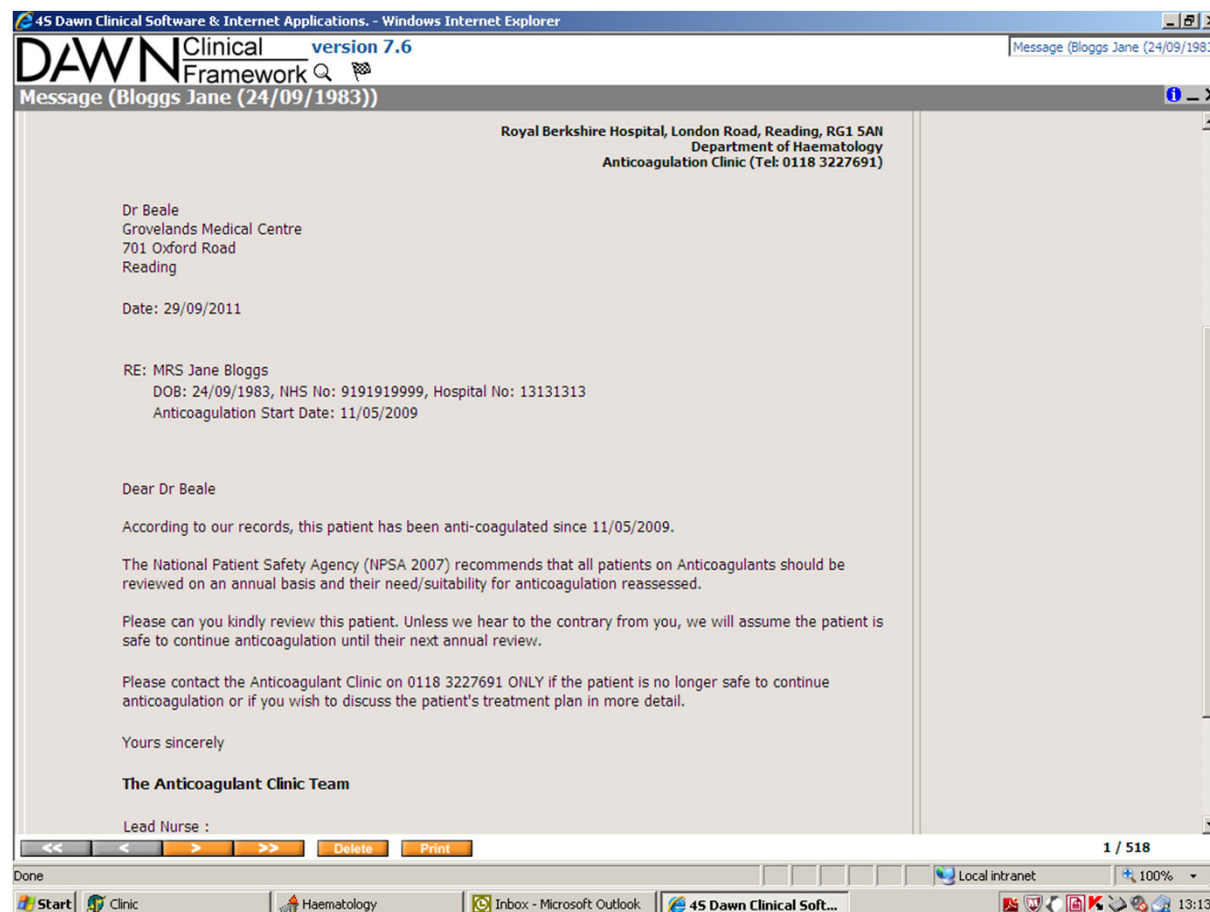
With

Attendance (Unfiltered) | BMS | Nurse | Nurse phone | Non Attendance | Procedures | Phone List | Status/No next to

Filter With Missed review letters
27 records found.

Name	UnitNo	DOB	Treatment Start Date	Diagnosis
	966		06/10/2009	DVT LMWHeparin Prot
	934		02/10/2008	AF with TIA/CVA
	951		10/10/2002	Rec VTE off anticoagul
	946		06/10/2010	AF For Cardioversion
	940		08/10/2009	Rec VTE off anticoagul
	957		06/10/2010	Pulmonary Embolism
	941		06/10/2010	AF For Cardioversion
	942		06/10/2009	Non Rheumatic AF 98
	933		08/10/2009	Non Rheumatic AF 98
	941		07/10/2010	Non Rheumatic AF 98
	964		05/10/2009	Mural Thrombus
	933		08/10/2009	Non Rheumatic AF 98
	944		09/10/2010	Non Rheumatic AF 98
	944		08/10/2010	Non Rheumatic AF 98
	963		07/10/2010	Rec VTE off anticoagul
	921		08/10/2010	Non Rheumatic AF 98
	942		02/10/2008	Aortic Valve Prosthesis
	940		06/10/2009	Non Rheumatic AF 98
	938		01/10/2008	Non Rheumatic AF 98
	943		04/10/2010	Non Rheumatic AF
	932		05/10/2010	Rec VTE off anticoagul
	941		07/10/2009	Non Rheumatic AF 98
	943		08/10/2010	Mural Thrombus
	965		28/09/2008	Aortic Valve Prosthesis
	923		08/10/2009	Non Rheumatic AF 98
	956		01/10/2008	Rec VTE off anticoagul
	952		03/10/2008	Cardiomyopathy

“Our NPSA Annual Review Letter”



How we Monitor Other safety indicators

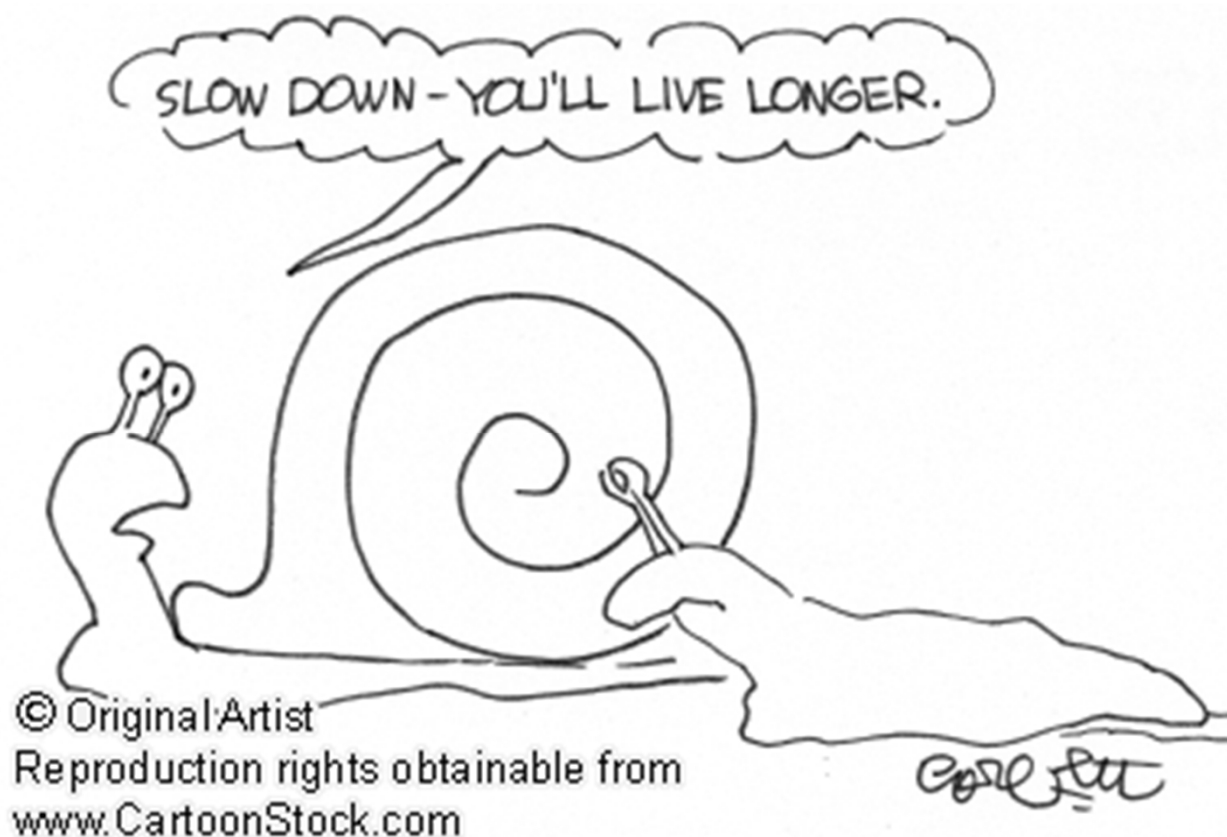
- Mostly by means of using an “event” such as
 - incomplete referral
 - no referral
 - not loading protocol
- Can then use Events by date range report
- A List view for Missed ID card will pick up any patient not given educational leaflets and alert card

Summary and Acknowledgements

- NPSA safety alert gives us a framework to improve patient anticoagulant care and raise standards in the Anticoagulant Clinic
- Reports are available from DAWN AC to enable the gathering of audit data to achieve this
- Annual review of each patient is easily prompted by the use of a list view and bulk letter template

Thanks to Brenda, Louise, Tracy and George for making this possible.....

**...and making our busy life a little bit
easier!!!!!!!!!!!!**



Thank you