The UK National Haemophilia Database: a thumbnail sketch!

Prof Charles RM Hay
The University of Manchester
And the UK NHD.



NHD: Administrative Inter-Relationships and Funding.

The UK National Haemophilia Database.

- Established in Oxford in 1968 at the request of the Dept. of Health.
 - Moved to Manchester 2002.
- All Haemophilia Centres in the UK are required (and recently contracted) to report to NHD on all patients with bleeding disorders.
- Data collection supported by a network of data managers and haemophilia specialist nurses.
- Named Database.
 - Patient permission.
 - DPA compliant.

National Haemophilia Database

<u>Accountable:</u>

=

Data Management WP.

UKHCDO.

UKHCDO Ltd Board.

Commissioners

Haemophilia centres

Caldicott Guardian.

Information Commissioner.

<u>Support:</u>-

Staff.

MDSAS.

City View House

<u>Outsourced</u> <u>support</u>

Peninsula (personnel)

Porters (accountancy and payroll)

Staff Insurers

UKHCDO Board.

Centres

<u>Service: -</u>

Data for: -Commissioners

DoH.

UKHCDO WPs

Research

Haem. Soc.

WFH

Industry

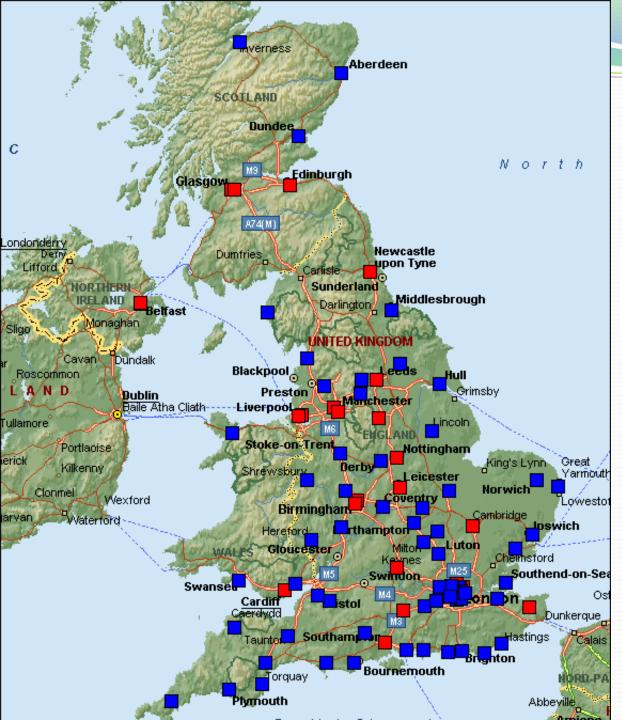
(EMEA etc)

Funding of the Database

- Commissioners.
 - Annual SLA with NHS England, DH Scotland and the Welsh Office.
 - N. Ireland are non-participants.
- DoH and other Govt. Projects.
 - National Procurement and contract monitoring.
 - HCV Lookback etc.
 - The Penrose Inquiry.
- Industry projects and unrestricted grants.
 - Inhibitor surveillance.
 - Data to support regulatory applications.
 - Novo Post-marketing Study.
 - Others ongoing.
- Grants from other grant giving bodies



NHD: IT Structure and Strategy.



UK Network: All Haemophilia Centres in the UK networked to the NHD.

- Haemophilia Centre
- Comprehensive Care Centre

25,000 + bleeders Haemophilia A 6500 Haemophilia B 1200 25000 bleeders.



National UK Haemophilia IT Systems

A fully integrated software system



HCIS

Patient Home Treatment System

Haemophilia Clinical Information System

DATA FLOW





UK Haemophilia Information Service

National Haemophilia Database





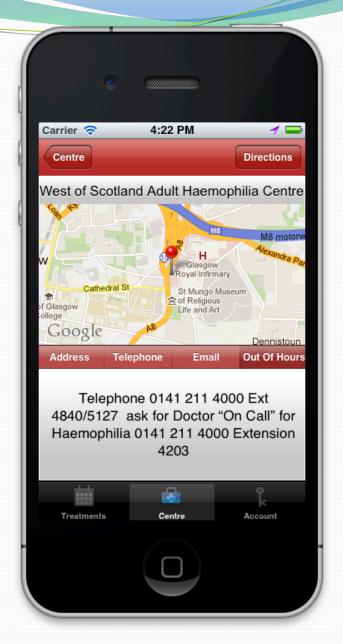
- Patient-reported home-treatment system.
- Android and I-phone apps and PC and paper.
 - Used for any bleeder on home therapy.
 - Mainly haemophilia A and B but also VWD, factor XIII etc.
 - Report all treatments: -
 - Dose/brand/batch.
 - Reason for treatment (prophylaxis/bleed/follow up/ITI etc)
 - Bleed details
 - Cause, position/type, dose interval, pain score, effect on normal activity.
- System strongly endorsed by the Commissioners.
 - Who wish all home-therapy pts to use the system.

Haemtrack Developments: -

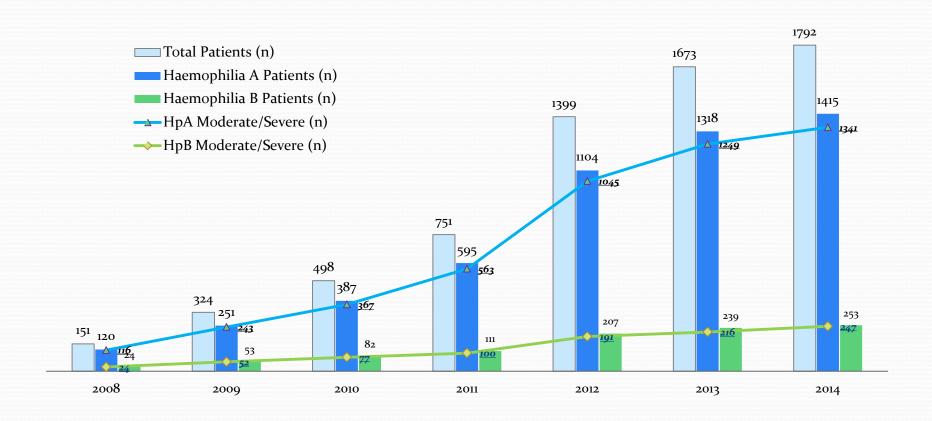
- Bar-code reading
- Stock-control.
- Linked with home– delivery provider
- Video-consultation.
- QOL and other research instruments



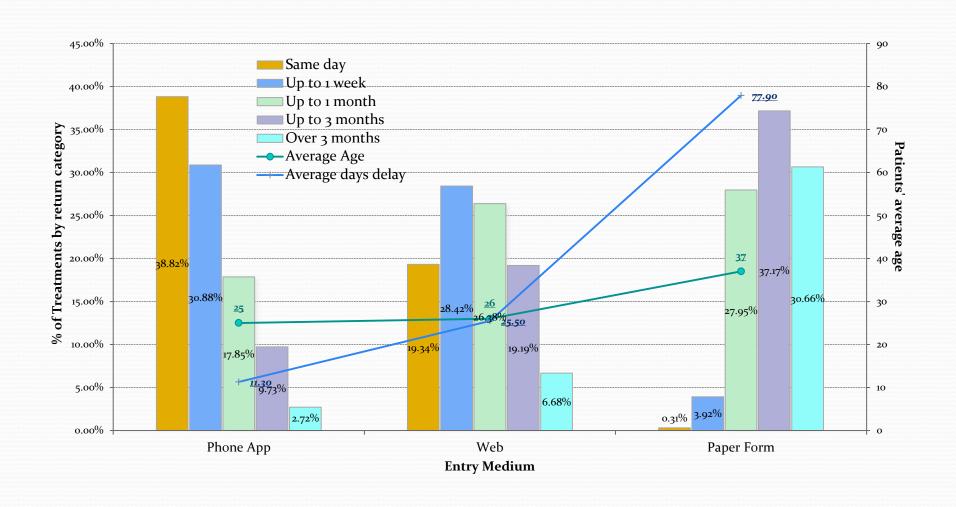




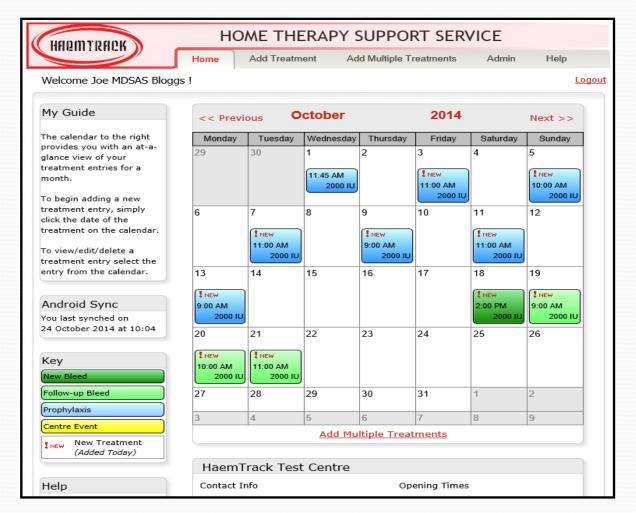
Number and Diagnosis of Pts using Haemtrack 2008-14



Haemtrack Reporting Delay by Reporting Medium 2014



Haemtrack Diary View







NHD: What Data do we collect?

Cradle to the Grave Data Collection: Severe Haemophilia A.

- All patients: -
 - All personal identifiers, DoB,
 - Diagnosis and genotype.
 - Bodyweight, F. History, and ethnicity.
 - Individual treatment statistics. (Quarterly).
 - Haemtrack treatment/bleed-level data as it comes in.
 - Adverse events and morbidity.
 - Outcome.
 - Mortality Data.
- Prospective inhibitor risk-factor data from birth to death
- Full list on WWW.ukhcdo.org



Centrally Reported Outcome Measures:

Current: -

- Annualised bleed rate (Haemtrack).
- Annualised joint score.
- Factor consumption and regimen used Treatment-level data through Haemtrack.
- Pharmaco-vigilance
 - Inhibitors/ thrombosis/reactions etc.
- Death (age/cause)

Future: -

- QOL measures.
- Loss of time from school/work
- PK



Adverse Events Reported:

- Factor VIII Inhibitors
- Poor Efficacy event.
- Other possible adverse or unusual event.
- Allergic or other acute events.
- Transfusion transmitted infection.
- Thrombosis
- Malignancy
- Intracranial haemorrhage
- Death
- Events are reported electronically direct to NHD as they occur and shared with EUHASS.

UKHCDO Inhibitor Dataset

We are attempting to collect this information on all patients with severe Haemophilia A, so that we have the denominator for these events.

Definitions: -

Severe <0.01 IU PTP >50 ED

Surgery/peak Rx Moments:

Units used.

Details of event.

Continuous infusion / Bolus

Data collected quarterly: -

Date of any brand change. Individual factor usage IU/kg. EDs

And for inhibitor Pts.

Titre. Diagnostic and peak.

Method.

EDs

ITI data/outcome

New inhibitors are reported as they arise.

Full list on <u>WWW.UKHCDO.org</u>



We are trying to address the generic questions.

- Natural History of Haemophilia:
 - Incidence, life expectancy and causes of death.
 - Treatment statistics and trends for healthcare planning.
 - Outcome and treatment-level data to inform future treatment and treatment trends.
- Pharmacovigilance:
 - Is the treatment safe?
 - What and how frequent are side-effects
- What are the host and environmental risk-factors for inhibitors.

Data Quality!



Haemtrack Data Quality Strategy:-

- Patient education:-
 - Leaflet and training from centre.
 - Standardisation of definitions.
 - Regular review of data in clinic with pt. and by phone/e-mail.
 - Sanctions for non-compliance.
- Centre Education;
 - Leaflet/training sessions/ publications/reports.
 - Optimal use of system.
 - Data validated at centre level before central upload.
- Central data reconciliation.
 - With centre product issues.
 - Feedback errors to centres



Data Quality

- Regular HCIS training (3-4 times a Year)
 - Open to <u>ANYONE</u>.
- Educational leaflets on Haemtrack for Pts and Centres.
- Data cross-checks and constant data cleaning.
 - E.G. Cross check overall centre reported usage with sales and Pt reported usage with issues etc.
 - We attempt to triangulate the data.
- Automated data reconciliation.
- We intend to employ CRAs to do centre-level data monitoring

Database achievements:

- Influences treatment practice and health policy.
- National Procurement.
- Annual and quarterly reports.
- Regular publication in peer reviewed journals
- Collaboration with CRN.
- Collaboration with Industry/Regulators: -
 - Supportive data for regulators e.g:-
 - Benefix <6 yrs data. Benefix once weekly prophylaxis
 - ReFacto-AF PUP study (>100 UK Pups).
 - Novo post –marketing study for EMA (270 ug/Kg dose)
 - Market modelling data: Sobi, Bayer.

The Pros and Cons of post-licensure Database Data for Industry and Regulators:

Clinical Trial:

- GCP/FDA Standard.
- Good quality data.
- Recruitment difficult.
- Selected patients,
- Small sample size.
- Short follow-up
- Very expensive to conduct.
- Analysed by industry.
- Potential industry bias.

National Database:

- Not GCP/FDA standard
- Lower quality data.
- Recruitment very easy.
- Unselected pts.
- Large sample size.
- Long follow up
- Relatively inexpensive.
- Independently collected and analysed.
- Real world data.

Thank you for your attention.

NHD Inter-Relationships

