

Brigham and Women's Hospital Anticoagulation Service

How to Run an Anticoagulation Service

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Essential Components of Centralized Anticoagulation Service

- Developing a Mission Statement
- Recruiting qualified staff
- Obtaining patient referrals
- Instituting consistent, evidence-based policies and procedures



(Crit Pathways Cardiol 2003; 2:41-45.)

Our Mission

Maximize effectiveness and safety of anticoagulation management by providing:

1. Careful monitoring and dosing of injectable and oral anticoagulants among hospitalized patients and outpatients
2. Facilitating and coordinating anticoagulation care
3. Transitioning (“bridging”) anticoagulation management at the time of discharge
4. Educating patients, families, and professionals
5. Continuous quality improvement
6. Clinical research



(Crit Pathways Cardiol 2003; 2:41-45.) ³

BWH Anticoagulation Service

Our multidisciplinary team is comprised of:

- Physician Assistants
- Pharmacists
- Nurses
- Medical Director



Anticoagulation Patient Referrals

- Inpatient postoperative cardiac surgery patients, especially prosthetic heart valves.
- Inpatients with atrial fibrillation or DVT/ PE.
- Outpatient physician office referrals for the treatment of AF or DVT/PE.

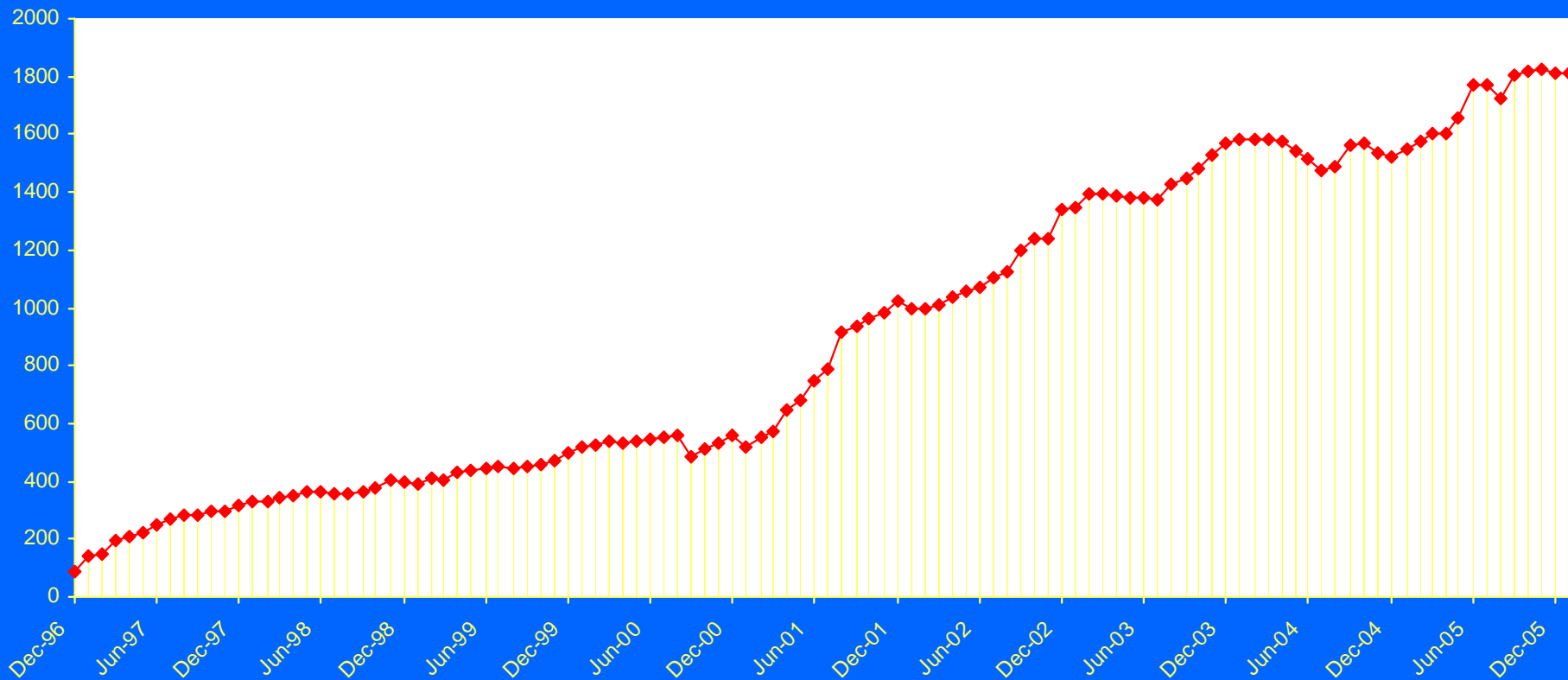


History of the BWH Anticoagulation Service

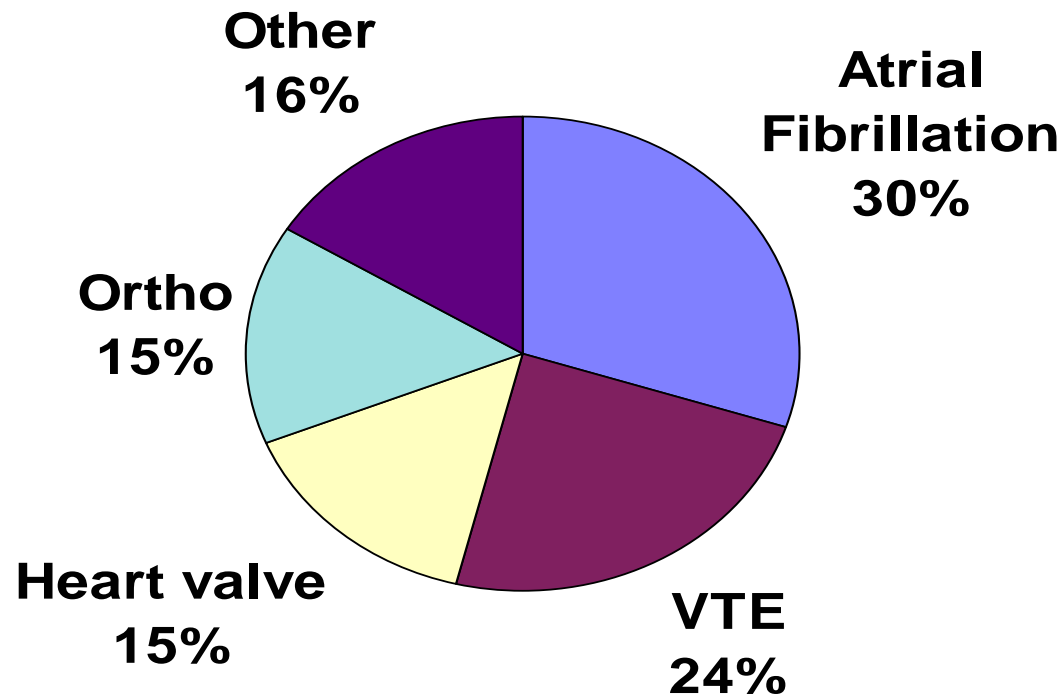
- At its inception in December 1996, there were 72 outpatients managed by one RN.
- At present, the Service manages more than 1800 outpatients with four clinical FTEs.
- 24/7/365 coverage
- Coverage in the areas of Cardiac Surgery, Cardiology, Vascular Surgery, Thoracic Surgery, Orthopedics, Neurology, Neurosurgery, and the BWH Primary Care Practices.



Brigham and Women's Anticoagulation Service Total Patient Activity December 1996 – January 2006



BWH Anticoagulation Service
Patient Distribution By Diagnosis:
2000-2006



A Centralized Anticoagulation Service Undertakes Various Levels of Anticoagulation Management

- Evaluation for outpatient treatment versus hospitalization
- Appropriate use of LMWH for certain conditions
- Train patients for home monitoring
- Provide counseling and education to patients regarding anticoagulation
- Educate staff
- Conduct quality assessment



Performance Measures

1. Patient safety
2. Patient satisfaction
3. Decreased length of stay
4. Maintaining target range INRs
(tracked by Standing Stone)
5. Clinical Research



Quality Outcomes / Performance Metrics

Patient Safety / Quality of Care:

BWH Anticoagulation Service Complications

January 2000 to January 2005

0.32 major bleeding events per 100 patient years

0.43 major clotting events per 100 patient years

[among lowest reported results in literature]

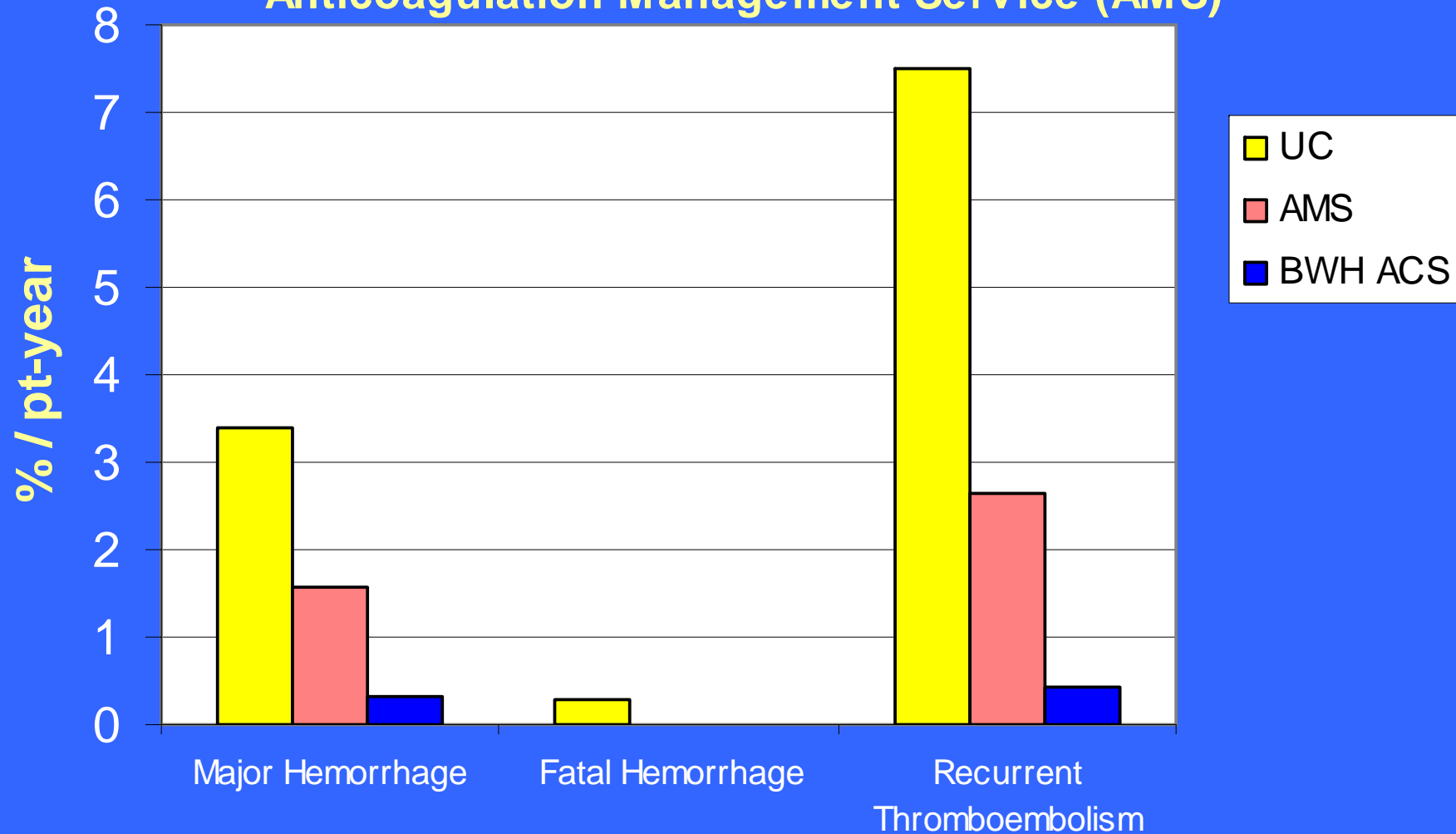
Decrease LOS / Decrease hospital costs:

A “bridging” study performed by Fanikos et al. reported a total cost savings of \$170,912 for 29 patients who underwent cardiac surgery during the period of June 1999 and November 2001. Using the LMWH strategy, 112 inpatient days were eliminated.



Fanikos et al., Am J Cardiol 2004; 93:247-250.

Frequency of Major Hemorrhage/Thromboembolism in Patients Managed Under Usual Care (UC) vs. Anticoagulation Management Service (AMS)



Ansell et al. *Chest* 2004; 126:204s-225s.
Fanikos et al., *Am J Cardiol* 2004; 93:247-250.

Patient Safety and Satisfaction

- Patient Enrollment Packet
- Patient Education Packet
- Monthly M+M



Anticoagulation Service Outpatient Clinic

To improve patient safety, while generating revenue, the BWH Anticoagulation Service has implemented outpatient office visits.

This time is used for:

- warfarin education

- LMWH teaching

- Bridging instructions

- Home testing machine information and integration



Guidelines for Starting an Anticoagulation Service

1. 1 health care provider per 300 patients is the national standard
2. Tracking Software
3. Referral Form



RESPONSIBILITIES OF SERVICE

- 1) Confirm indication for anticoagulation.
- 2) Determine Target INR and duration of therapy.
- 3) Initiate treatment for acute DVT.
- 4) Daily rounds with Cardiac Surgery.
- 5) Manage all inpatient and outpatient
Orthopedic Surgery Service anticoagulation



RESPONSIBILITIES OF SERVICE

- 6) Teach patient, family the rationale for anti-coagulation as well as risks.
- 7) Schedule testing of INR: date, location, transmittal of results.
- 8) Teach LMWH injections.
- 9) Phone or email each patient after every lab result.



Conclusions

1. Patient education and interdisciplinary communication are keys to success
2. Our service provides a seamless transition from inpatient to home, rehab hospital, or SNF
3. Our expanded roles and multidisciplinary approach allow us to function as a hospital-wide resource for patients and families as well as nursing and House Staff.
4. Improved quality of care by decreasing bleeding and clotting complications, facilitated by dedicated staff and tracking software surveillance.

