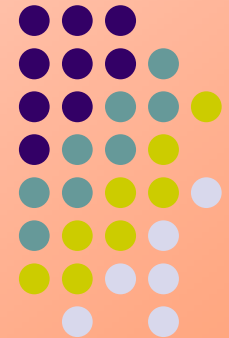


Outcome Evaluation of Warfarin Clinic : Safe and Feasible Care Delivery Model in Primary Care Setting

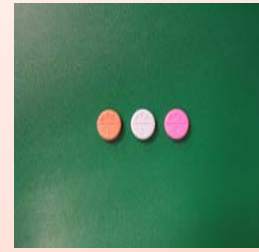
HA Convention 2008




Chan Lai Hung, Jane
APN (Ward & Unit Management)
GOPCs, KCC



Background



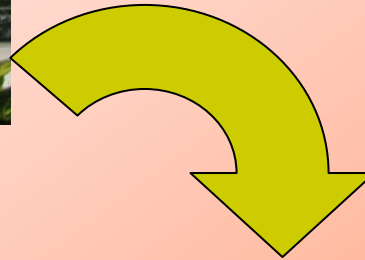
- Warfarin : common oral anticoagulant
- Treatment of thrombosis and prevention of stroke in atrial fibrillation.
- Local Studies shown risk of intracranial haemorrhage among Chinese population.
- Warfarin cases usually cared by tertiary care setting.
  **accumulated many cases in SOPC**
- **In UK & USA**, Primary Healthcare Professionals take care of Warfarin patients



Ambulatory Care Centre
Queen Elizabeth Hospital



- **Handover of GOPCs to HA since 2003, it facilitated the integration between primary, secondary and tertiary care.**



Yau Ma Tei JCC



“Establishment of Warfarin Clinic in GOPC” Working Group

- Multidisciplinary approach

Cardiologist, FM Physician, Pharmacist, Cardiac Nurse Specialist, APN in GOPC

- Primary care setting
- Nurse-led based
- Protocol driven
- Share-care model



Logistics of Referring System

For dental procedure or warfarin overdose Mx

Cardiac Nurse (Cardiac Day Centre)

Nurses in SOPC screening suitable cases

Consult Physicians for advice

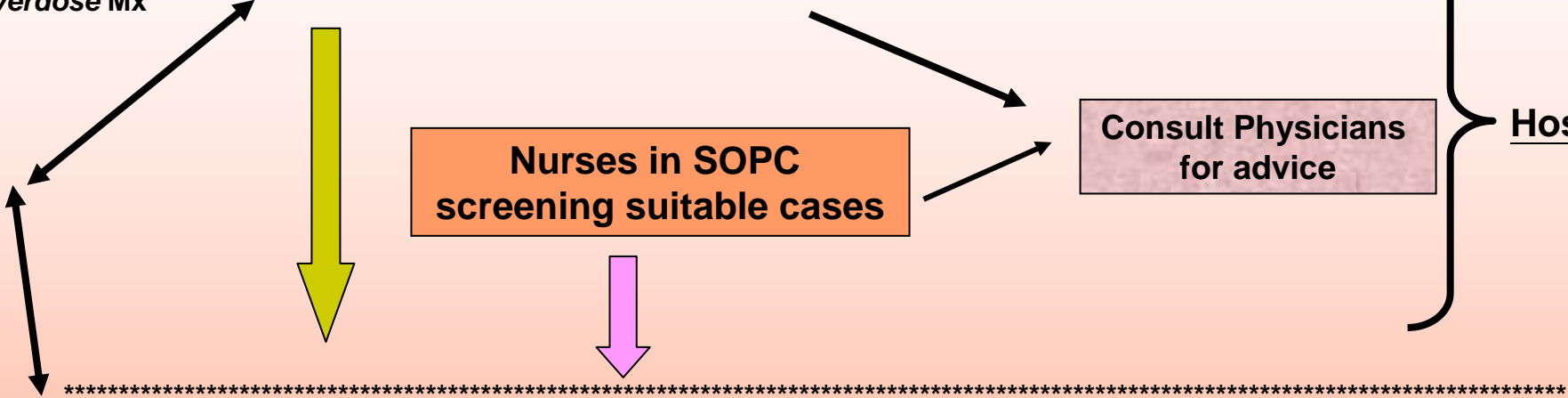
Hospital

Nurse Clinic (GOPC) for INR monitoring & adjustment of warfarin dosage

GOPC

Consult FM Physician for advice PRN

Refer Pharmacist PRN



Algorithm of Warfarin Dosage for INR Maintenance (Target INR of 2.0-3.0) :

Specific for Hong Kong Chinese Population

Algorithm of Warfarin Dosage for INR Maintenance (Target INR of 2.0-3.0)

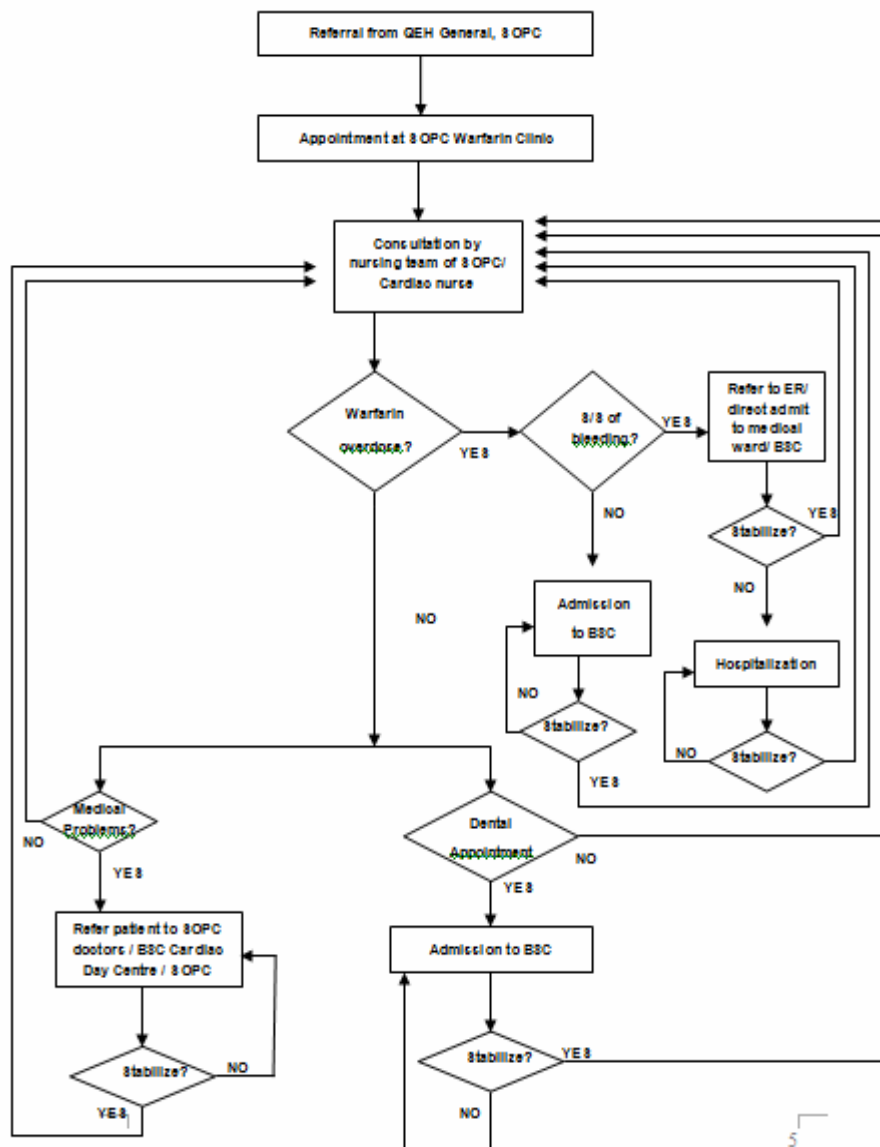
		Initial warfarin dosage													
		0.5	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	6.5	7
Baseline INR Result	<2	1.0	1.5	2.0	2.5	2.5/ 3.0	3.0/ 3.5	3.5/ 4.0	4.0/ 4.5	4.5/ 5.0	5.0/ 6.0	6.0/ 6.5	6.5/ 7.0	7.0/ 8.0	
	2	0.5	1.0	1.5	2.0	2.5/ 3.0	3.0/ 3.5	3.5/ 4.0	4.0/ 4.5	4.5/ 5.0	5.0/ 5.5	5.5/ 6.0	6.0/ 6.5	6.5/ 7.0	7.0/ 8.0
	2.1	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	5.0	5.5	6.0	6.5	7.0	7.5
	2.2	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	5.0	5.5	6.0	6.5	7.0	7.5
	2.3	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	5.0	5.5	6.0	6.5	7.0	7.5
	2.4	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	5.0	5.5	6.0	6.5	7.0	7.5
	2.5	0.5	1.0	1.5	2	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7
	2.6	0.5	1.0	1.5	2	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7
	2.7	0.5	1.0	1.5	2	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7
	2.8	0.5	1.0	1.5	2	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7
	2.9	0.5	1.0	1.5	2	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7
	≥ 3.0	Withhold warfarin for 2 days													

Adjusted warfarin dosage



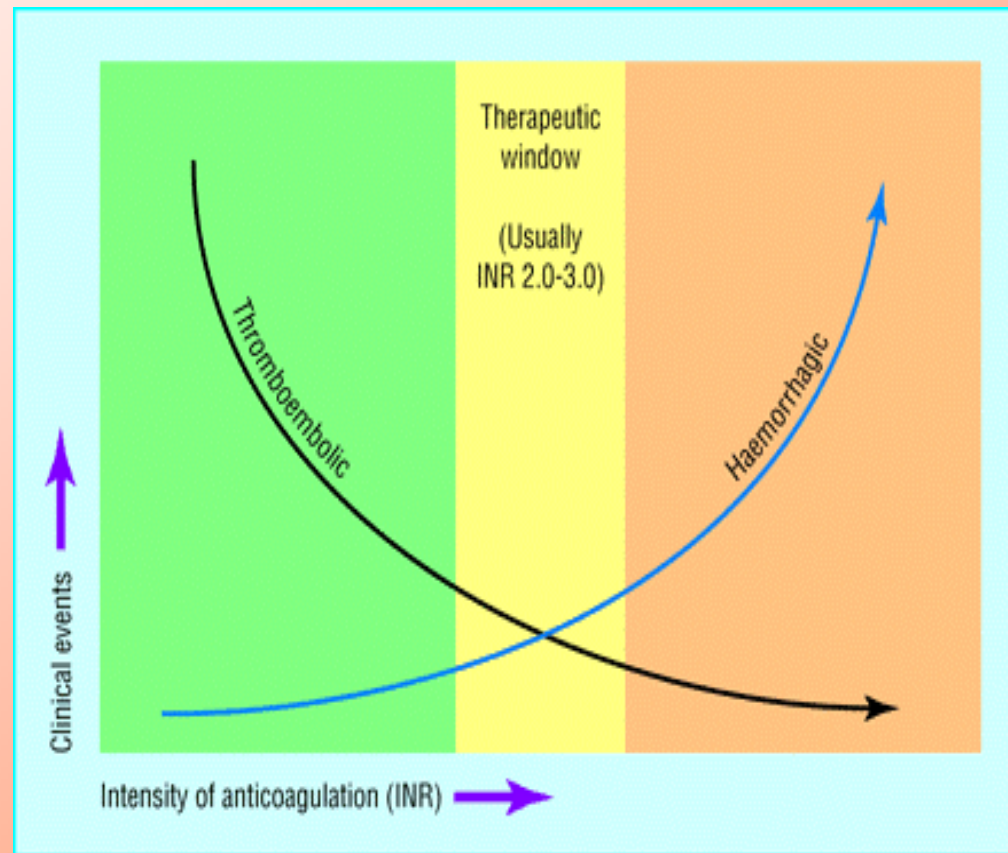
Safety net of refer back to hospital

A schematic representation of the Warfarin Nurse-led Clinic at SOPC



Monitor & Dosage Adjustment

- Follow up 12 - 24 wks same as medical consultation in SOPC
- Blood taking for INR : between two visits and one day before follow-up.
- Monitor for drug interaction, food interaction, and signs of bleeding.
- Send to PI QEH
- Phone follow-up PRN



Pilot Study

- From September 2006 to February 2008
- Aims:-
 1. To evaluate the safety and efficacy.
 2. To examine satisfaction of patient towards the service.

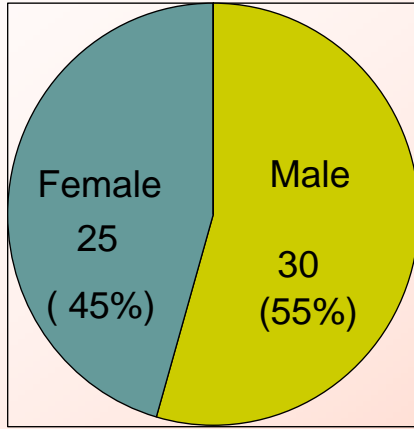


Methodology

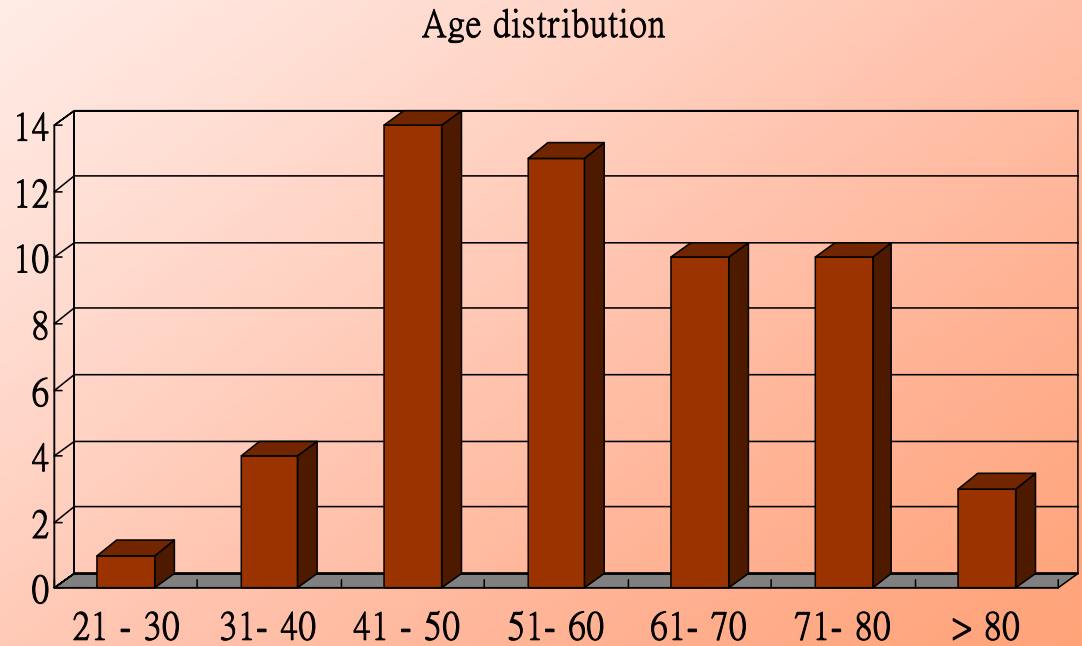
- Transfer stable “warfarin alone” cases to YMTJC GOPC
- Total Patients : 55
- Prospective analysis of the record and INR result of warfarin cases in GOPC.
- INR result :390 readings
- Patient Satisfaction survey conducted



Patient Demographic Data



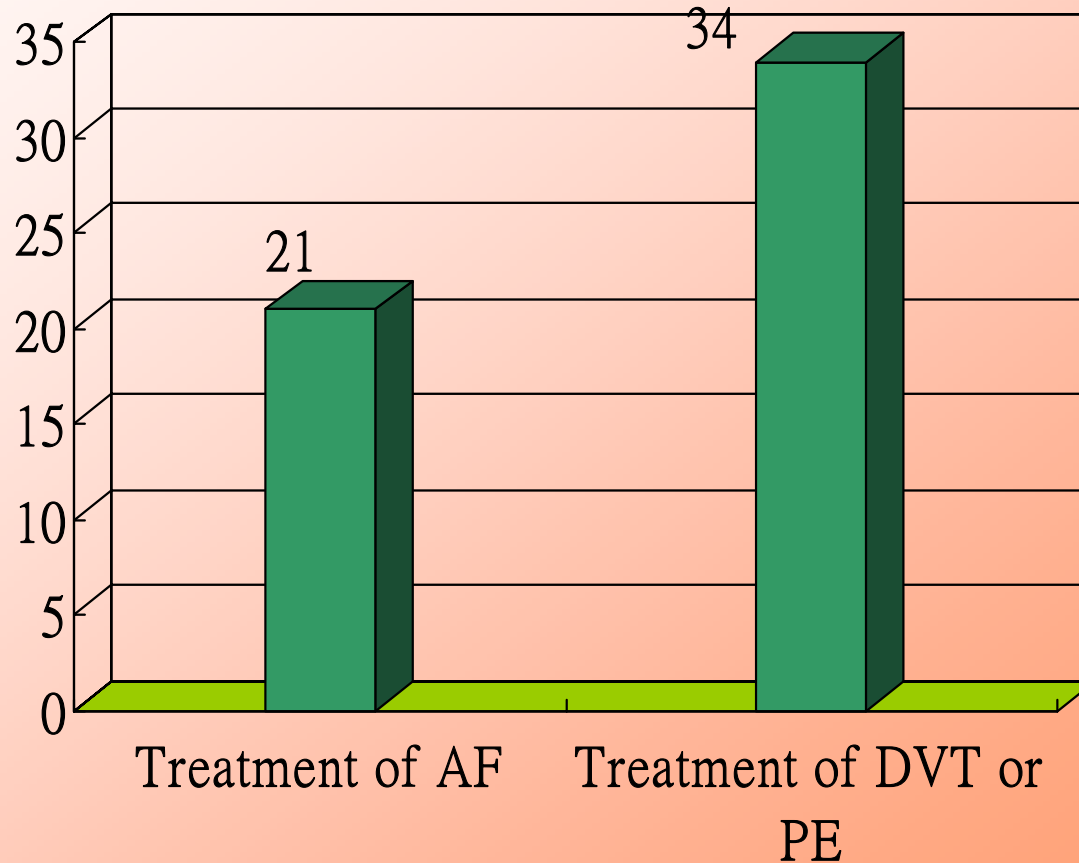
Total no. of patients: 55



Mean Age: 55.9



Indications for life-long warfarin therapy



Key Performance Indicators

Audit Parameter for Anti-Coagulation Clinic in United Kingdom

1. The proportion of tests performed that are within the therapeutic range.
2. Point prevalence : the proportion of patient with therapeutic INRs

Reference: Fitzmaurice, D.A. & Murray, E.T. (2005)

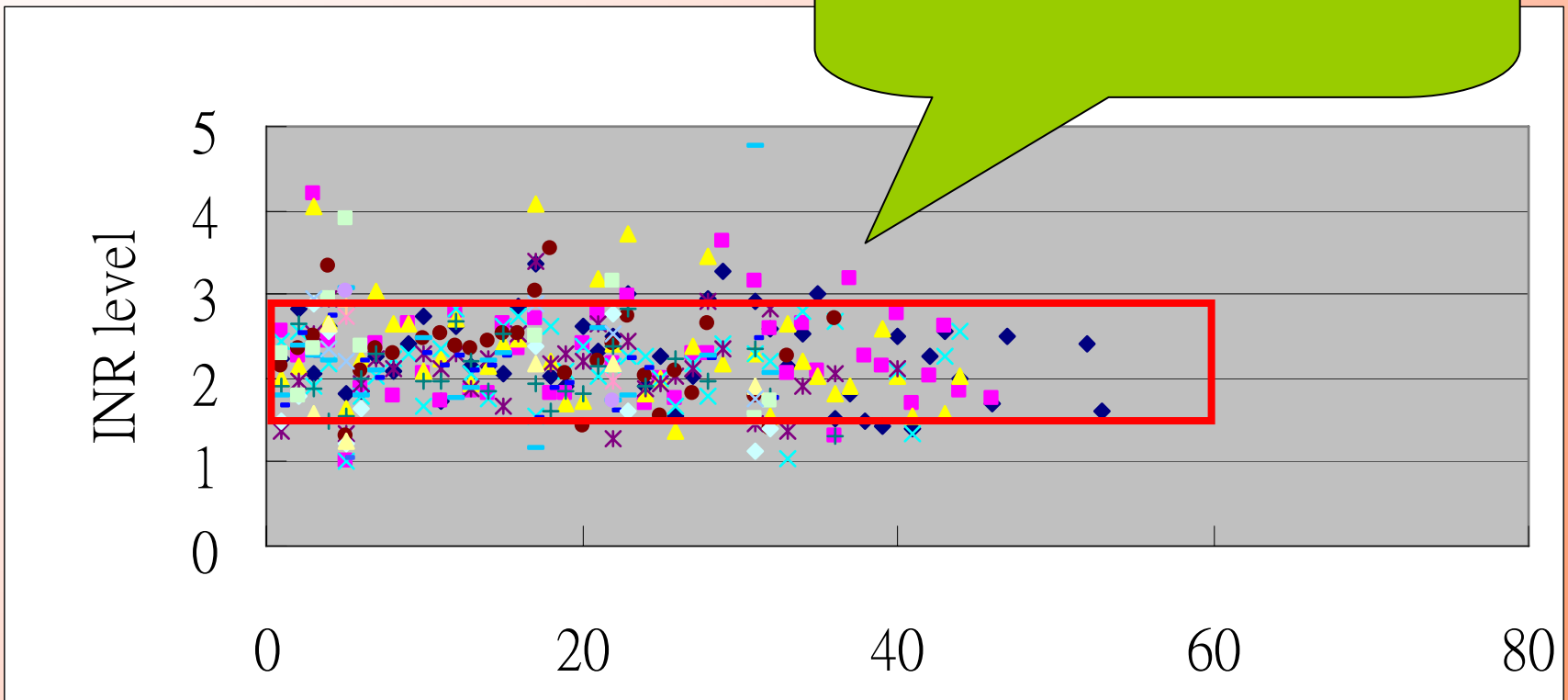
Oral Anticoagulation Management and Stroke Prevention : The Primary Care Perspective 2nd Ed

Newmarket: Hayward Medical Communications



INR Results

89.7% of INR results
Within the therapeutic range



INR Results

- 77.4% (302/390) within the 0.5 INR units of target
- 89.9% (350/390) within the 0.75 INR units of target
- Overall result: “above the standards”
- Standards for audit (British Society of Haematology Guidelines)
- **Achievement of target INR:**
- **50% within 0.5 INR units**
- **80% within 0.75 INR units**



Results

- 42 patients, 78.7% (42/54) always within the therapeutic range (± 0.75 INR) during 18 months FU (mean: 10.3 \pm 6.1 months) in YMT JC GOPC.
- No episode of bleeding
- No thromboembolism
- No warfarin-related hospitalization
- 1 patient referred back to SOPC, QEH because of complicated surgical problem



Patient Satisfaction Survey

- Survey conducted from Oct 2007 to Feb 2008
- 34 patients response during follow-up appointment (100 % response rate)
- Self-administrated 22-item questionnaire concerning
 1. Registration
 2. Clinic environment
 3. Professional staff's attitude
 4. Knowledge about warfarin



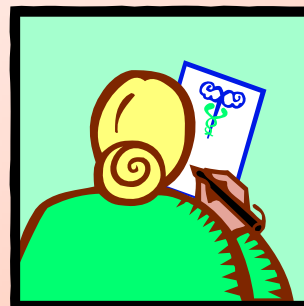
Result

	** Overall score
1. Registration process	4.57
2. Clinic environment	4.18
3. Professional staff's attitudes	4.63
4. Knowledge about Warfarin	4.31

** The Highest scores is 5.



Written feedback



- “非常滿意。”
- “樣樣好，比起專科門診還好。”
- “對服用薄血藥的長期病患者來說是最好的待遇，謝謝。”
- “比伊利沙伯醫院時間快，姑娘很有愛心...”



In Summary,

- Safe and feasible in HK Primary Care Setting
- The Concept of Nurse Clinic is acceptable by patients.
- “Right Care” provided in an appropriate level of care.



Estimated Cost Saving

- Nurse clinic in primary care setting

- GOPC cost for each case : \$ 215

(Source: HA, Finance Department)

- SOPC cost for each case : \$ 700

- (Source: HA, Finance Department)

- Average each patient follow - up 4 visits per year

- Cost reduced for 1 patient FU in GOPC each year : \$ 1,940

- “ for 10 patients “ : \$ 19,400

- “ for 100 patients “ : \$ 194,000

- “ for 1000 patients “ : \$ 1,940,000

\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$



Future Development

- Cater more cases
- Heart valve replacement with warfarin therapy.
- Hypertension cases with warfarin therapy.



Portable INR Monitoring in GOPC

- Implementation of POCT.
- More convenient in community setting.





- “ GOPCs have a key role, and we are looking to further reform and strengthen our primary care services so that they are more attractive to patients. This includes introducing the phone appointment system, reducing the need to return so often for routine prescriptions, and encouraging stable patients to be cared in GOPCs rather than SOPCs.”

—
CE's Column
HA Links Dec 2006



Acknowledgement

- Dr. Michael KY Lee
- Dr. C T Hung
- Ms. Alice Tso
- Dr. David Chao
- Dr. K T Chan
- Dr. Victor Choi
- Dr. King Chan
- Dr. C W Cheng
- Dr. Sandy Chan
- Ms. Amy Tsoi
- Dr. Wilson Leung
- Ms. Violet Lau
- Ms. Eugenia Cheng



With Communication & Collaboration,
Creation occurs



Thank You !

