Time costs of waiting, doctor-shopping and private-public sector imbalance: microdata evidence from Hong Kong

Dr Gabriel M Leung
University of Hong Kong School of Public Health
OVERVIEW OF HONG KONG’S HEALTH SYSTEM

**System**
- Public health
- Personal health care

**Funding sources**
- Public (Health, Welfare and Food Bureau)
- Private
  - Employers
  - Individuals

**Purchasers**
- Public
- Private insurers / HMOs

**Providers**
- Department of Health and Centre for Health Protection
  - Disease prevention & control (communicable and non-communicable diseases)
  - Elderly health
  - Health education
  - HIV/AIDS service
  - Maternal and child health
  - Port health
  - Student health
  - Tobacco control
  - Tuberculosis service
- Hospital Authority
  - Hospitals
  - Clinics
  - Doctors
  - (predominantly western allopathic medicine)

**Consumers**
- General population
- Universal coverage
- Individuals from middle and upper socioeconomic strata (except for Chinese medicine use)

**Market share**
- Inpatient (bed-days): 90-95%
- Outpatient (no. of episodes): 30%
- : 5-10%
- : 70%

HMO = health maintenance organisation

MOTIVATION

• Mixed medical economy
• Publicly financed outpatient system provides nominal universal access (with minimal point-of-care co-pays)
• Incomplete coverage ie capacity of ambulatory services is restricted and thus rationed mostly through long waiting time and lesser amenities
• Time costs of waiting is privately borne by patients and not reflected in standard financial accounting
  – which may distort the true cost of care
• Initially, patients are attracted by the comparable (to private care) quality but low out-of-pocket charges of the public clinics
• Subsequently, they cannot “afford” the time cost of waiting and thus “doctor-shop” in the private sector (where there are virtually on-demand logistics)
OBJECTIVE

To examine whether:
1) self-reported willingness to pay (WTP) is a largely unrecognised cost in public sector health service provision;
2) such WTP is associated with revealed preferences as reflected through doctor-shopping behaviour
DATA SOURCE

• Case-control study of consecutive new SOPD appointments at 4 public hospitals in 2000/01
• 6,495 individuals aged 16 years or above
• Data collected from standardised telephone interviews
WAITING TIME AND WTP ASSESSMENT

• “What is the maximum reasonable waiting time for your particular episode?” \textit{(expected waiting time)}

• “What is the maximum amount you are willing to pay to shorten the waiting time for your episode by 2 weeks?”
ACTUAL VS EXPECTED WAITING TIME

Number of months

Proportion of respondents (%)
WTP DISTRIBUTION

Median WTP to shorten wait by 2 weeks = $100
## WTP & DOCTOR-SHOPPING

<table>
<thead>
<tr>
<th>WTP values (HK$)</th>
<th>Overall</th>
<th>With insurance</th>
<th>No insurance</th>
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<tbody>
<tr>
<td>1&lt;sup&gt;st&lt;/sup&gt; quartile (0)</td>
<td>1</td>
<td>1</td>
<td>1</td>
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<tr>
<td>2&lt;sup&gt;nd&lt;/sup&gt; quartile (4-100)</td>
<td>0.88 (0.63, 1.23)</td>
<td>0.68 (0.41, 1.15)</td>
<td>1.05 (0.66, 1.67)</td>
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<tr>
<td>3&lt;sup&gt;rd&lt;/sup&gt; quartile (120-150)</td>
<td>1.19 (0.57, 2.48)</td>
<td>0.88 (0.27, 2.89)</td>
<td>1.52 (0.58, 3.93)</td>
</tr>
<tr>
<td>4&lt;sup&gt;th&lt;/sup&gt; quartile (≥175)</td>
<td>1.52 (1.05, 2.20)</td>
<td>1.27 (0.73, 2.19)</td>
<td>1.78 (1.04, 3.03)</td>
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*Odds ratio for doctor-shopping (95% confidence interval)*
### ACTUAL DOCTOR-SHOPPING EXPENDITURE & SELF-REPORTED WTP

<table>
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<tr>
<th>Actual expenditure</th>
<th>Odds ratio for higher WTP (95% confidence interval)</th>
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<tbody>
<tr>
<td>1(^{st}) tertile (&lt;HK$204)</td>
<td>1</td>
</tr>
<tr>
<td>2(^{nd}) tertile (HK$204-700)</td>
<td>1.10 (0.60, 2.02)</td>
</tr>
<tr>
<td>3(^{rd}) tertile (&gt;HK$700)</td>
<td>1.71 (0.95, 3.09)</td>
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Median expenditure = $300
SUMMARY OF FINDINGS

• Unaccounted time cost of waiting is 13% of the overall true economic cost of care for an SOPD visit \[\frac{100}{661+100}\]

• Patients who were willing to pay more were also more likely to doctor-shop

• The amount spent in private care through doctor-shopping correlates positively with self-reported WTP
POLICY IMPLICATIONS

• We know from a previous study that doctor-shopping is the single most important factor responsible for patient default in the HA
  – this is a major source of inefficiency and wasted resources

• On the other hand, many private clinics have spare capacity
  – public-private imbalance due to the large out-of-pocket price gap
  – in fact, the private sector outpatient market share has shrunk from 85% in 1997 to 70% in 2002
• New proposal based on our findings:
  – Some specialist outpatient consultations could be outsourced (with additional patient contributions equivalent to at least $100 – the median WTP value) to private practitioners
  – This would achieve substantial economic efficiency gains on the societal level (ie for everybody)
  – It can shorten waiting time, reduce time costs of waiting, minimise default appointments at HA clinics, and increase private sector utilisation
  – Private sector is probably more efficient at providing service (average cost of SOPD visit = $661 vs median private fee = $500)
• Potential shortcomings:-
  – “Crowd-out” effect where a large number of patients who currently choose private care switch to public clinics knowing that they would likely be offered a subsidised private appointment
  – Strategies to counter such perverse incentives may include:-
    • a minimum waiting time on the HA waiting list before offering transfer to private clinics
    • discouraging patients to return to the public sector who have previously opted for transfer to private system through further incentives or regulation
    • giving preference to those who have not opted for the scheme previously

• ALL POTENTIAL STRATEGIES MUST BE EVALUATED IN PROPERLY DESIGNED, VALID AND PEER-REVIEWED STUDIES BEFORE AND AFTER IMPLEMENTATION
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