Cancer Services in Public Hospitals

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Hong Kong Hospital Authority

Symposium on: "Cancer Control: Challenges & Opportunities"
7 December 2013
Overview

- Background
- Challenges in Cancer Care
- Service organization and provision
- Way forward
HK Healthcare System

No one will be deprived of adequate medical care because of a lack of means.

HK’s public healthcare services are heavily subsidized

→ Fixed subsidy at 84% to 98%*

- Area: 1040 Sq. km
- Population: 7.18 M
- Per capita GDP ~ US$36,500

*As at 2008/09
HK Healthcare System

**Public**
- Highly subsidized by government
- 2.4% GDP
- 90% inpatients
- 30% outpatients
- Public Health

**Private**
- Self-financed by patients
- 2.9% GDP
- 10% inpatients
- 70% outpatients

Source:
1. GDP: 2009
2. Inpatient (secondary & tertiary care): “Public-private share by inpatient treated in 2009” from HA and Dept of Health
Established in 1990 under the Hospital Authority Ordinance

A statutory body tasked to manage all public hospitals and institutions

Government owned + charity + religious organizations

Accountable to Secretary of Health
HA’s Facilities and Services

- 42 public hospitals (7 clusters)
- ~27,000 beds
- 48 Specialist Outpatient Clinics
- 73 General Outpatient Clinics
- ~64,000 staff
- Budget: ~US$5.36 billion

- 1.47m IP/DP discharges
- 2.24m A&E attendances
- 6.73m Specialist Outpatient Clinic attendances
- 5.32m Primary care attendances
- 2.15m Allied Health attendances
Distribution of Public Hospitals and 6 Clinical Oncology Centres in HA

<table>
<thead>
<tr>
<th>Cluster</th>
<th>Oncology Centre</th>
</tr>
</thead>
<tbody>
<tr>
<td>HKE</td>
<td>PYNEH</td>
</tr>
<tr>
<td>HKW</td>
<td>QMH</td>
</tr>
<tr>
<td>KC</td>
<td>QEH</td>
</tr>
<tr>
<td>KE</td>
<td>QEH</td>
</tr>
<tr>
<td>KW</td>
<td>PMH &amp; QEH</td>
</tr>
<tr>
<td>NTE</td>
<td>PWH</td>
</tr>
<tr>
<td>NTW</td>
<td>TMH</td>
</tr>
</tbody>
</table>

Legend:
- 18 DCDs Boundary
- Cluster
  - Hong Kong East
  - Hong Kong West
  - Kowloon Central
  - Kowloon East
  - Kowloon West
  - New Territories East
  - New Territories West
Challenges in Cancer Care

- Increasing burden
- Increasing complexities & advances in treatment technology
- Multidisciplinary involvement in cancer management
- Manpower constraint in recent years
Rising trend in Colorectal, Breast and Prostate Cancers
Escalating Disease Burden

Prevalence Rate of Top 5 Rising Diseases

Annualized growth

- Ischaemic Heart Diseases: ↑3.7%
- Chronic Renal Failure: ↑6.2%
- Lower respiratory infection: ↑8.1%
- Malignant Neoplasms (cancer group): ↑11.0%
- Schizophrenia: ↑21.3%
Projections of All Cancers cases (aged 20+) by Sex

*Cancers in children and adolescents (<20 yrs) were excluded due to the rarity in cancer (<1%) and different classification scheme. Non-melanoma skin cancers were also excluded in making projection as most cases are easily treated and cured.
Patient’s journey cut across various specialties and disciplines

Technology and treatment advancements in all these areas

Higher community expectation

Technology Advances along Patient Journey

- Prevention
- Screening
- Symptomatic for consultation
- Investigation and Diagnosis
- Staging
- Treatment e.g. surgery, chemotherapy, radiotherapy
- Survivorship/ Palliative care
Increasing complexities & advances in treatment technology

**Increase in complexities in tumor diagnosis**
- Comprehensive information out of smaller and smaller biopsies
- Increase number of biopsies for a single diagnosis, e.g. prostate biopsy

**New technology in surgery**
- e.g. Minimally Invasive Surgery (MIS), robotic surgery, endoscopic submucosal dissection (ESD), Natural Orifice Translumeral Endoscopic Surgery (NOTES)

**Increasing complexity of chemotherapy**

<table>
<thead>
<tr>
<th>Attendance</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bolus Injection</td>
<td>11739</td>
<td>10954</td>
<td>8254</td>
<td>7263</td>
<td>6196</td>
</tr>
<tr>
<td>Short Infusion (&lt;3 hr)</td>
<td>24710</td>
<td>26371</td>
<td>32680</td>
<td>39032</td>
<td>40059 (↑ 62%)</td>
</tr>
<tr>
<td>Long Infusion (&gt;3hr)</td>
<td>7913</td>
<td>9197</td>
<td>11437</td>
<td>14489</td>
<td>16982 (↑ 115%)</td>
</tr>
</tbody>
</table>

Comparison of 2012 vs 2008
Increasing radiotherapy complexity

- Technological complexities
  - longer treatment / OT time
  - more need of staff for support
  - more training time
  - more expensive
  - Decision and treatment more complex
Complex Patient Journey

- Service used to be organized as specialty-based care
- Cancer care requires multidiscipline’s input
- Fragmented information sharing across specialties leading to duplication of work and lower efficiency and patients’ satisfaction
Manpower Shortage

Despite continuous growth in activities, number of HA doctors & nurses has only increased marginally.
Better manage growing demand

Increase Capacity on High Demand Life Threatening Diseases

“The focus is on serious conditions requiring multi-disciplinary and time critical care. Some examples are cancer, heart disease, renal failure and stroke. Other than capacity increase to improve patients’ access to time-critical care, these services will be improved with modern technology and drugs, and coordinated service models.”
HA is now reviewing the service and target to improve the capacity of endoscopy service in meeting the growing demand.
**Baseline services in supporting cancer service**

<table>
<thead>
<tr>
<th>Service type(s)</th>
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</thead>
<tbody>
<tr>
<td>Baseline services in supporting cancer service</td>
</tr>
<tr>
<td><strong>Histopathology</strong></td>
</tr>
<tr>
<td><strong>Cytology</strong></td>
</tr>
<tr>
<td><strong>Molecular testing</strong></td>
</tr>
</tbody>
</table>
Improve Access - Pathology Service

2009/10

- Expand the capacity of cytogenetic services for Leukaemia

2010/11

- Improve access to molecular diagnostic tests for cancer of lung, breast, colorectal and brain

2013/14

- Further improve access to cytogenetic tests for blood cancer and predictive molecular tests e.g. EGFR, Her2 and KRAS for solid tumors
Improve Access - Radiology

**2010/11**
- Install additional CT/MRI machines

**2011/12**
- Increase the capacity through extended hour

**2012/13**
- Increase capacity through public-private partnership (PPP)
- Improve access to PET scan
Radiology

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of CT machines</td>
<td>20</td>
<td>22</td>
<td>26 #</td>
<td>28 ^</td>
<td>29</td>
<td>30</td>
</tr>
<tr>
<td>Number of MRI machines</td>
<td>11</td>
<td>11</td>
<td>13 #</td>
<td>14</td>
<td>15</td>
<td>16</td>
</tr>
</tbody>
</table>

# Included 1 CT and 1 MRI for Civil Service Eligible Persons (CSEP) which were installed in QEH since 2010/11
^ Included 1 CT owned by Board of Governors of OLMH which was installed since 2011/12
## Radiology

- **Increased capacity through extended hours**

<table>
<thead>
<tr>
<th></th>
<th>2011/12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Additional patient attendances provided (CT &amp; MRI)</td>
<td>~4,000</td>
</tr>
</tbody>
</table>

- **Increased capacity through addition of CT / MRI machines**

<table>
<thead>
<tr>
<th></th>
<th>2012/13</th>
</tr>
</thead>
<tbody>
<tr>
<td>Additional patient attendances provided (CT &amp; MRI)</td>
<td>~39,800</td>
</tr>
</tbody>
</table>
Radiology PPP

Pilot Project on
Enhancing Radiological Investigation Services
Through Collaboration with the Private Sector
Project scope & Service providers

- Provides CT / MRI staging / re-staging exams to newly diagnosed, histologically proven HA cancer patients under full subsidy, initially:
  - Colorectal cancer
  - Breast cancer
  - Nasopharyngeal cancer
  - Lymphoma

- 5 private service providers, engaged through open tender, are currently taking part in the pilot project

- Examinations normally complete within 5 working days
• Implemented since May 2012

• Up to the end of September 2013, already benefitted more than 2,700 patient attendances with over 6,300 exams performed
Radiology

- Improve access to PET scan service
  - PET service was available to HA patients starting from 2003 in QEH
  - PET service was initiated in PYNEH in 2012
  - Both hospitals receive referrals from all HA clusters

- Selected indications under HA standard service since April 2012
  - Non-small cell lung cancer (NSCLC)
  - Hodgkin’s lymphoma (HL) or diffuse large B-cell lymphoma (DLBCL)
Improve Access - Surgery

2009/10

• Improve efficiency and outcome by developing robotic surgery for radical prostatectomy and rectal cancer surgery

2010/11

Gradual increase in capacity of cancer surgery through addition of Operating Theatre (OT) sessions and extended-hour services

2012/13

2013/14
Surgery

<table>
<thead>
<tr>
<th>Within 2010-2012</th>
<th>Number of operations per year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malignant neoplasm</td>
<td>~16,000</td>
</tr>
</tbody>
</table>

**No. of cancer surgery**

<table>
<thead>
<tr>
<th>Year</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>~16,000</td>
</tr>
<tr>
<td>2011</td>
<td>~16,500</td>
</tr>
<tr>
<td>2012</td>
<td>~17,000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Within 2010-2012</th>
<th>Number of robotic-assisted operations per year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radical prostatectomy</td>
<td>~180</td>
</tr>
<tr>
<td>Laparoscopic total mesorectal excision (TME) for rectal cancer</td>
<td>~90</td>
</tr>
</tbody>
</table>
Improve access – Radiotherapy (RT)

2009/10

- Install 2 new Linear accelerators at PMH and PWH

2010/11

- Install the 5th linear accelerator in PWH
- Expand RT capacity in KWC

2013/14

- Recruit additional radiation therapists to support high tech. radiotherapy
Radiotherapy

Addition of Linear Accelerators

No. of LinAc in HA

<table>
<thead>
<tr>
<th>Year</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1981</td>
<td>7</td>
</tr>
<tr>
<td>1991</td>
<td>13</td>
</tr>
<tr>
<td>2000</td>
<td>22</td>
</tr>
<tr>
<td>2007</td>
<td>25</td>
</tr>
<tr>
<td>2011</td>
<td>27</td>
</tr>
</tbody>
</table>
Radiotherapy

Increasing RT attendances

Total no. of radiotherapy treatment attendances

Source: EIS
Radiotherapy

Modernization of RT technology

<table>
<thead>
<tr>
<th>Year</th>
<th>Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>1996</td>
<td>IMRT</td>
</tr>
<tr>
<td>2005</td>
<td>IGRT</td>
</tr>
<tr>
<td>2008</td>
<td>VMAT/RapidArc</td>
</tr>
<tr>
<td>2011</td>
<td>Tomotherapy</td>
</tr>
</tbody>
</table>

Annual Plan 2013/14 to fill the current RT manpower gap to support the growing high-tech RT
Improve access – Chemotherapy Service

2009/10

Expand the capacity of 6 existing chemotherapy day centres

2011/12

Addition of 8 oncology beds in TMH

2013/14

• Set up an ambulatory care unit with 8 day beds in Children Cancer Centre in PWH
• Start renovating a Haematology Oncology ward in NTEC

• Gradual increase in onsite chemotherapy service in KEC
• Improve access to anti-cancer drugs
Chemotherapy

Increasing patient volume & chemo attendances

Total no. of chemotherapy treatment attendances

26% in the past 2 years
Chemotherapy

  - 14 drugs
  - 16 indications

- Expanded coverage of anti-cancer drugs in terms of special drugs (S), safety net (SN) and community care fund (CCF)

<table>
<thead>
<tr>
<th></th>
<th>SFI to CCF/SN</th>
<th>CCF to SN</th>
<th>SFI/SN to S</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010/11</td>
<td>3</td>
<td>-</td>
<td>6</td>
</tr>
<tr>
<td>2011/12</td>
<td>9</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>2012/13</td>
<td>7</td>
<td>-</td>
<td>4</td>
</tr>
<tr>
<td>2013/14</td>
<td>3</td>
<td>2</td>
<td>8</td>
</tr>
</tbody>
</table>

(Up to Oct 2013)

SFI- Self Financed Items
## Samaritan Fund

- It is the only Government fund administered by the HA that provides financial assistance to eligible patients in meeting the expenses on self-financed drugs.

<table>
<thead>
<tr>
<th></th>
<th>2010/11</th>
<th>2011/12</th>
<th>2012/13 (up to Dec 2012)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of patients benefited</td>
<td>989</td>
<td>1083</td>
<td>949</td>
</tr>
<tr>
<td>Subsidies granted on Cancer Drugs</td>
<td>$119.54M</td>
<td>$138.29M</td>
<td>$153.82M</td>
</tr>
</tbody>
</table>
Chemotherapy

• **Community Care Fund (CCF)**
  – Subsidy for patients of HA for specified self-financed cancer drugs which have not yet been brought into the Samaritan Fund but have been rapidly accumulating medical scientific evidence and with relatively higher efficacy

<table>
<thead>
<tr>
<th>Implementation Date</th>
<th>Beneficiary (as at 31 Aug 2013)</th>
<th>Disbursements (as at 31 Aug 2013)</th>
</tr>
</thead>
<tbody>
<tr>
<td>August 2011</td>
<td>1545 person-times</td>
<td>~$138.41M</td>
</tr>
</tbody>
</table>
Key Performance Indicators (KPI)

- Waiting time (days) at the 90th percentile for patients with colorectal cancer/breast cancer/nasopharyngeal cancers receiving first definitive treatment after diagnosis.

- Waiting time (days) from decision-to-treat (DTT) to start of RT for 90th percentile of cancer patients requiring radical RT.
Waiting time (days) at the 90th percentile for patients with colorectal cancer/breast cancer/nasopharyngeal cancers receiving first definitive treatment after diagnosis.
Waiting time (days) from DTT to start of RT for 90th percentile of cancer patients requiring radical RT
Palliative Care

- 16 hospitals under HA provide integrated palliative care services through multi-disciplinary teams.

- Service components in a holistic approach to address patients’ physical, psychosocial and spiritual needs:
  - In-patient care
  - Ambulatory care (e.g. outpatient, day care and home care)
  - Bereavement services

- Around 340 palliative care beds for patients with severe or complex symptoms and needs.
LKS Palliative care program

**Background**
- With support from Li Ka Shing Foundation (LKSF) since 2007, 10 palliative care day centres have been established in 7 clusters

**Objective**
- To serve the needy terminal cancer patients (children and adults) so that more patients could receive comprehensive palliative care and end of life care

**Progress**
- >5,000 terminally ill patients and their families have benefited in 2011/12
Patient experience & service coordination

Cancer case manager program
Cancer case manager (CCM) program

Objective:
➢ To enhance quality of cancer service in HA through the advancement of patient-centred care

- New patients
- Recurrent patients/partial treatment in private

Case Manager

Pathologist
Radiologist
Oncologist
Surgeon
MDT

Cancer Note

Initiate & organize
Management plan based on protocol
FU patient journey, patient support...

Ensure clinic FU, outcomes tracking...
Programme development

- Target: CA Breast & Colorectal cases
- Pilot in KWC & NTWC in 2010/11
- Extension to KCC & HKEC in 2011/12
- Planned for further extension to other clusters in the future

As of Sept 2013, ~3,300 CA breast new cases & ~3,800 CA colorectal new cases benefitted from the program
Patients’ Experience

Evaluation in Kowloon West Cluster & Kowloon Central Cluster

**KWC (2011)**
- Compared with 10 years ago where patients became more anxious after receiving bad news, patients in the CCM Program reported **better psychological status** after case managers broke bad news.

**KCC (2012)**
- **Overall >90% satisfaction rate** among patients who completed the CCM program.
- **Improved quality of life:**
  - Significant correlations between Functional Assessment of Cancer Therapy: General (FACT-G) & knowledge on cancer disease / satisfaction with the cancer case manager.
Improve Quality & Safety

Oncology clinical pharmacy services
Oncology clinical pharmacy services

Background
- Designated program started in PMH & TMH in 2010/11
- Services rolled out to all 7 centres in 2011/12

Objectives
- To provide pharmaceutical care
- To enhance medication safety
- To review and standardize chemotherapy protocols and related MARs at cluster level
- To provide medication education to other health care professionals and patients
Roles and Responsibilities

Working group on protocol review
Clinical Round
Counseling
Clinical Screening
Solving reconstitution issue
Drug advice to nurse
Way Forward

- Develop the 7\textsuperscript{th} Oncology center in UCH in \sim 2021
- Training of health professionals
  - E.g. doctors, nurses, allied health, practising pharmacists to serve the growing needs of specialised service
- Improve coverage of drugs and effective treatment
Thank you