Health Facility Planning Seminar 2016

HOSPITAL MASTER PLANNING

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Ministry of Health Malaysia
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Contents

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• Introduction
• Hospital Master Planning Steps
• Hospital Master Planning in MOH
  – simplified approach
  – less-technical
  – can be done by hospital team
• Sample of Hospital Master Plan
What is a Master Plan

• Guide for decision making
• Identify capital improvement needs
• Accommodate future growth of a facility that include:
  – potential operational needs
  – Infrastructure needs (current & future)
• Identify short term measures that are consistent with long term needs
• Respond to immediate needs in line with the development of long range plan
• Enable to initiate change & improvement, while reserving future policy decisions
Why Master Plan

• Avoid ad-hoc development
• Proposed a development plan which is
  – total /long term solution for hospital development needs
  – coordinated
  – optimize resources (financial, manpower & land)
  – optimize service delivery
Who prepares the Master Plan?

- Team effort:
  - Hospital administrator
  - Service providers
  - Technical staffs

- Service planning guide
- Planning policies/guide
Steps

1. Collect hospital information, data, drawings
2. Develop work plan & deliverables
3. Mobilize appropriate team
   - Investigate & analyze existing facility
   - Future planning ideas
4. Create a comprehensive Master Plan suitable for implementation
   - Investigate & analyze existing facility
   - Future planning ideas
What is a good Master Plan

Key Characteristics:

• **Implementable**
• **Cost Sensitive**
  – financial, physical & human resource limitation
  – optimize available resources – capital & operating costs
• **Flexible**
  – able to adapt to future/new development
  – political, social, economic, technology
Hospital Master Planning

STEP BY STEP
Step 1 - Data Collection

- Workload data eg. Clinic attendences, delivery rate, surgery done per month etc
- Utilization data – BOR, ALOS, OT waiting time etc.
- Physical Space Inventory eg. No of blocks, wards, OtS, delivery rooms etc
- Previous Masterplan
- LOSP / Aerial Photograph
- As Built Drawings / Floor Plans
Step 2 - Conceptual Direction for Hospital Development

- Identify trends & direction in public hospital development
- Established conceptual direction of the proposed hospital development to the institution leadership
Step 3 - Site Planning

• Determine opportunities & constraints of site for future development
• Identify site conditions requiring corrective action
• Determine the best use of the Hospital’s land resources
Step 3 - Site Planning

• Potential site:
  – Within the hospital site (onsite)
    • Hospital site plan
    • Service route (including underground)
    • Sufficient to support new development
  – Outside the hospital compound (off site)
    • Land search & procurement
    • Feasibility & Suitability – location, transportation, optimizing resources
Step 4 - Existing Building Analysis

• Assess the adequacy & appropriateness of the existing plant to accommodate current & future developments:
  – Utilities (water, electricity, genset, aircond etc)
  – Medical gases & LPG
  – STP
Step 5 - Master Zoning Analysis

• Document & evaluate appropriateness of current space allocations
• Evaluate current building zones & the improvements future development could provide
Step 6 - Departmental Analysis

• Conduct functional analysis for each department/unit
• Determine adequacy of facilities in each department
• Appropriateness of interdepartmental relationship
• Adequacy of space to accommodate current workload
• Physical condition & potential for expansion & conversion
Step 7 - Department Workload Projection

- Basis for estimating future departmental space requirements
- Workload / Utilization
- Long term (5-10 years)
Step 8 - Facility Requirement Projection

• Project facility required to support anticipated departmental activity levels
• Estimate the space requirements for each area
Step 9 - Facility Development Concept

• Identify the best facility development concept
• Invite user involvement as much as possible
  – Departmental growth options
  – Centralization vs decentralization
  – Interdepartmental affinities
  – Operating system & access
  – Material flow & handling system
Step 10 - Alternative Development Strategies

- Alternative strategies to achieve the projected facility requirements
- Strength & weakness of each strategies
- Review strategies with Team & select a final course of action
Step 10 - Hospital Master Plan Report

• Prepare a final report for the proposed Hospital Master Plan
• Proposed an implementation Plan
• Phased development & the proposed time schedule
• Short Term / Medium Term / Long Term
Establishing Hospital Development Master Plan For MOH Hospitals
Current Scenario in MOH Hospitals

• Most MOH hospitals has not established their development masterplans
• Hospital Development Masterplan not reviewed/updated outdated
• Most projects proposed are to resolve current issues (reactive planning)
• Unable to do a comprehensive planning (piece meals)
• Failure to prioritize needs
# MASTERPLAN VS REACTIVE PLAN

<table>
<thead>
<tr>
<th>MASTER PLAN</th>
<th>REACTIVE PLAN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long term (10 – 20 years)</td>
<td>Short Term (1-2 years)</td>
</tr>
<tr>
<td>Team Effort (Democratic)</td>
<td>Less Teamwork (Autocratic)</td>
</tr>
<tr>
<td>Scope- Holistic / Comprehensive</td>
<td>Piece-meal</td>
</tr>
<tr>
<td>High efficiency – cost, resources, workflow, work processes</td>
<td>Less efficient</td>
</tr>
<tr>
<td>Satisfaction - High &amp; long term</td>
<td>- Low &amp; Short term</td>
</tr>
</tbody>
</table>
Current Scenario in MOH Hospitals

Lack of Building Information

• No As Built Drawings
• Unsure of building age
• Upgrading works done without proper documentation hence unsure of service route
• No continuation of development plan when new hospital director took over
Realizing a Hospital Master Plan in MOH Hospital

Form a Team

– Hospital Director
– Deputy director (service & development)
– Hospital engineers
– Allied Health
– Nurse
– MA
– Clinician
Service Planning Data

- Where we are now?
  - Data Collection (Evidence Based)
    - BOR
    - BTO
    - ALOS
    - Waiting Time (OT, procedures
    - etc)

- Hospital Efficiency Index (Pablo Lasso Model)
- BPR benchmark - State BPR vs National BPR
- Prescribed norms
Pabon Lasso: 129 MOH hospitals (2013)

- 129 MOH hospitals (excluding 10 SMIs & Orang Asli)
  - Avg BOR 58.18%
  - Avg BTO 67.53 times per year
  - Avg ALOS 3.33 days

- 68 hospitals are inefficient
- 61 hospitals are efficient
• What facilities do we have to support these services:
  – Existing hospital building blocks & physical space inventory:
    • Construction date
    • Aerial photo/latest site plan of hospital (LOSP)
    • Building floor plans (As Built Drawings)
    • etc
  – Previous hospital masterplan (if any)
Current Constrain

Current Service Delivery Issues

• Identify short & medium term development needs
  – Improvement of Outpatient, Inpatient, Support Services, OTs, LDR etc.
  – Compliance to standards / norms
Future Service Planning

• **Where we want to be**
  – In line with service provision planning/policies eg.
    • Non specialist → minor specialist
    • Minor specialist → major specialist
    • Major specialist → additional sub specialty
    • Cluster hospital
  – In line with manpower planning (specialist, allied health & support staffs)

• **Reference :**
  – Medical Development Division
  – Specialty & Sub specialty Framework of MOH Hospitals
Physical Planning – Factors to be considered for new development/building

• Benchmark your hospital with other similar public hospitals eg.
  – Nucleus hospitals
  – Hospital capacity/size/specialty
  – Workload

• How does other hospital evolve i.e. how do they develop their hospitals
Physical Planning – Factors to be considered for new development/building

- Study & evaluate approved projects in other public hospitals & try to customize/fit them to your hospital masterplan
  - Ward block
  - Inpatient & Outpatient Block
  - Hemodialysis Centre
  - Ambulatory Care Centre (ACC)
  - Obstetric Complex
  - Women & Children Complex
  - Neuroscience Complex
  - Low Risk Centre
  - Medical Store
Physical Planning – Factors to be considered for new development/building

• Learn mistakes from others so you don’t repeat them
  – Decanting needs
  – Equipment needs
  – Manpower needs
  – Upgrading of existing hospital infrastructure:
    • Medical gases
    • Water supply
    • Electrical & Genset
    • ICT
    • STP
    • Air-Cond System
    • Etc
Physical Planning – Factors to be considered for new development/building

Utilizing the vacated space:
- Role of Hospital Master Plan Team
- Shall be part of the overall Hospital Master Plan.
- If not indicated in the Master Plan, these spaces will not be optimally used
- Allocation of these spaces shall be based on Need
Why follow other hospitals

- Development trend / way forward
- Development policies
- Lack of time/trained manpower/resources
- Customized to individual hospital needs
- Better Cost Estimates
- Better chance for approval
Support Service Planning

- Masterplan must be comprehensive to **also** include:
  - relevant support services expansion plan
  - engineering components upgrading requirements
  - decanting of services (if required)
  - fire & safety issues etc.
Master Plan Options

• Masterplan must outline development options and identifies the one that will maximize the value of available resources ie. financial, physical and human resources.
Hospital Development Master Plan Approval

• Approval at Hospital Level
• Approval at JKN level
• Approval at MOH level (Medical Development Division & Planning Division)
• Documentation
• Masterplan Review – latest every 5 years
• Dateline ????
Project Approval Criteria

• Project proposals shall be based on the latest approved Master Plan
• A revised Master Plan must be approved first if project deviate from the master plan.
Hospital Development Master Plan
For MOH Hospitals

EXAMPLE:

Master Plan For A Non Specialist Hospital A
<table>
<thead>
<tr>
<th>Relative New:</th>
<th>Old Hospital:</th>
<th>Old &amp; New Hospital:</th>
<th>Old &amp; New Hospital:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upgrade OT</td>
<td>Relocate GOPD to new KK</td>
<td>New Ward Block</td>
<td>Upgrade Old Building</td>
</tr>
<tr>
<td>Upgrade part of Ward to become ICU</td>
<td>Upgrade existing GOPD to become Visiting Specialist Clinic</td>
<td>A&amp;E, Radiology</td>
<td>Mat OTs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Outpatient: Specialist Clinic &amp; Office, CME, Outpatient Pharmacy</td>
<td>Med/Paeds/O&amp;G ward</td>
</tr>
<tr>
<td>Old Hospital:</td>
<td></td>
<td>Inpatient: Ward (Surgical), CSSD, Inpatient Pharmacy, Stores, Main OTs, Kitchen</td>
<td>Labour &amp; Delivery</td>
</tr>
<tr>
<td>Relocate GOPD to existing KK</td>
<td></td>
<td></td>
<td>Expand Medical Records</td>
</tr>
<tr>
<td>New Block – OT, TSSU, ICU</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upgrade existing GOPD to become Visiting Specialist Clinic</td>
<td></td>
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</tbody>
</table>

Master Development Plan For Existing Non Specialist Hospital A
Master Plan For Hospital A

NEW WAD BLOCK
THANK YOU