

# Healthcare Series

## Data Analysis for Problem Solving and Decision Making

The Foundation for a Smart Hospital

### Course Overview

Hong Kong's healthcare system faces an unprecedented "perfect storm": an aging population, rising service demand, and chronic staff shortages. The evolution toward a Smart Hospital is not merely about installing new hardware; it is about the intelligent use of data to solve the fundamental crisis of rising demand and chronic staff shortages. To maintain a skilled workforce and enhance patient safety, hospital leaders must transition from "managing by intuition" to "leading with insights."

### Course Objectives

1. To build a critical mass of clinical professionals and managers by sharing and transferring knowledge on better use of data to continuously improve the quality of care.
2. Equip with analytical skills and the statistical software, facilitate hospital executives to make better decisions.
3. Effective use of data lays the foundation for a smart hospital

### Who Should Attend?

1. Clinical professionals, physicians, nurses
2. Allied health professionals.
3. Quality & Safety and other supporting professionals



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## Smart Hospital

### 智能醫院的基礎

#### - 解決問題和決策的數據分析

- ✓ **優化產能與資源配置**  
透過數據分析, 在有限資源下提升醫院經營效率
- ✓ **精準解讀數據波動**  
避免對數據過度反應, 制定更穩健的管理決策
- ✓ **預測性決策**  
在問題發生前進行系統模擬與主動預測, 實現智慧化前瞻管理

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## Key Takeaways

1. Drive Smart Decisions: Bridge the gap between data analysis and executive decision-making to improve throughput and resource allocation
2. Decode Hospital Variability: Distinguish between "common cause" and "special cause" variations to avoid overreacting to daily data fluctuations
3. Predictive Decision-Making: Move beyond retrospective reporting to proactive system modeling through computer simulation and demand-capacity matching.
4. Scientific Process Mastery: Utilize the laws of variability and flow to eliminate systemic waste and optimize Average Length of Stay (ALOS).

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## Contents

1. Introduction to the Workshop
2. Science for Hospital Operations
3. Theory of Variations
4. Law of Variability Buffering
5. Little's Law
6. Theory of Constraints
7. Cause and Effect Analysis
8. Preparing Data for Analysis
9. Fundamental Statistics for Data Analysis
10. SigmaXL – An Indispensable tool
11. How to Make Data Meaningful?
12. Why Analyst and Decision Makers Need to Work Together?
13. Exercise – Putting New Knowledge into Practice
14. Use of Control charts in Hospitals
15. Making Information Digestible
16. Enhance Your Data to Aid Rapid Decision Making
17. Improving Patient Flow Across Whole Systems
18. Applying the Principles of Flow and Learning from the Data
19. A Simple Method to Predict and Manage ALOS
20. Improve Patient Flow by Computer Simulation
21. Steps Towards a Smart Hospital - Some Initial Thoughts

## Practical Case Studies

- Surgical & Specialized Care: Run charts for Laparoscopic Cholecystectomy and throughput reduction for MRI.
- Safety & Quality Monitoring: SPC monitoring for blood pressure, medication errors (C-Chart), and anesthesia narcotic discrepancies.
- Capacity & Demand Management: Matching bed capacity to demand and addressing unmet needs in Breast Clinics.
- System-Wide Flow: Streamlining Day Care Units and whole-system flow using Kanban and predictive ALOS management.

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## Corporate Training

If you are interested in organizing corporate training, please do not hesitate to contact us for further information and to discuss customized solutions that align with your needs

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### Contact us

For registration of the above course, please complete the e-application form. Our course administrator will contact you shortly

For enquiries, please contact us at (852) 2581 2771

