

## Managing Healthcare

---

Subject Area:	Management Science & Operations
Lecturer:	<b>Kamalini Ramdas</b>
Email Address:	kramdas@london.edu
Room Location:	A215
Extension:	8820
Lecturer:	<b>Nicos Savva</b>
Email Address:	nsavva@london.edu
Room Location:	A214
Extension:	8826
Lecturer:	<b>J�r�mie Gallien</b>
Email Address:	jgallien@london.edu
Room Location:	A213
Extension:	8809
Course Administrator:	Salome Shaw-Moretti
Email Address:	sshawmoretti@london.edu
Room Location:	A208
Extension:	8821
Course Teaching Assistant:	Kraig Delana
Email Address:	kdelana@london.edu
Room Location:	A207
Extension:	8822
Course Code:	E487
Term:	SPR18
Credit Value:	1.0

---

### FACULTY BIO

**Kamalini Ramdas'** research, teaching and consulting interests focus on innovation, service operations and supply chain management. She holds the Deloitte Chair in Innovation and Entrepreneurship and is a Professor of Management Science and Operations at London Business School. Kamalini's current research focuses on creating value through operational innovation. Her research has been published in Management Science, Manufacturing & Service Operations Management, Harvard Business Review, New England Journal of Medicine and other journals. Kamalini's research has received grants from sources including the UK Economic and Social Research Council, the Buchanan Fund, the Sloan Foundation and the Marketing Science Institute. Kamalini has taught at the Darden Graduate School of Business, University of Virginia; the Graduate School of Business, University of Texas at Austin; The Wharton School, University of Pennsylvania, and the Indian School of Business, Hyderabad. Kamalini holds a PhD in Operations Management from the Wharton School, MS in Operations Research from the University of Delaware and BSc (Hons) Mathematics from St. Stephen's College, Delhi.

**Nicos Savva** is an Associate Professor in the Management Science and Operations area of the London Business School and an Honorary Employee of Guys and St Thomas NHS Foundation Trust. Nicos teaches the MBA core course Data, Models and Decisions and the elective Advanced Modelling. Besides London Business School Nicos has taught at The Wharton School, Columbia GSB and the Cambridge Judge Business School. Nicos holds a PhD in Management Science, an MPhil in Finance and a BA in Physics, all from the University of Cambridge. Nicos' research interests include hospital operations management, data analytics, and innovation. His research has appeared in Management Science, MSOM, POM, and Nature Biotechnology. Nicos has acted as a consultant to pharmaceutical and biotechnology companies, retail firms, hospitals and a hedge fund.

**Jérémie Gallien** is a Professor in the Management Science and Operations area of the London Business School. His research focuses on pushing the frontier of supply chain management through collaborations with commercial firms including Amazon, Dell and Zara and global health organizations including the World Bank, the Clinton Health Access Initiative and the Global Fund. Solutions developed by his research group have been implemented by several global corporations, and for this work he was inducted a laureate of the INFORMS Edelman Academy. Pr. Gallien has published, consulted and taught extensively in the areas of operations management, supply chain management and system optimization and he serves on the editorial boards of the journals *Management Science*, *Operations Research* and *Manufacturing and Service Operations Management*. A native of France, Pr. Gallien holds an Engineering Degree in Mathematics and Industrial Engineering from the École des Mines de Paris, and a PhD in Operations Research from MIT.

## **COURSE SUMMARY**

With increased demand and pressure to reduce costs, healthcare delivery systems across the globe are under pressure to find ways to increase quality and widen access, while simultaneously reducing cost. The aim of the course is to explore the challenges these competing goals create and to throw light on how they can be best managed. In so doing the course seeks to identify opportunities in health care for managers, entrepreneurs and policy makers. This course draws substantially from the research and consulting expertise of the team of instructors teaching it.

Kamalini Ramdas: Value-based healthcare and healthcare innovation

The course will start with an introduction to the multiple stakeholders in healthcare and the major current challenges. We will introduce the value framework in healthcare and students will gain experience in using this lens to examine decisions that impact different key stakeholders. In particular we will examine four important stakeholders: health insurance providers, primary care providers, employers and device manufacturers.

We will also examine innovation in healthcare and link it to value creation. It is very difficult for large care providers to innovate radically. We will examine organizations that have succeeded in doing this, with a view to understanding how, to drive radical innovation in healthcare delivery. This will involve developing an understanding of how to nurture an innovative culture in provider organizations, how to systematically generate new value-creating ideas, and how to develop ideas and assess ideas in order to bring forward successful innovations in healthcare delivery. We will also examine other forms of innovation in the healthcare landscape including entities that incubate health-specific business concepts.

Nicos Savva: The pharmaceutical industry and the hospital sector

The second part of the course will present an introduction to two of the largest healthcare sectors: The pharmaceutical industry and the hospital sector.

Over the past century, the pharmaceutical industry has been at the forefront of bringing novel technologies to patients in the form of new drugs. However, the pharmaceutical pipeline is now drying out, drugs are coming off patent faster than they can be replaced by new medicines, competition with generics' manufacturers is intensifying; the industry is in difficulty. We will analyze potential causes for this changing environment, how pharma companies respond to these changes, both strategically and operationally, and how smart entrepreneurs reap the opportunities that the changing landscape provides.

The most resource-intensive healthcare interventions take place in hospitals. We will illustrate the challenges of modern hospitals in providing access, consistent clinical quality, and cost management. We will examine the consequences of failing to respond to the challenge of increasing workloads and discuss how to manage these challenges through evidence-based interventions at hospital level (e.g., Total Quality Management) and at the regional/national level (e.g., hospital reimbursement, target-based management, geographical organization of hospitals to achieve economies of scale and scope).

Jérémie Gallien: Delivering healthcare to the developing world

The last part of the course provides an introduction to the challenges and opportunities associated with global health, with a particular emphasis on low-income countries. Topics covered include an introduction to modern global epidemiology and disease burdens, an introduction to modern global health organizations, delivery structures, behavioral aspects, technology and supply chains. We will discuss managerial and technical innovations with high global health impact, including supply chain digitization in Zambia, infrastructure for HIV early infant diagnosis in Mozambique, and community health workers.

This course is aimed at students interested in the healthcare industry or in other industries for which healthcare is relevant.

## COURSE FORMAT

This course is offered as a block week.

## LEARNING OUTCOMES

We aim to equip managers, entrepreneurs and policy makers with a mind-set that enables them to identify and benefit from opportunities in healthcare management.

## ASSESSMENT

### Assessment Table

Assessment type	Deadline	Weighting	Group/ Individual	Requirement to pass? Y/N	Submission Information
Final Individual Assignment	Monday 29 <sup>th</sup> January noon	40%	Individual	Yes	Canvas
Group Assignment	Monday 5 <sup>th</sup> February noon	40%	Group	No	Canvas
Participation	N/A	20%	Individual	No	ForClass (where applicable)

### Minimum requirements to pass this course:

- 1) minimum 50% in the weighted final numerical score AND
- 2a) minimum 50% in the aggregate of the individual components OR
- 2b) minimum 50% in the largest weighted individual component

### Assessment Overview

Assessment will be based on a final individual written assignment (40%), a group project (40%) and individual participation (20%).

For the individual assignment (40%), students are required to write an Economist-style article on a topic related to the assigned teaching cases and readings; this topic must be selected out of a list that we will provide before the beginning of class. The article should be at most two pages long excluding figures. This is an open book take home assignment to be completed after the course.

The group assignment (40%) will involve students pursuing a project of interest on one of the areas covered by the course. Groups should consist of 3 or 4 students. Students are required to form and enter your own groups using the Group Assignment page on Canvas. While there is no restriction on the exact topic for the group assignment, students must obtain approval from faculty on their chosen topic. Please submit a one page proposal by **Wednesday 17 January 2018 at 10:00** on Canvas.

Possibilities could include:

1. Explore a real issue a healthcare organization is facing and present suggestions for potential improvements
2. Develop a business plan for a start-up that will operate in the healthcare domain
3. Present and explore the specific challenges in delivering care to a specific developing world context

The final report should be approximately 10 pages long excluding appendix. This will be an open book take home assignment to be completed after the course.

The individual participation component is driven by the level of preparation to assigned cases and readings, reflected by the ability to enrich the corresponding class discussions by interventions that are on point, thoughtful and concise. This evaluation component is also driven by the answers to the case preparation questions that students are required to enter on an online class discussion support system (ForClass) before the beginning of every class session. Finally, this assessment component includes attendance, on-time arrival, and generally rewards any positive contribution to the learning environment.

### **Assessment and Learning Outcomes**

The group assignment aims to allow the students to engage deeper on a healthcare topic of interest while the individual assignment aims at encouraging the students to communicate clearly their views about a specific healthcare issue. The group project and the individual assignment will both give students the opportunity to use the frameworks and methods covered in the course, thus helping them to develop a mindset that enables them to find and gain from opportunities in healthcare.

### **Plagiarism Declaration**

All students completing this course should be aware that in submitting any assignment for this course, you agree to the following declaration:

*"I certify that the coursework that I have submitted is entirely my own unaided work, and that I have read and complied with the School's guidelines on plagiarism and referencing as set out in the School handbook.*

*I understand that the School may make use of plagiarism detection software and that my work may therefore be stored on a database which is accessible to other users of the same software."*

Students should be aware that, where plagiarism is suspected, a formal investigation may be carried out under the School's Student Disciplinary Procedure. This may result in penalties ranging from mark deduction to expulsion from the School.

### **PRE-REQUISITES & RELATED COURSE**

There are no pre-requisites.

### **COURSE PREPARATION & READING**

#### **Pework:**

We strongly advice that you prepare all cases before the beginning of the course. Please refer to the detailed session description for a list of specific preparation related to each session.

#### **Coursework**

There will typically be a case and a reading for each class session in compulsory readings, and other readings in the optional readings for each session.

Course materials will be distributed: Electronically on Canvas

### **TEACHING METHODS**

Class sessions will be a mix of lectures, case discussions, and interaction with guest speakers.

Teaching/contact hours: 27.5

Suggested independent study hours: 20

The following teaching methods will be used on this course:

- Lecture(s)
- Guest Speaker(s)
- Seminar(s)
- External Visit(s)
- Project(s)
- Other (please specify below)

## **COURSE STRUCTURE**

The first four sessions of the course will be taught by Kamalini Ramdas, sessions 5-8 by Nicos Savva, and sessions 9-10 by Jérémie Gallien.

Session	Day	Date	Presenter	Contents	Required Readings	Optional Readings	
1	Mon	08-Jan	Kamalini Ramdas	Introduction; Value in Healthcare	Commonwealth Care Alliance; What is value in healthcare?		
2	Mon	08-Jan	Kamalini Ramdas	Innovation in Healthcare Delivery	Four Ways to Reinvent Service Delivery; Adopting Innovations in Care Delivery		
3	Tue	09-Jan	Kamalini Ramdas	Assessing Healthcare Delivery Innovation	Eliminating Avoidable Blindness: Outreach Activities at Aravind Eye Care System; Value for Patients; Measuring What Matters		
4	Tue	09-Jan	Kamalini Ramdas	Rethinking stakeholders	Michelin Employee Health Strategy; Reconfiguring Stroke Care in North Central London		
5	Wed	10-Jan	Nicos Savva	The Productivity Challenge in the Pharma Industry	Novartis: A transformative Deal; The price of failure	Wyeth Pharmaceuticals: Spurring scientific creativity with metrics; Novartis AG: Science-based Business; Rebuilding the R&D Engine in Big Pharma; Lessons from 60 years of pharmaceutical innovation	
6	Wed	10-Jan	Nicos Savva	The Biotechnology Revolution and Value-Based purchasing	Abgenix and the Xenomouse; Novartis' Gilenya	Benchmarking biotech and pharmaceutical product development; NICE or Nasty?; The economics of licensing contracts; Can Science be a Business? Lessons from Biotech	
7	Thu	11-Jan	Nicos Savva	Total Quality Management and Internal Hospital Organisation	Intermountain Health System; Shouldice Hospital Ltd (Abridged)	Hospitals get serious about operations	
8	Thu	11-Jan	Nicos Savva	System-level hospital management and regional organisation	Yardstick Competition for Service Systems OR Economies of Scale and Scope in Hospitals		
9	A	Fri	12-Jan	Jérémie Gallien	Introduction: Global Epidemiology, Actors, Trends and Concepts	Global health delivery: a glossary	Preparing for a pandemic; The U.S. health system in perspective: A comparison of twelve industrialized nations; Barefoot doctors and medical tourists: the state of health care in China and India
	B	Fri	12-Jan	Jérémie Gallien	Adoption and Supply Chain Challenges	Oral rehydration therapy	Slow ideas; Rx: Human nature
10	A	Fri	12-Jan	Jérémie Gallien	Health Systems and Technology	Infant HIV diagnostics: Supply chain in sub-Saharan Africa	Technologies for global health; Optimal decentralization of early infant diagnosis of HIV in resource-limited settings; Improving HIV early infant diagnosis supply chains in sub-Saharan Africa: Models and application to Mozambique
	B	Fri	12-Jan	Jérémie Gallien	Providers and Incentives	Community health workers in Zambia: Incentive design and management	One million community health workers: Technical task force report; Altruistic capital: Harnessing your employees' goodwill

## DETAILED SESSIONS DESCRIPTION

---

### Session 1: Introduction; Value in Healthcare

#### Required readings:

- *Commonwealth Care Alliance: Elderly and Disabled Care*, M. E Porter and J. F. Baron, Harvard Business School, May 2008
- *What is value in healthcare?* M. E. Porter, *New England Journal of Medicine Perspective*, December 23, 2010

#### Assignment:

- Why is CCA targeting a population that most insurers tried to avoid?
  - Describe CCA's health plan in the Senior Care Plan. How does it differ from other insurance models and why?
  - Describe CCA's approach to providing care and contracting for care delivery. What is the rationale?
  - Evaluate CCA's overall model for elderly and disabled care. How can it be improved?
  - What challenges and constraints will CCA have to contend with? What recommendations would you make to Dr. Master?
- 

### Session 2: Innovation in Healthcare Delivery

#### Required readings:

- *Four Ways to Reinvent Service Delivery*, K Ramdas, E. Teisberg and A. Tucker, *Harvard Business Review*, December 2012
- *Adopting Innovations in Care Delivery: The Case of Shared Medical Appointments*, K. Ramdas and A. Darzi, *New England Journal of Medicine*. 376:1105-1107, April 2017.

#### Assignment:

- Think about a healthcare delivery innovation that you have experienced or are familiar with, and that you believe is a significant innovation. Why do you consider it innovative? What is the scope of this innovation? In other words, where else can it be applied
  - Come up with one or more new business opportunities in the area of healthcare delivery. Be prepared to describe an opportunity you have identified in less than one minute, if called upon
- 

### Session 3: Assessing Healthcare Delivery Innovation

#### Required readings:

- *Eliminating Avoidable Blindness: Outreach Activities at Aravind Eye Care System*, Deo, S. and K. Ramdas, London Business School, 2016
- *Value for Patients*, E. Teisberg and S. Wallace, *Brain Injury Professional*, August 16, 2015.
- *Measuring What Matters: Connecting Excellence, Professionalism and Empathy*. S. Wallace and E. Teisberg.

#### Assignment for Aravind Case:

- Access, cost and quality have been called the pillars of the "iron triangle" of healthcare. Using these pillars, describe Aravind's strategy to achieve its mission of eliminating needless blindness

- Compare and contrast eye camps and vision centres along the dimensions of access, cost and quality. Develop a P&L statement for each
  - Critically evaluate the mix of services offered at the vision centres and eye camps
  - Dr. Nam has a vision of eventually replacing eye camps with vision centres. Is this a good idea?
- 

#### **Session 4: Rethinking stakeholders**

##### *Required readings:*

- *Reconfiguring Stroke Care in North Central London*, Porter, M., Mountford J. and Ramdas K, Harvard Business School Case, June 2011
- *Michelin Employee Health Strategy (A)*, E. Teisberg, S.Wallace, Harvard Business School

##### *Assignment for Stoke Care Case:*

- What was the initial care delivery model?
- How was the model reorganized to create value?
- What were the results of the change in model?
- How could the model be improved and / or expanded?

##### *Assignment for Michelin Case:*

- Why is a tire company so interested in health care?
  - Which option should they pursue?
- 

#### **Session 5: The Productivity Challenge in the Pharma Industry**

##### *Required readings:*

- Novartis: A transformative Deal
- The price of failure, *The Economist* 29 Nov 2014

##### *Assignment:*

- (1) What challenges does the pharmaceutical industry face?
- (2) What was the underlying strategic rationale for the deal with GSK? What were the synergies?

##### *Optional readings*

- *Wyeth Pharmaceuticals: Spurring scientific creativity with metrics*, HBS case 9-607-008
  - *Novartis AG: Science-based Business*, HBS case 9-608-136 (2008)
  - *Rebuilding the R&D Engine in Big Pharma* (J.P Garnier, HBR May 2008)
  - *Lessons from 60 years of pharmaceutical innovation* (B. Munos, Nature Biotechnology 2008)
-



## Session 6: The Biotechnology Revolution and Value-Based purchasing

### Required reading:

- Abgenix and the Xenomouse, R Dolan, HBS case 9-501-061
- Novartis' Gilenya

### Assignment: Abgenix and the Xenomouse

- (1) How would you have valued the different options for ABX-EGF?
- (2) Should Abgenix have kept ABX-EGF until Phase II?
- (3) Should Pharmacol have paid more than Biopart to get it?
- (4) Which company ultimately got the best deal?

### Assignment: Novartis' Gilenya

- (1) Compare the pricing, reimbursement, physician payment, and health care budgeting/expense management in England, Germany and Japan.
- (2) Would you rather be a patient in England, Germany, or Japan? Explain your rationale.
- (3) From the perspective of Novartis, how might each system's pricing/reimbursement structure influence the type of products to develop, whether to develop products for a specific market, how much to invest in Research & Development.

### Optional readings:

- *Benchmarking biotech and pharmaceutical product development*, D.L. Drakeman (2014), *Nature Biotechnology* 32, 621-625
- *NICE or Nasty?*, R Angelmar and A Bieser, *INSEAD case study 506-152-1 (2006)*
- Mason, Savva and Scholtes (2008), The economics of licensing contracts, *Nature Biotechnology*
- *Can Science be a Business? Lessons from Biotech*, G Pisano, *HBR (2006)*

### External Speaker

Dr Chris Meier (Principal BCG)

---

## Session 7: Total Quality Management and Internal Hospital Organisation

### Required readings:

- Intermountain Health System (HBS case)
- *Shouldice Hospital Ltd (Abridged)* HBS case (you may already be familiar with this case from your Operations Management class)

### Assignment:

- (1) What is Total Quality Management and why did IHC want to implement it?
  - a. Was IHC successful first time in implementing it?
  - b. What are the challenges that IHC is going forward?
- (2) Compare and contrast Shouldice and Intermountain Health System
  - o How have they organized care?
  - o What are the challenges they each face going forward?

### Optional readings:

- *Hospitals get serious about operations* by Mango and Shapiro, *McKinsey Quarterly* (2001)

### Book for further reading:

- *Hospital Operations* by Hopp and Lovejoy (FT Press 2012)

---

## Session 8: System-level hospital management and regional organisation

Read one of the following two readings and prepare the questions following the reading your choice.

### Hospital Reimbursement

- Yardstick Competition for Service Systems, N. Savva, T. Tezcan and O.Yildiz, (Manuscript.pdf)

What is a prospective payment system? Why are hospitals reimbursed in such a way? What is a potential problem with using prospective payment systems for hospitals and how can it be alleviated?

### Regional organization

- Economies of Scale and Scope in Hospitals, M. Freeman, N. Savva and S. Scholtes. (Manuscript.pdf)

Hospitals typically offer a variety of medical specialties and treat both emergencies and elective patients. According to this study, is there any advantage in doing so?

This session will also discuss the use of top-down targets to manage emergency care (e.g. the 4 hour target) and the interface between hospital and community care

### External Speaker

Dr Marc Far (CIO of East Kent Hospitals NHS Foundation Trust and founder of Beautiful Information)

---

## Session 9A: Introduction: Global Epidemiology, Actors, Trends and Concepts

Required readings:

- *Global health delivery: a glossary*, T J Rosenberg; E Sullivan; N Carney; J Rhatigan; R Weintraub, Harvard case GHD-C04

Optional readings:

- *Preparing for a pandemic*, HBR Report
  - *The U.S. health system in perspective: A comparison of twelve industrialized nations* by D. Squires (Commonwealth Fund 2008)
  - *Barefoot doctors and medical tourists: the state of health care in China and India*, Chapter 10, *Billions of Entrepreneurs: How China and India are reshaping their futures – and yours*, T Khanna
- 

## Session 9B: Adoption and Supply Chain Challenges

Required readings:

- *Oral rehydration therapy*, N Ashraf; C Qureshi, HBS case

Assignment:

- Is ORT a good product? Why or why not?
- What barriers to ORT utilization exist at the patient, provider, and system levels?
- What should Binkin and her UNICEF/WHO colleagues do next?

Optional readings:

- *Slow ideas* by Atul Gawande (*The New Yorker* 2013)
  - *Rx: Human nature*, Nava Ashraf HBR (2013)
-

## Session 10A: Health Systems and Technology

### Required readings:

- *Infant HIV diagnostics: Supply chain in sub-Saharan Africa* (Kellogg case)

### Assignment:

- How would you characterize the performance of the current system for diagnosing infants in Ektu?
- Quantify the relationship between the operational performance and the health outcomes of patients.
- What impact will a point-of-care infant HIV diagnostic device have on the central laboratory? What are the implications on the placement decision?
- What metrics should be used to evaluate the new point-of-care device relative to the current laboratory-based DBS testing?
- At which clinics should Dr. Gatonye implement the twenty point-of-care devices?

### Optional readings:

- *Technologies for global health* by Howitt et al. (*The Lancet* 2012)
  - *Optimal decentralization of early infant diagnosis of HIV in resource-limited settings* by Deo and Sohoni (2014)
  - *Improving HIV early infant diagnosis supply chains in sub-Saharan Africa: Models and application to Mozambique* by Deo et al. (2014)
- 

## Session 10B: Providers and Incentives

### Required readings:

- *Community health workers in Zambia: Incentive design and management*, N Ashraf, N Kindred, HBS (2011)

### Assignment:

- In what ways have CHWs been able to address the healthcare human-resource crisis in Zambia, given that country's specific disease distribution? What have the limitations of these approaches been?
- Given the needs of the country, how should the government recruit new CHWs?
- How does the form of compensation relate to CHWs' retention?
- What are the trade-offs among different forms of compensation, in terms of their effect on CHWs' motivation?

### Optional readings:

- *One million community health workers: Technical task force report* (The Earth Institute Columbia University)
  - *Altruistic capital: Harnessing your employees' goodwill* (HBS Working Knowledge 2013)
- 

## Bibliography of further reading

- *The Innovator's Prescription*, Clayton Christenson
- *The checklist manifesto* (Atul Gawande)
- *Hospital Operations* by Hopp and Lovejoy (FT Press 2012)