

## *Innovation and Management in Health Care*

**Course Outline:** The health care system is affected by a unique tension: technological innovation generates significant improvements in life expectancy and in quality of life, but it also contributes to more than half of the increase in health expenditures. This course will focus on the impact this tension has on innovators, payers, and providers. The focus will be primarily on the US health care system.

**Meeting Times:** Monday and Thursday, 1:15 pm – 3:00 pm

**Course Faculty:** Stefanos Zenios and Rob Chess

**Class Format:** The class will utilize a combination of lectures, case discussions, industry speakers, and panels. Prominent industry leader will be guest-speakers in several classes.

**Class Preparation:** The amount of readings assigned for each class session is significant. Our expectation is that you will complete all readings prior to each class and you will be prepared to discuss your answers to the preparation questions assigned for that class; preparation questions will be distributed prior to each class session. These questions are intended to help you synthesize the information provided in the readings. Skipping some of the readings will detract from your preparation. When the preparation questions specifies that you should perform supporting numerical analysis, come to class prepared to explain the steps in your analysis, the assumptions, the results, and the conclusions. You will need between two and four hours of reading and preparation for each class session.

**Classroom Dynamics:** In each class session, we will be discussing the topics covered in the assigned readings and case. To ensure a productive discussion, please adhere to the following guidelines:

1. Be attentive to your classmates' comments.
2. Build on your classmates' comments. Make sure that your comments are linked to the stream of comments that preceded you, and to the road map provided by the faculty.
3. Challenge the assumptions implicit in your comments, in the comments of your classmates, and in the comments of the instructors.
4. Be prepared to articulate and justify your assumptions.
5. Arrive in class on time and do not leave before the end of the class.
6. We will cold call to monitor preparation, and to ensure that multiple points of view are raised and pursued in sufficient depth.

**Classroom Attendance:** You should attend each class. You can miss two classes without that adversely affecting your class grade but you will need to notify the instructors ahead of time. For the *second* missed class you will need to submit a written analysis of the case and readings for that date. Additional absences will affect your grade as follows: each additional absence beyond the “allowed” two absences will reduce your grade by one mark. For example, if your grade would have been HP and you have missed four classes, your grade will become LP. You should arrive in the classroom and be seated prior to 1:15 pm. You should not leave the classroom before the end of the class session. Arrivals after 1:20 pm and premature departures from the class will be considered as absences.

**Seating Assignments:** A seating chart will be distributed in the second class session. Please take a seat you will be comfortable with for the rest of the quarter and use the same seat in each class session.

**Grade:** The grade for this course will be determined based on the quality and depth of your classroom contributions (35%), individual and team assignments (45%), and term paper (20%). Team assignments should be completed in teams of *two* unless otherwise noted. Written feedback on your classroom contributions will be provided during the week of Feb 10.

**Term Paper:** A term paper on a set of topics assigned by the instructors will be due on *Monday, March 14* at 9:00 am. The topics will be distributed on Monday, March 7. You are expected to work individually on the term paper and you should not discuss the topics or your analysis with any of your classmates.

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Office Hours: By appointment

*Innovation and Management in Health Care*  
*Course Overview*

Date	Topic
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**Introduction**

1/4	<p><b>The Cost of Pharmaceuticals: Should Health Plans Cover Viagra?</b></p> <p><b>Topics:</b></p> <ul style="list-style-type: none"><li>• Effect of drug coverage decisions on employers, employees, health care providers, and pharmaceutical manufacturers.</li><li>• The Ethics of Drug Coverage</li><li>• Implications for Drug Development and Marketing.</li></ul> <p><b>Read:</b></p> <ul style="list-style-type: none"><li>• Should Employers pay for Viagra?</li><li>• The Economics of Viagra</li><li>• An Ethical Template for Pharmacy Benefits</li><li>• Pfizer’s Impotence Pill Received FDA Approval</li><li>• Insurance Coverage for Viagra<sup>®</sup>: Market Dynamics and Economic Implications</li><li>• [Read by Jan 13] Note on Employer-Based Health Insurance</li><li>• [Read by Jan 20] Types of Managed Care Organizations</li></ul> <p><b>Prepare:</b></p> <ul style="list-style-type: none"><li>• Questions in “Insurance Coverage for Viagra”</li></ul> <p><b>Note:</b> The readings “Note on Employment-Based Health Insurance” and “Types of Managed Care Organizations” provide background information that is useful for the classes of 1/6 and 1/10. The former is essential for the class of 1/13 and the latter for the class of 1/20. Please read these notes by the dates indicated above.</p>
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1/6	<p><b>The Health Care Economy</b></p> <p><b>Topics:</b></p> <ul style="list-style-type: none"> <li>• Macroeconomic and microeconomic drivers of US health care spending.</li> <li>• Basic Principles of Health Economics</li> <li>• Financial incentives and their impact on innovation, medical decisions and prices.</li> </ul> <p><b>Read:</b></p> <ul style="list-style-type: none"> <li>• Review of the Economics of Health and Health Care (GSB Note)</li> <li>• US Health Care Spending in an International Context.</li> <li>• Mixed Signals: Public Policy and the Future of Health Care R&amp;D</li> <li>• Policy Options for Prescription Drug Coverage</li> </ul> <p><b>Prepare:</b></p> <ul style="list-style-type: none"> <li>• What are the main factors driving the high US health care spending?</li> <li>• Contrast the three policy proposals described in the note “Policy Options for Prescription Drug Coverage.” Which of these proposals is more likely to lead to an immediate reduction in drug prices and why?</li> <li>• What would the effect of each proposal be on the incentive for biopharmaceutical companies to develop new drugs?</li> </ul>
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<b>Health Care Competition</b>
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1/10	<p><b>The Failure of Employment-Based Health Insurance</b></p> <p><b>Guest:</b> A. Enthoven, Professor (Emeritus) Stanford GSB</p> <p><b>Topics:</b></p> <ul style="list-style-type: none"> <li>• Market failures in health care</li> <li>• Purchasing strategies for employment-based health insurance</li> <li>• Managed competition</li> </ul> <p><b>Read:</b></p> <ul style="list-style-type: none"> <li>• Employment-Based Health Insurance is Failing: Now What?</li> <li>• Redefining Competition in Health Care</li> <li>• Physician: The Captain of the Team; read pages 56-63 – the remaining pages are optional but highly recommended.</li> <li>• [Optional but highly recommended] Commentary: Can Managed Competition Solve the Problems of Market Failure?</li> </ul> <p><b>Prepare:</b> Questions will be distributed prior to class.</p>
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1/13	<p><b>Innovation in Health Plan Purchasing`</b></p> <p><b>Guests:</b> J. Closs, <i>CEO - Benu Inc</i> M. Mellenthin <i>VP - Benu Inc</i></p> <p><b>Topics:</b></p> <ul style="list-style-type: none"> <li>• Health plan pricing and risk-adjustment</li> <li>• The trade-off between competition and adverse selection</li> <li>• Health exchanges: challenges and opportunities</li> </ul> <p><b>Read:</b></p> <ul style="list-style-type: none"> <li>• BENU: Bringing Consumer Competition To Health Care</li> <li>• The Practice of Risk Adjustment</li> </ul> <p><b>Prepare:</b> Questions will be distributed prior to class.</p> <p><b>Due [Team Assignment]:</b> Submit a written analysis of the case. Your analysis should provide a concrete recommendation for BENU's expansion strategy. The preparation questions will provide a road map for the analysis.</p>
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<b>Managed Care</b>
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1/20	<p><b>Organization of Health Care Delivery</b></p> <p><b>Topics:</b></p> <ul style="list-style-type: none"> <li>• The "ideal" health care system.</li> <li>• Organized delivery system versus fragmented systems: financing and organization principles</li> <li>• The advantages and disadvantages of organization</li> </ul> <p><b>Read:</b></p> <ul style="list-style-type: none"> <li>• Intermountain Health Care</li> <li>• Prepaid Groups and Organized Delivery Systems</li> <li>• Managed Care: The US Experience</li> </ul> <p><b>Prepare:</b> Questions will be distributed prior to class.</p>
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1/24	<p><b>Vertically Integrated Health Plans: Kaiser Permanente</b></p> <p><b>Guest:</b> R. Pearl, MD <i>Executive Director and CEO, The Permanente Medical Group</i></p> <p><b>Topics:</b></p> <ul style="list-style-type: none"> <li>• The Current Health Care Crisis, Its Causes, and Possible Solutions.</li> <li>• Information Technology as a Catalyst for Change</li> <li>• Achieving the promise of integration through information technology</li> </ul> <p><b>Read:</b></p> <ul style="list-style-type: none"> <li>• Crossing the Quality Chasm: Executive Summary</li> <li>• Crossing the Quality Chasm: Using Information Technology</li> <li>• Is Kaiser the Future of American Health Care?</li> </ul> <p><b>Prepare:</b> Questions will be distributed prior to class.</p>
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<b>The Payer-Provider Tension: Reimbursement and Management</b>
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1/27	<p><b>Health Care Provider Reimbursement</b></p> <p><b>Guest:</b> G. Chertow, MD, MPH, <i>Associate Professor, Division of Nephrology, UCSF</i></p> <p><b>Topics:</b></p> <ul style="list-style-type: none"> <li>• Financial Incentives from Different Reimbursement Models</li> <li>• The Economics of Incentives for ongoing care</li> </ul> <p><b>Read:</b></p> <ul style="list-style-type: none"> <li>• Challenges in Renal Care</li> <li>• The American Health Care System: The End-Stage Disease Program</li> </ul> <p><b>Prepare:</b> Questions will be distributed prior to class.</p>
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1/31	<p><b>Centers of Excellence</b></p> <p><b>Guest:</b> R. Migliori, MD, <i>Chief Executive Officer, United Resource Network (a United Health Group company)</i></p> <p><b>Topics:</b></p> <ul style="list-style-type: none"> <li>• Volume and Quality in Health Care</li> <li>• Quality, Selective Patient Referral, and Expanded Contracting</li> </ul> <p><b>Read:</b></p> <ul style="list-style-type: none"> <li>• United Resource Network: Innovation in Transplantation Referral and Contracting (to be distributed in class)</li> <li>• Interpreting the Volume–Outcome Relationship in the Context of Health Care Quality</li> <li>• Modified Capitation and Treatment Incentives for End Stage Renal Disease</li> </ul> <p><b>Prepare:</b> Questions will be distributed prior to class.</p> <p><b>Due [Individual Assignment]:</b> The assignment will be distributed prior to class.</p>
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<b>Providers: The Acute Care Setting</b>
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2/3	<p><b>Managing Complexity: Medication Errors and Information Systems</b></p> <p><b>Topics:</b></p> <ul style="list-style-type: none"> <li>• Errors in Medicine</li> <li>• To Err is Human</li> <li>• Computerized Physician Systems</li> <li>• The financial case for information technology in health care</li> </ul> <p><b>Read:</b></p> <ul style="list-style-type: none"> <li>• Dana-Farber Cancer Institute</li> <li>• To Err is Human: Building a Safer Health System</li> <li>• Patient Safety: Improving Safety with Information Technology</li> <li>• The Economics of Computerized Physician Order Entry Systems</li> </ul> <p><b>Prepare:</b> Questions will be distributed prior to class.</p> <p><b>Due [Team Assignment]:</b> Submit a written analysis of the case outlining the causes of Betsy Lehman’s death and proposing concrete actions that the Dana Farber Cancer Institute should take in order to avoid such incidences in the future. Details for the assignment will be provided prior to class.</p>
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2/7	<p><b>Acute Care: Support Operations</b></p> <p><b>Guests:</b> S. Seshadri, MBA, <i>VP Process Excellence</i> R. White, MD, <i>Medical Director, OR, Stanford Hospital</i></p> <p><b>Topics:</b></p> <ul style="list-style-type: none"> <li>• Support process management and relationship to clinical care</li> <li>• Value Chain Management</li> <li>• Coordination in OR management</li> </ul> <p><b>Read:</b></p> <ul style="list-style-type: none"> <li>• PROCESS IMPROVEMENT IN STANFORD HOSPITAL'S OPERATING ROOM</li> <li>• Operating Room Management: What goes wrong and how to fix it</li> <li>• The Business of Surgery (3 short articles by Dr James Ausman).</li> </ul> <p><b>Prepare:</b> Questions will be distributed prior to class.</p>
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<b>The Innovators</b>
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2/10	<p><b>Pharmaceuticals: Research and Product Development</b></p> <p><b>Guest:</b> S. Desmond-Hellman, MD, MPH, <i>President – Product Development, Genentech</i></p> <p><b>Topics:</b></p> <ul style="list-style-type: none"> <li>• Pharmaceutical R&amp;D</li> <li>• Portfolio Management</li> <li>• Product Development Decisions and Strategy</li> </ul> <p><b>Read:</b></p> <ul style="list-style-type: none"> <li>• Eli Lilly &amp; Company: Drug Development Strategy (A)</li> <li>• How Smithkline Beecham makes better resource-allocation decisions.</li> <li>• GSB Note on the Biopharmaceutical Industry</li> <li>• [Optional but highly recommended] The price of innovation: new estimates of drug development costs</li> </ul> <p><b>Prepare:</b> Questions will be distributed prior to class</p> <p><b>Due [Individual]:</b> Which of the three decision options described in the case (if any) should Eli Lilly pursue? Provide analysis to support your recommendation. Are there any other options not described in the case that should be explored?</p>
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2/14	<p><b>Pharmaceuticals: Launching a Blockbuster</b></p> <p><b>Topics:</b></p> <ul style="list-style-type: none"> <li>• Product Launch Strategies</li> <li>• Clinical Differentiation</li> <li>• Implications on Medical Expenditures</li> </ul> <p><b>Read:</b></p> <ul style="list-style-type: none"> <li>• Humira: The Launch of a New Rheumatoid Arthritis Drug (to be distributed in class)</li> <li>• Blockbuster Ecosystems: Sustainable Development</li> </ul> <p><b>Prepare:</b> Questions will be distributed prior to class</p>
2/17	<p><b>Medical Devices: The Value Proposition</b></p> <p><b>Guest:</b> S. Oesterle, MD <i>Senior VP, Medicine and Technology, Medtronic</i></p> <p><b>Topics:</b></p> <ul style="list-style-type: none"> <li>• Linking Medical Devices to the Total Cost of Care</li> <li>• Shifting Costs to Capture Value</li> <li>• Making the Reimbursement Case</li> </ul> <p><b>Read:</b></p> <ul style="list-style-type: none"> <li>• The Case Grows for a \$20,000 Heart Device: Moderately Ill Cardiac Patients Live Longer When Defibrillator is Implanted, Study Concludes</li> <li>• More are Eligible for Heart Device: Accused of Rationing Care, Medicare Expands the Use of Implanted Defibrillator</li> <li>• CMS Expands ICD Coverage, But With Strings Attached [Focus on pages 1-4]</li> <li>• Medtronic: Annual Analyst Meeting [Focus on pages 1-6, 18-20]</li> </ul> <p><b>Prepare:</b> Questions will be distributed prior to class.</p>

2/22	<p><b>Medical Devices: The Lifecycle of Innovation</b></p> <p><b>Guests:</b> Richard Lin, MD, MBA, <i>Partner, Three Arch Partners</i></p> <p><b>Topics:</b></p> <ul style="list-style-type: none"> <li>• Development and regulatory approval</li> <li>• Creating and executing a reimbursement strategy</li> <li>• The economics of medical devices and their impact on providers and payers.</li> </ul> <p><b>Read:</b></p> <ul style="list-style-type: none"> <li>• Medical Device Regulation: An Introduction for the Practicing Physician</li> <li>• Opening the Shut Cases</li> <li>• Paradigm Shifts in Cardiovascular Medicine</li> <li>• Can We Afford to Eliminate Restenosis? Can we Afford Not To?</li> </ul> <p><b>Prepare:</b> Questions will be distributed prior to class.</p>
2/24	<p><b>Pharmaceuticals: Strategies and the Value Proposition</b></p> <p><b>Guest:</b> J. Cacciotti, MBA, <i>Managing Director, SDG</i>  Jim Wilson, <i>Chairman, Corcept Pharmaceuticals</i></p> <p><b>Topics:</b></p> <ul style="list-style-type: none"> <li>• The pharmaceutical and biotech value chain</li> <li>• Threat to the traditional business models</li> <li>• New Business Models</li> </ul> <p><b>Read:</b></p> <ul style="list-style-type: none"> <li>• Alternative Medicine: A Big Drug Maker Moves to Play Down Mass-Market Pills.</li> <li>• Scaled Up: Biggest Drug Firm Faces Generic But Has an Edge, Its Very Bigness.</li> <li>• Roche Overhauls Way of Managing Biotech Partners.</li> <li>• Corcept Therapeutics Inc – Legg Mason Analyst Report.</li> <li>• Visit <a href="http://www.pfizer.com">www.pfizer.com</a> and <a href="http://www.roche.com">www.roche.com</a> and review the latest annual reports and latest SEC filings.</li> </ul> <p><b>Prepare:</b> Questions will be distributed prior to class.</p>

2/28	<p><b>Orphan Drugs and Global Health</b></p> <p><b>Topics:</b></p> <ul style="list-style-type: none"> <li>• Incentives for innovation when the market is small or the consumers' ability to pay is limited</li> <li>• Creating incentives when market solutions fail</li> <li>• The role of government and non-governmental organizations</li> </ul> <p><b>Read:</b></p> <ul style="list-style-type: none"> <li>• Genzyme: Engineering the Market for Orphan Drugs</li> <li>• Orphan Drug Act at 20: Big gains, some strains</li> <li>• IAVI Policy Brief – Incentives for Private Sector Development of an AIDS Vaccine</li> <li>• Additional reading on Bio Ventures for Global Health to be distributed prior to class</li> </ul> <p><b>Prepare:</b> Questions will be distributed prior to class.</p>
3/3	<p><b>Strategic Licensing between Pharma and Biotech</b></p> <p><b>Guests:</b> Chris Searcy, Pharm D., <i>Vice President Marketing and Corporate Development, Nektar Therapeutics, former director of Business Development, Pfizer</i>  Steve Hurst, <i>former General Counsel and Vice President of Business Development, Nektar Therapeutics</i></p> <p><b>Topics:</b></p> <ul style="list-style-type: none"> <li>• The buyer's and sellers perspective</li> <li>• Structuring the relationship for long-term success</li> <li>• Managing large company – small company relationships</li> </ul> <p><b>Read:</b></p> <ul style="list-style-type: none"> <li>• Inhale Therapeutics: Executing and Growing the Business Model</li> <li>• Reuters Business Insight. The Pharmaceutical Licensing Outlook 2002, Chapter 4 Pages 104-131</li> <li>• Background Notes on the Inhale – Pfizer negotiations.</li> </ul> <p><b>Prepare:</b> Each student will be assigned to a negotiation team representing either Inhale or Pfizer. Each team will be assigned a counter-team to negotiate with. The teams should meet to prepare for the negotiation, negotiate a deal, and create a written outline of the negotiated deal. Each team should submit the written outline along with a description of the analysis they pursued prior to the negotiation.</p> <p><b>Due [Team]:</b> Submit the written summary of the negotiated deal and a summary of the pre-negotiation analysis.</p>

3/7	<p><b>Biotech Business Models and Financing of New Ventures</b></p> <p><b>Guests:</b> Russell Howard, MD <i>CEO – Maxygen</i>  Bruce Cozad, <i>Executive Chairman – Jazz Pharmaceuticals</i>  Kurt von Emster, <i>General Partner – MPM Capital</i></p> <p><b>Topics:</b></p> <ul style="list-style-type: none"> <li>• Biotech Business Models: Platform-Based, Product-Based, Development-Based</li> <li>• Framework for Comparison of the Models</li> </ul> <p><b>Read:</b></p> <ul style="list-style-type: none"> <li>• Strategic Deal-making at Millenium Pharmaceuticals</li> <li>• Deconstructing de-risking, The Market Speaks: Research Pays</li> <li>• Jazz Pharmaceuticals: The Concept Bet, at a Whole New LevelDose of Reality.</li> <li>• Biotech’s Dismal Bottom Line: More than \$40 Billion in Losses.</li> </ul> <p><b>Prepare:</b> Questions will be distributed prior to class.</p>
3/10	<b>Course Summary</b>