

Economics of Biotechnology and Medical Innovations
Reading Guide: Hepatitis-C
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The readings for the module are ordered and organized to expose you to various writings in the scientific, healthcare, policy literature, and the public forum.

In class will discuss the broad picture related to Hep-C, medical condition, emergence of various innovations in treatment, Pharmasset and Gilead Sciences, pricing, benefits and costs, healthcare costs for patients and the system, insurance coverage, stock price effects, and related issues.

All readings for the Hep-C module are posted. In class, we will go over some of them in detail. Please start looking through the materials in the sequence they are posted. We will discuss several of them in detail, while others you will need to go over for additional details. Looking through the readings beforehand will make it much easier for you to follow the class lectures.

The readings for the module will take you some time to go over and be familiar with contents. It is very important that you start to look over them early.

Below is both a reading guide and potential questions (i.e., each item below could be framed as a question). This is not an exhaustive list but covers some of the main items.

1. Hep C and discovery. What are the typical causes. Brief scientific/biology details.
2. Nature of the “traditional” treatments for Hep C. Details on:
 - (i) Timeline of cure/treatment. Are these short-term or long-term.
 - (ii) Which firms/drugs provided the mainstay of treatments.
 - (iii) Approximate treatment costs, and whether these are short-term or long-term.
3. Characteristics that defined Sovaldi (and Harvoni) as the defining drugs in this area of therapy. Details on:
 - (i) Nature of innovation.
 - (ii) Timeline of cure/treatment. Are these short-term or long-term.
 - (iii) Approximate treatment costs, and whether these are short-term or long-term.
4. History of Pharmasset.
5. Acquisition of Pharmasset by Gilead. Acquisition cost. Risk-reward tradeoff.
6. Gilead’s costs to bring Sovaldi to market.
7. Harvoni, an improvement over Sovaldi. Initial treatment price in the US for Sovaldi and Harvoni. Timeline of treatment.

8. Revenue generated by Gilead from Sovaldi and Harvoni.
9. Initial projections about the total number of patients with Hep C in the US. Potential changes in projections over time.
10. Briefly describe, with examples and numbers, the magnitude of the cost problems faced by the US healthcare system by Sovaldi in the first 1-2 years of its introduction.
11. Did the initial cost problems created by Sovaldi for the US healthcare system change over subsequent years? If yes, what were the main reasons. Provide details, illustrative numbers and timeline.
12. All of the information considered, how would you assess the short-term and long-term costs and benefits of Sovaldi/Harvoni? Provide approximate numbers.
13. Lessons for US healthcare policy and insurance from the Hep-C example.
14. Sovaldi/Harvoni, monopoly period, entry by competitors, and stock market response.