

Evaluating costs and benefits of expanding access to comprehensive care for chronic hepatitis B infection

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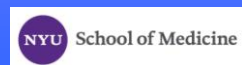


Presenter Disclosures

Sarah Post

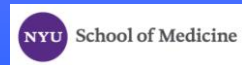
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No relationships to disclose



Background

- **Chronic hepatitis B (CHB) is a serious public health issue**
 - 1.5-2 million in US affected
 - <30% know status and only 5% receive treatment
 - 15-40% develop serious complications such as liver cancer, cirrhosis, disability and premature death
- **Newly improved treatments can prevent serious outcomes**
 - Evidence from clinical trials demonstrates that viral load can be suppressed for long periods of time and that the reduction of viral load can successfully slow progression of the disease
 - Monitoring for hepatocellular carcinoma (HCC) can improve survival
- **Lack of insurance limits access to appropriate disease management**
 - Many infected people have little or no insurance
 - Uninsured individuals can only access care once they are hospitalized or disabled
 - Treatment of CHB complications is very expensive and marginally effective

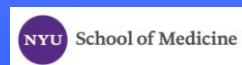


Questions

Could early-stage care improve health outcomes at a population level?

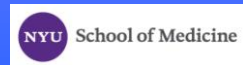
What costs and cost-effectiveness would be associated with expanding access to care?

How can appropriate treatment and care be made better available to those who lack health coverage?



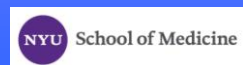
Objectives

1. Develop model to simulate health outcomes and costs of early access to HBV treatment
2. Evaluate short- and long-term cost-effectiveness of care and treatment
3. Apply results to different strategies for providing expanded care

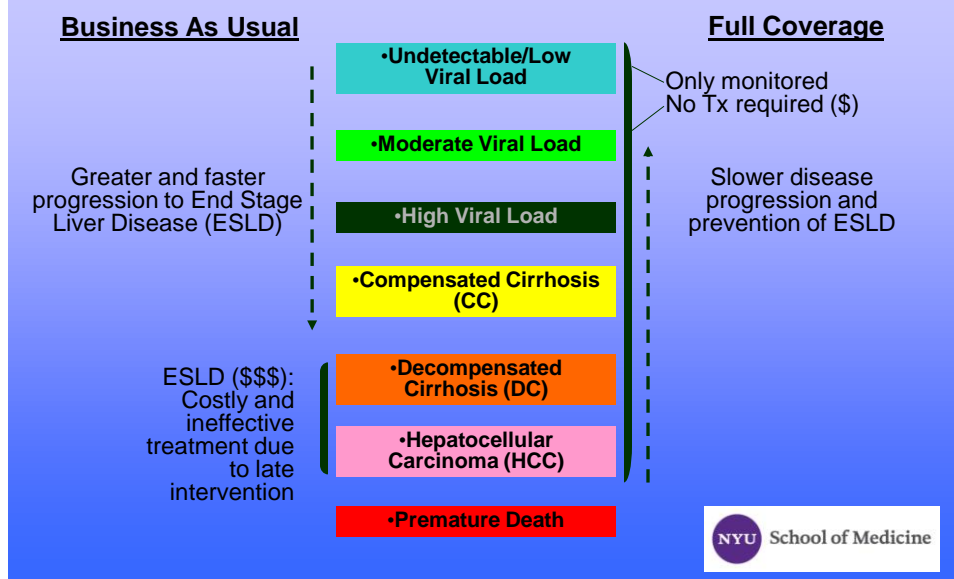


Objective 1: model development

- **Business As Usual (BAU)**
- Without insurance, little access to care even with CHB diagnosis
 - Access to Medicaid primarily through disability
 - Costly and ineffective treatment due to late intervention
- **Full Coverage**
 - Access to full spectrum of necessary monitoring and treatment
 - Hypothesis: early and effective treatment delays or halts disease; saves \$



Model overview



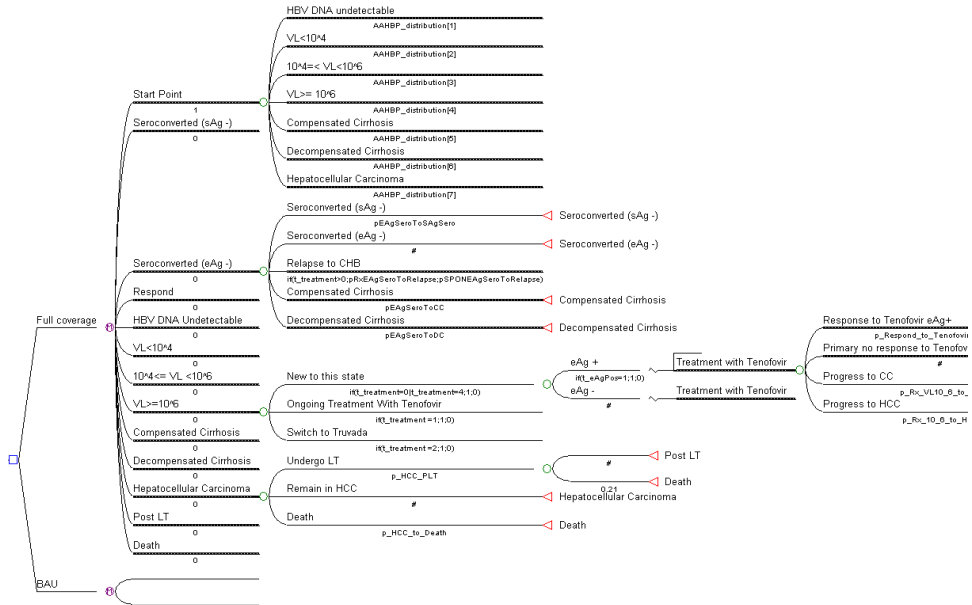
Model specifics

- Markov model developed in TreeAge Pro to compare scenarios
- Health state transitions assumed to occur at one-year intervals
- Model runs for 20 years

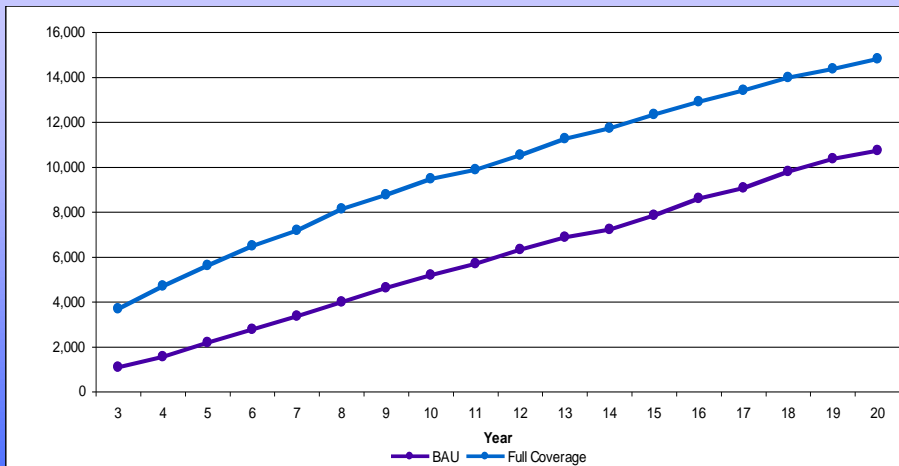
Assumptions

- Initial health states based on data from evaluation of HBV-infected persons identified through community screening
- Transition rates and outcomes based on HBV viral load levels from published data
- Treatment strategies for Full Coverage arm based on published guidelines
- Theoretical drug regimen based on current available treatments
- Costs based on current Medicaid reimbursement rates + publish

Model schematic (an example)

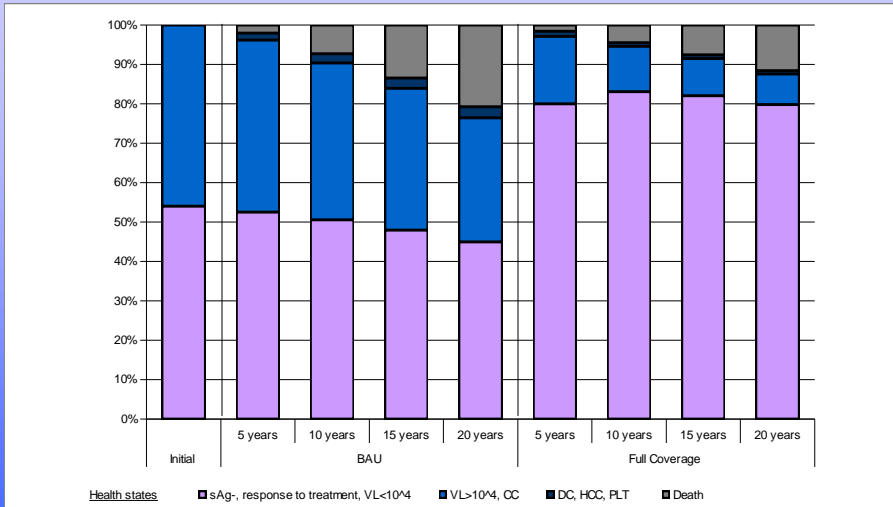


Results: Costs Cumulative cost per person



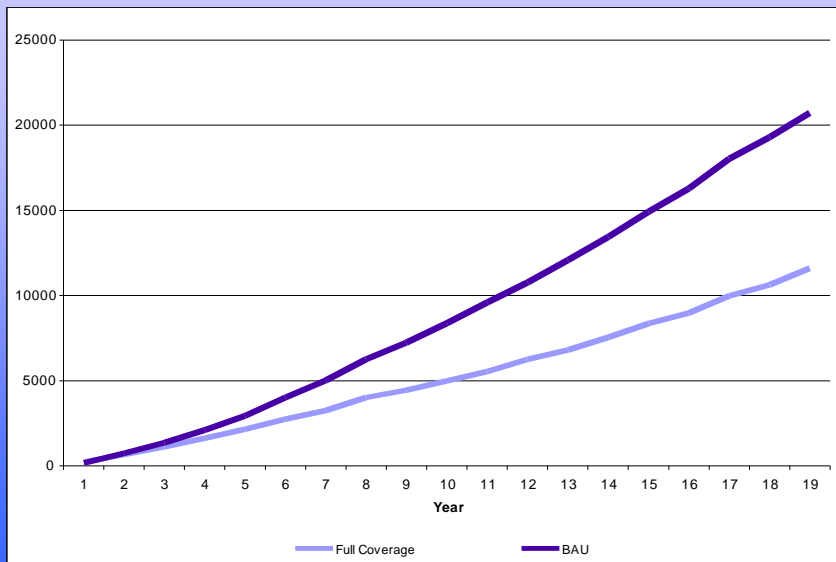
Results: Morbidity

Health state distributions



Results: Mortality

Cumulative deaths per 100,000



Objective 2: costs and cost-effectiveness

- Utility values (measure of quality of life) based on published surveys
- Incremental cost-effectiveness calculated by comparing total QALYs and costs of BAU and Full Coverage

Results: cost-effectiveness

Coverage is highly cost-effective!

Time horizon (years)	Additional benefit vs. BAU (QALYs gained per person)	Additional cost per person (\$)	Incremental cost-effectiveness ratio (\$ per QALY)
5	0.05	3,415	61,780
10	0.22	4,291	20,700
15	0.47	4,495	12,221
20	0.79	4,096	5,184

Objective 3: strategies for increasing access to care

- Medicaid 1115 disease specific eligibility waiver
 - Program must pay for itself (not incur any additional costs to Medicaid) within 5 year framework
- Expanded disease-specific entitlement similar to Breast and Cervical Cancer Act
- State-sponsored Medicaid HBV eligibility demonstration project
 - Both unlikely in current environment
- **Universal access:** most likely political solution
 - Most likely solution to increase access
 - *Acceptance of intervention recommendations likely dependent on comparative effectiveness analyses*

Conclusions

1. Early-stage treatment for CHB saves lives, decreases morbidity and is highly cost-effective.
2. The best strategy for improving access in the current political environment is providing universal coverage
3. Appropriate models of disease can be valuable policy assessment tools and support comparative effectiveness studies

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