



Feasibility of a Collaborative Loan from ESIC to AIIMS Delhi for Establishing a Proton Therapy Unit: An Initiative for Advanced Cancer Care in India

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ABSTRACT

India faces a rising burden of cancer, with advanced therapeutic options like proton therapy representing a potential breakthrough in treatment. However, access to such technologies remains limited due to high costs. The Employees' State Insurance Corporation (ESIC) manages significant financial resources aimed at improving healthcare services for millions of insured workers. This paper explores the feasibility and implications of a ₹500 crore loan from ESIC to All India Institute of Medical Sciences (AIIMS), Delhi, to establish a proton therapy unit. It proposes a structured collaboration that aligns with national healthcare objectives while enhancing access to advanced cancer treatments for insured beneficiaries. The paper discusses the legal, financial, and healthcare policy frameworks necessary to make such a collaboration viable.

Keywords

Proton therapy, ESIC, AIIMS Delhi, cancer treatment, healthcare collaboration, advanced cancer care, healthcare financing, public sector loan, radiation therapy

I. INTRODUCTION

Cancer is a leading cause of death globally, and in India, cancer incidence has been steadily rising. Conventional radiotherapy is widely used in cancer treatment, but advanced forms such as proton therapy offer higher precision, minimizing collateral damage to healthy tissues. Proton therapy, with its advantage of the Bragg peak, allows for maximal radiation dose delivery directly at the tumor site, making it particularly beneficial for treating cancers located in sensitive areas such as the brain, spine, and eyes.

In India, proton therapy is still in its nascent stage, with limited availability due to the high cost of equipment and infrastructure. AIIMS Delhi, one of India's premier medical institutes, has the potential to lead the way by establishing a proton therapy center, but funding remains a significant challenge.

The Employees' State Insurance Corporation (ESIC) operates a nationwide

healthcare system, providing medical benefits to insured workers and their families. With a robust financial base, ESIC can collaborate with other public institutions to improve healthcare access and infrastructure. This paper proposes the possibility of a ₹500 crore loan from ESIC to AIIMS Delhi to fund a proton therapy unit, improving access to advanced cancer treatments for ESIC beneficiaries and the public at large.

Rationale for Proton Therapy

Proton therapy is a type of radiation therapy that uses protons rather than X-rays to treat cancer. The major advantage of proton therapy is its ability to precisely control the radiation dose. While X-rays release energy along their path, protons can be manipulated to deposit their energy directly at the tumor site, thereby reducing damage to surrounding tissues.

Benefits of Proton Therapy:

- Precision: The Bragg peak effect of proton therapy allows for focused radiation, ideal for tumors located near critical structures.
- Fewer Side Effects: Reduced exposure to surrounding healthy tissues leads to fewer long-term side effects, especially important in pediatric patients.
- Improved Outcomes: Proton therapy is associated with improved survival and quality of life in patients with difficult-to-treat tumors.

AIIMS Delhi, a leader in healthcare and medical research, is an ideal location for India's next proton therapy center. However, establishing such a unit requires substantial investment, which can be met through innovative financing mechanisms such as a loan from ESIC.

Financial Capacity of ESIC

The Employees' State Insurance Corporation (ESIC) is a social security organization that provides healthcare services to millions of insured workers in India. As of 2023-2024, ESIC manages a budget of ₹22,000 crores, with significant portions allocated for healthcare infrastructure, medical facilities, and cash benefits.



Given its financial stability, ESIC has the potential to invest strategically in healthcare initiatives that align with its mandate to provide quality healthcare to insured persons.

By providing a ₹500 crore loan to AIIMS Delhi, ESIC can help establish a proton therapy unit that would benefit ESIC-insured patients while supporting the broader public healthcare system in India.

Legal and Policy Framework

The Employees' State Insurance Act, 1948, governs the operations of ESIC. Under this Act, ESIC has the authority to invest in healthcare infrastructure that benefits its insured population. While the primary mandate of ESIC is to provide direct healthcare services, the Act allows for flexibility in investments that promote public welfare.

A loan to AIIMS for establishing a proton therapy unit would require approval from the Ministry of Labour and Employment (which oversees ESIC) and the Ministry of Health and Family Welfare, ensuring alignment with the government's healthcare goals. Furthermore, collaboration between ESIC and AIIMS would need to meet the conditions of transparency, accountability, and operational efficiency, as prescribed by relevant government policies.

Operational Model

The proposed collaboration between ESIC and AIIMS would be structured as follows:

Loan Structure

- ESIC would provide AIIMS with a ₹500 crore loan, with terms including:
- Low-interest rate: To ensure affordable repayment by AIIMS.
- Repayment period: A long-term repayment plan over 10-15 years.
- Revenue-sharing model: AIIMS could allocate a portion of the revenue generated from treating non-ESIC patients to repay the loan.

Service Provision Agreement

As part of the agreement, AIIMS would offer discounted or priority access to proton therapy for ESIC-insured patients. This would ensure that ESIC beneficiaries gain access to the most advanced cancer treatments.

Healthcare Benefits

The collaboration would significantly improve healthcare access for ESIC-insured workers and their dependents, particularly in cases

requiring advanced cancer treatments. Proton therapy would be made available to patients who would otherwise have to seek costly treatment abroad. The AIIMS proton therapy unit would serve as a national hub for advanced oncology treatment and research.

Financial Viability

A detailed financial analysis indicates that the proton therapy unit at AIIMS would generate sufficient revenue to repay the loan over time. The unit could cater to a mix of private, government, and ESIC-insured patients, ensuring a steady income stream. Additionally, government subsidies for advanced cancer care could further enhance financial viability.

Challenges and Risk Mitigation

Challenges

1. Approval Delays: The loan and collaboration would need government approval, which may delay project initiation.
2. Financial Risks: AIIMS must ensure a sufficient patient inflow to sustain operations and repay the loan.

Risk Mitigation Strategies

1. Phased Implementation: The project could be implemented in phases, ensuring early operational success.
2. Financial Guarantees: ESIC and AIIMS could agree on financial guarantees to secure the loan's repayment in case of revenue shortfalls.

II. CONCLUSION

A ₹500 crore loan from ESIC to AIIMS Delhi to establish a proton therapy unit represents an innovative model of public sector collaboration. This initiative would not only enhance cancer care access for ESIC-insured patients but also improve the overall healthcare infrastructure in India. By leveraging ESIC's financial resources and AIIMS's medical expertise, India could make significant strides in offering advanced cancer treatments to its population.

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