

13th Current Issues Seminar on Health Care Insurance

Mumbai

02-August-2019

Impact of Modern Treatment Methods

Sumit Ramani

Consulting Actuary, Actuarial Consultants



Agenda



- Background –Modern Treatment Methods
- Overview – Modern Treatment Methods
- Impact Analysis Framework
- Impact Analysis Example
- Food for thought
- Conclusion
- Questions and Comments

Background – Modern Treatment Methods

Why talk about them now?

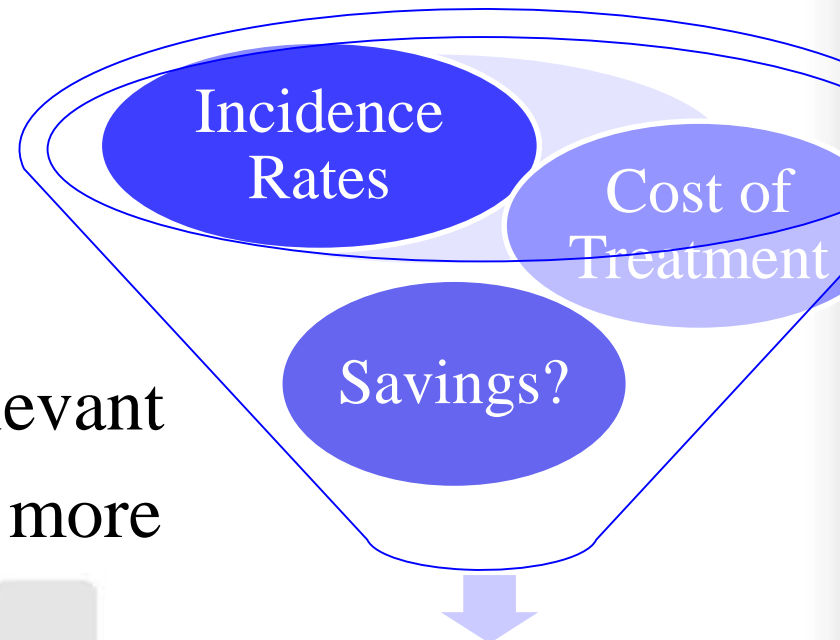


- Exposure Draft by IRDAI[^]
 - Issued on 16-May-2019
 - Coverage of 12 Modern Treatment Methods
 - Allows sub-limits for the treatments
 - In-patient, domiciliary hospitalization, day care

[^]*The Exposure draft is called “Exposure Draft on Guidelines on Standardization of Exclusions in Health Insurance Contracts and Modification Guidelines on Product Filing in Health Insurance”*

What does it imply?

- Re-price existing policies to include
 - additional cost of treatment
 - savings (if any) resulting from the treatment
- However,
 - the data is limited
 - the data is not-so-relevant
 - the future trends are more unpredictable



Vaporisation
of the
prostate

Uterine Artery
Embolization
and HIFU

Intra vitreal
injections

Immunotherapy

IONM

Overview – Modern Treatment Methods

Robotic
surgeries

Oral
chemotherapy

Bronchial
Thermoplasty

Balloon
Sinuplasty

Stereotactic
radio surgeries

Deep Brain
stimulation

Stem cell
therapy

Immunotherapy (1/2)

- **Biological therapy**
- **Helps immune system fight cancer**



- **Approved by FDA in 1990 for bladder cancer**
- **Treatment available for more a dozen types of cancer**



- **3 drugs approved by DCG for lung cancer**
- **Over 3000 patients treated**

Immunotherapy (2/2)



- 1) Fewer side effects
- 2) Cancer less likely to return
- 3) May work when other methods are less effective e.g. skin cancer

1) Bad reactions like itching & swelling

2) Side effects like flu & weight gain



₹

1) Average cost: 4L-8L

Robotic Surgery (1/2)

- Robo assisted surgery
- Magnification of 10X



- Approved by FDA in 2000
- Used for tumours, lung cancer, spine surgeries etc



- Over 500 surgical robots & 300 trained surgeons
- Estimated 700 robotic-assisted surgeries/month
- Already being covered

Robotic Surgery (2/2)



- 1) Smaller incisions; lesser trauma
- 2) Higher surgical accuracy
- 3) Reduced surgeon fatigue

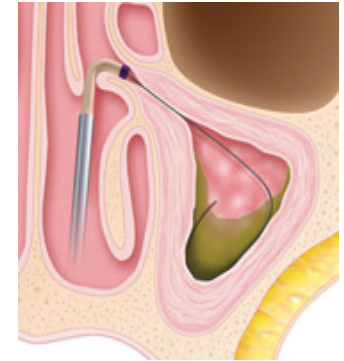
- 1) Expensive
- 2) Movement latency



- 1) Average cost: Existing cost + 1.5L
- 2) Equipment costs 10-15 crores

Balloon Sinuplasty (1/2)

- Endoscopic nasal surgery
- For treatment of sinus inflammation



- Approved by FDA in 2005



- Been around since 2009

Balloon Sinuplasty (2/2)



- 1) No cutting – less bleeding
- 2) Quick turnaround 4-5 days

- 1) Tissue damages – minor chances
- 2) Optical damage – very rare



- 1) Average cost: 1.5L – 2L

Deep Brain Stimulation(1/2)



- **Neurosurgical procedure**
- **Placement of neurostimulator**



- **Approved by FDA**
- **Parkinson's -1997**
- **Dystonia -2003**
- **OCD -2009**



- **Parkinson's -1998**
- **OCD -2010**

Deep Brain Stimulation(2/2)

Institute of Actuaries of India



- 1) Individualised treatment
- 2) No removal of nerve cells; decreased medication.

- 1) Infection, headache etc
- 2) Confusion, Stroke etc



- 1) Average cost: 6L to 20L for Parkinson's

Stem Cell Therapy(1/2)

- Use of stem cell to prevent and treat diseases
- Proposed to cover only bone marrow transplants



- Approved by FDA
- Been in practice for > 30 years



- Has been in practice since 2011 (or before)
- Already being covered

Stem Cell Therapy(2/2)



- 1) Can keep renewing themselves
- 2) Has diagnostic potential as well

- 1) Treatment durability - relapse
- 2) Can increase cancer risk



- 1) Average cost for bone marrow transplant: ~20L

Impact Analysis – Framework

Key Stakeholders - Internal

Actuarial

- Premium Calculation
- Risk identification & mitigation

Product Development

- Marketing material should appropriately reflect the change

Underwriting

- Should revise underwriting guidelines

Claims

- Should be onboarded to avoid rejection of legitimate claims

Key Stakeholders - Internal

Systems

- Update existing systems
- Premium rate changes

Training

- Training about the inclusion of new treatment method

Compliance

- Water-tight yet clear policy wordings

Sales

- Clear understanding of changes

Key Stakeholders - External



Regulator

- Share revised premiums, policy wordings and benefit design, if required

Reinsurer(s)

- Help in pricing – data / global practice
- Revise existing contracts

Care Provider

- Reimbursement model change
- Availability/inclusion of treatment

Customer

- Informed about contract changes
- Treated fairly

Eligible Population

- Those expected to get treatment from same condition/treatment method
- Those undertaking prevalent treatment option
- The choice of treatment method
 - Deep Brain Stimulation & Stem Cell Therapy for Parkinson's
- Filter by Selection Criteria
 - Age / Gender / Co-morbid conditions / severity levels

Estimate Frequency

- Past experience
- Industry players who have already implemented
- Research Papers / Publications
- Global market leaders' experience
- Reinsurers
- Insurance /Actuarial Consultants
- Medical Professionals

Estimate Severity

- Reinsurers
- Global market leader's experience
- Empaneled Hospitals
- Medical Professionals
- Analysis of hospital bills
- Cost of treatment overseas

Risks and Mitigation

Anti-selection

- Co-pay
- Sub-limits
- Defined selection criteria

Credibility of assumptions

- Fetch information from multiple sources
- Add risk margins

Triggers other ailments

- Medical experts
- Research publications

Risks and Mitigation

**Worsening over
medium-long
term**

- Monitor trends post treatment
- Competent authority approval

**Professional
Risk**

- Appropriate disclosure
- Apply independent judgement
- Build competence

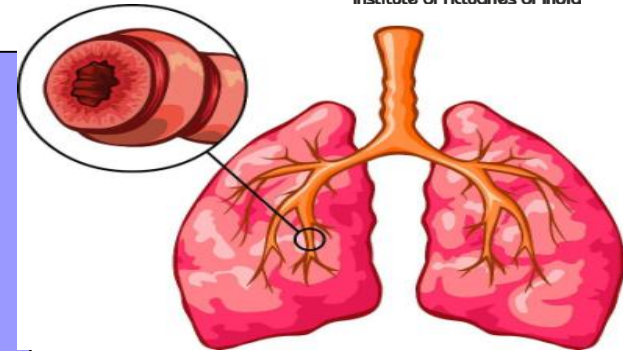
Unknown Risks

- Brainstorm / seek views
- Consult relevant experts

Impact Analysis – Example

Bronchial Thermoplasty(1/2)

- Heat treatment for airways
- Delivery of radiofrequency energy



- Approved by FDA in 2010
- Available in 32 countries; covered by insurers in the USA



- Started around 2018
- Over 20 patients we treated by mid 2018

Bronchial Thermoplasty(1/2)



- 1) Reduces frequency of drugs
- 2) Reduced asthma attacks

- 1) Might trigger bad asthma for a short period post treatment
- 2) Cough, wheezing & short breath



- 1) Average cost: 5L to 7.5L

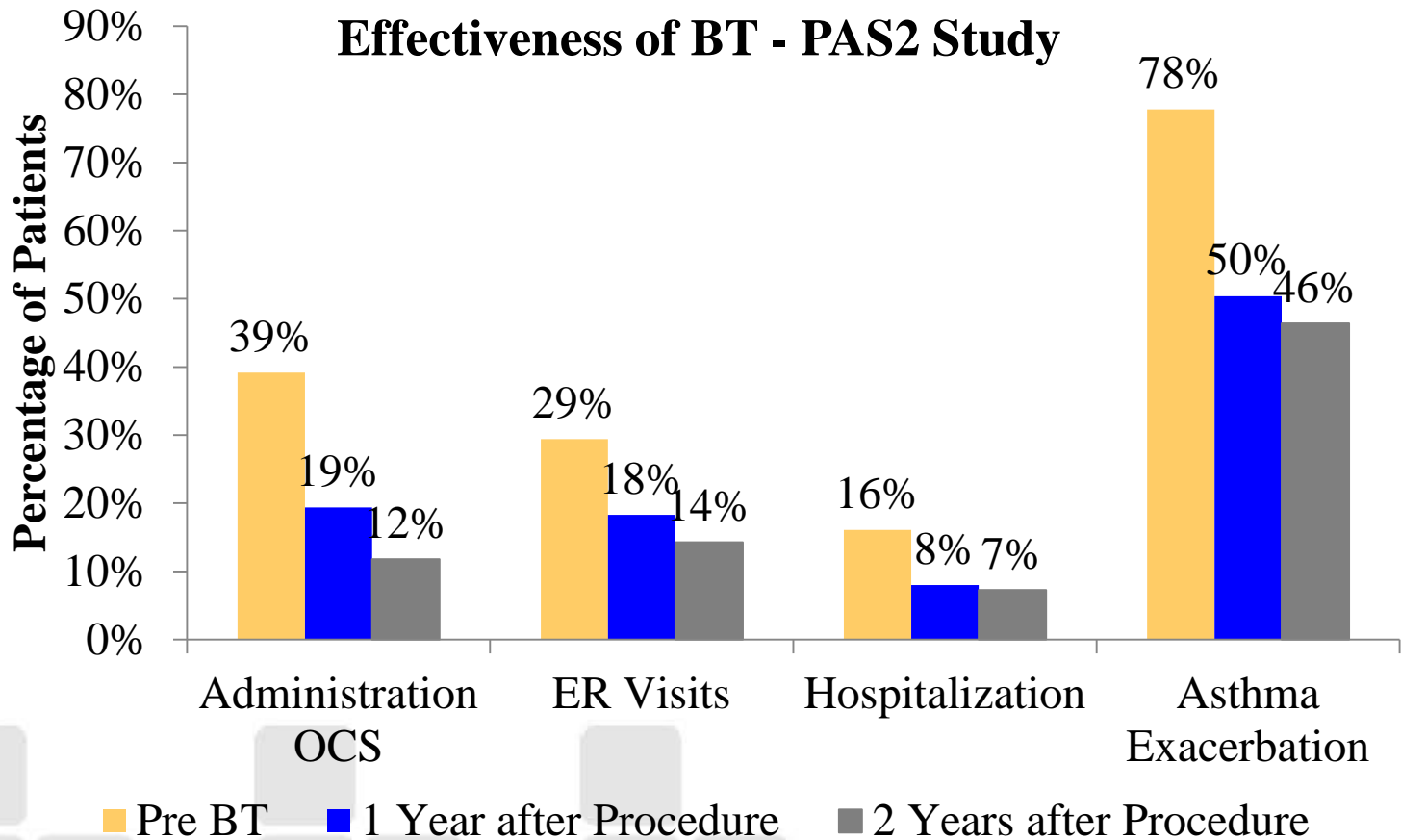
Risk Premium



Frequency and Severity – Impact of BT

Average Incidence Rate – All HI Claims	10%
Average Incidence Rate - Respiratory	7%
Average Incidence Rate - Asthma	14%
Severe Persistent Asthma patients	4%
Eligible Population to be covered (≥ 18 yrs)	55%
Severity – BT Claims (INR)	600,000
Risk Premium – BT (INR)	12
Allowing for Reduced ER visits, exacerbations and Hospitalizations	Would Show savings

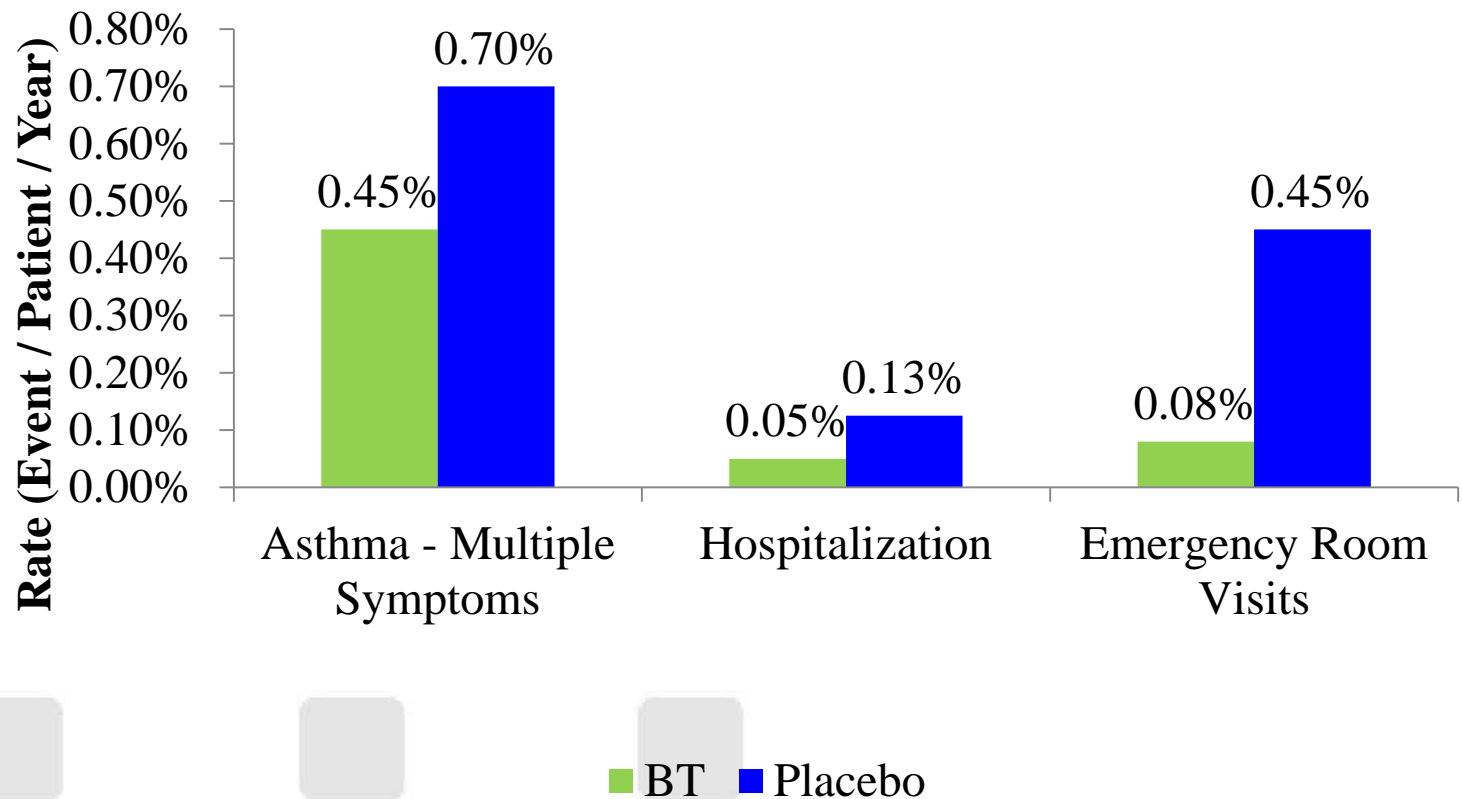
Frequency: Effectiveness of BT



Frequency: Effectiveness of BT



Effectiveness of BT - AIR2 Trial



Risk Premium



Savings due to BT

Risk Premium – BT (INR)	12
Original Average Claim Cost (INR)	1.5 lakhs-3.5lakhs
Average Claim Cost (Reducing Hospitalization by 50%) /Event /Year^	0.75 lakhs– 1.75lakhs
Reduction in premium (Savings * Asthma Incidence * Eligible population)	
Risk Premium Reduction (INR) – Per Annum	INR 1.7 to 4.0

Other Considerations



- 20 patients have undergone BT
- Less than 10 hospital (across India) are equipped for BT
- Little over 100 Interventional Pulmonologist (across India)
- The huge set-up cost.
- Change in take-up rate post insurance cover

^ The above numbers are as of June 2018

Food for thought

Food for thought!

- For some treatments, there are only a handful of doctors and hospital thus limiting the number of patients who can get treated. Is this fair from risk pooling perspective?
- For some treatments like Deep Brain Stimulation, the number of ailments covered is increasing with time. When we price today, do we factor them now? If yes, how?

Conclusion

Key Takeaways!



- The existing products need to be re-priced with limited amount of data
- Multiple stakeholders need to be on boarded
- The qualitative factors could have a bigger impact on pricing
- The exercise needs utilizing treatment related data, research work and other studies for
 - *Understanding the intricacies involved*
 - *Assessing cost (including savings) of including such option(s)*
 - *Bringing pros and cons on table*

Questions and Comments!

sumit@actuaria.in

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