



# Brian Lamb: Cochlear Implant, a cost-effective technology, but.....

- Brian was head of Advocacy and Policy at the Royal National Institute for Deaf People, UK and now chairs the Hearing Loss and Deafness Alliance and the Adult CI Cochlear Implant Action Group.
- Brian is CIICA's Advisor on Strategy, Advocacy and Public Policy driving forward the group to change CI provision globally.

**Implant is one of the most successful of all neural prostheses developed to date”  
(World Hearing Report, P100)**

**Cochlear Implant – a cost-effective technology.....**

**But...**

- Globally, it is estimated that only one in twenty who could benefit from cochlear implants have one. (*Raine 2013, 2016, et al.,*)
- We know that take up of CI’s and investment in them in many high, medium and low income countries is low. (*World Report on Hearing 2021*)
- What role does the perception of cost play?

## Cochlear Implants are often perceived as expensive

- “in privately funded systems financial incentives for non-CI providers **“weigh in favor of recommending continued HA use over CIs.”**
- “Despite compelling clinical data, without up-to-date cost-effectiveness evidence, **financial justification is challenging and may be an important barrier to CI utilization.”**

*(Economics of Cochlear Implant Utilization. By Mark E. Votruba et al., The Hearing Journal October 2019.)*

But.....

- “Innovative life-long CIs could achieve significant savings per case that could finance additional implant cost.”

*(Christin Thum et L., Lifetime Cost of Unilateral Cochlear Implants in Adults: A Monte Carlo Simulation DOI: Eur J Health Econ. 2020 Apr 24. doi: 10.1007/s10198-020-01188-7)*



## Evidence also shows that Cochlear Implantation Saves Money

*Neve et al., 2021 Cost-benefit Analysis of Cochlear Implants: A Societal Perspective. found that:*

- **“the total benefits of CI exceeded the total cost, leading to a net benefit of CI.”**
- For prelingually deaf children with a bilateral CI there was a lifetime positive outcome net benefit of €433,000.
- Adults and seniors with progressive profound hearing loss and a unilateral CI had a total net benefit of €275,000 and €76,000, respectively.
- Based on the author’s estimates from modelling, **“the increased healthcare costs due to CI were more than compensated by the value of the health benefits and by savings in educational and productivity costs. In particular, for children and working adults, the societal benefit was positive even without taking health benefits into account. Therefore, CI generates an advantage for both patients and society.”**

# WORLD REPORT ON HEARING

## Cochlear Implants save money

- “Early rehabilitation along with use of hearing devices such as **cochlear implants are also cost-effective, despite large costs associated with initial technology investments.**” (*The Lancet, Global Burden of Disease, March 2021*)
- “With unilateral cochlear implants, estimations based on actual costs in a high-income setting showed a **return of 2.59 International dollars for every 1 dollar invested**, ..... In the example of a **lower-middle-income setting, the return on investment ratio was 1.46 International dollars** .....For an **upper-middle-income setting, the return on investment ratio was estimated to be 4.09 International dollars**.....”

*(World Report on Hearing, page 104)*



Surgical procedure	ICER, SEK/QALY	Cost effective? <sup>4</sup>
Shunt surgery for idiopathic normal pressure hydrocephalus <sup>5</sup>	80 600	Low cost
Unilateral cochlear implant <sup>3</sup>	140 474	Moderate cost
Knee replacement <sup>6</sup>	150 454	Moderate cost
Flash Glucose Monitoring System for Patients with Type 1 Diabetes Receiving Intensive Insulin Treatment <sup>7</sup>	291 130	Moderate cost
Unilateral hip replacement <sup>8</sup>	337 083	Moderate cost
Transfemoral amputation <sup>9</sup>	868 479	High cost

Cost effectiveness compared in Sweden

- Gumbieet al. BMC Health Services Research (2021) <https://doi.org/10.1186/s12913-021-06271-0>

# CI Compared with Knee Replacement Surgery



- 140 474 SEK/QALY
- Average age: 61 years
- Surgeries/year: 600

ICER  
=



- 150 454 SEK/QALY
- Average age 68,8 years
- Surgeries/year: 46 000

# CI compared with hip replacement Surgery



- 140 474 SEK/QALY
- Average age: 61 y
- Surgeries/year: 600

ICER  
=



- 337 083 SEK/ QALY
- Average age : ♂67,6 y ♀70,1 y
- Surgeries/year: 50 500



**“Unilateral cochlear implantation in adults is cost-effective** when compared with no implant or no intervention at all and is associated with increased employment and income”.

*(Buchman, et al., Unilateral Cochlear Implants for Severe, Profound, or Moderate Sloping to Profound Bilateral Sensorineural Hearing Loss. A Systematic Review and Consensus Statements. 2020)*

# Spend to save campaign had already shown this...

- The cost of **not** managing hearing loss is £30bn (37bn euros) per year in the UK.
- If we spend money on hearing loss then we improve lives and save society money.
- Spend to Save: in 17 languages:
- [www.ciicanet.org](http://www.ciicanet.org)
- [www.eurociu.eu](http://www.eurociu.eu)



## Cost implications for changing candidacy or access to service within a publicly funded healthcare system?

Ciaran O'Neill, Brian Lamb & Sue Archbold

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## The Real Cost of Adult Hearing Loss: reducing its impact by increasing access to the latest hearing technologies.

Sue Archbold PhD, Brian Lamb CBE, Ciaran O'Neill PhD, John Atkins MBA

Report and research supported by an educational grant from Cochlear. The report is the work of the authors. The Ear Foundation®

## Spend2Save/Investieren um zu sparen: Investition in Hörtechnik verbessert die Lebensqualität und spart öffentliche Gelder

ZUSAMMENFASSUNG

The cover of the report features a close-up photograph of a person's ear. The text on the cover includes the title in German, a subtitle 'Hörverlust bei Erwachsenen: Europas wachsende Herausforderung', and a list of key findings in German. A quote from the report is also visible: '... ist, verliert das Gehör wenigstens die Welt nicht mehr unter laute, soziale Sirenen. Dann sind es, was Taubheit mit der macht.' Another quote says: 'Nur gesellschaftliches Leben, Gebürde der Isolation, Frustration, Unfähigkeit, mit der Familie in Kontakt zu treten.' A final quote states: 'Das war ziemlich erschreckend, los wurde es, das, dass ich nicht mehr richtig arbeiten konnte.'



the average additional cost per hearing impaired person is approximately £242 per annum and the additional total healthcare cost for the EU28 approximately £15.6 billion.

Country	Population	Population with ≥25DBHL BE	Additional Healthcare cost per person	Additional Health care Cost (£) Millions
Germany	82182000	10674487	849	8726.40
Sweden	9851017	1228102	178	217.71
Netherlands	16979120	2140727	162	346.80
Spain	46438422	5882388	115	674.17
Italy	60865551	7736071	237	1833.45
Denmark	5707251	718657	-93	-66.84
Belgium	11359351	1386089	245	342.89
Czech Republic	10503651	1386089	326	445.35
Slovenia	2063371	26537.1	239	63.46


Providing the best hearing care means lower costs on other care services

**Spend to save:**  
Investing in hearing technology improves lives and saves society money

A EUROPE WIDE STRATEGY

Brian Lamb OBE, Sue Archbold PhD, Ciaran O'Neill

Report and research supported by an additional grant from Cochlear. The report is the work of the authors.



The Ear Foundation®

# Elephant in the Room-Money!

We often talk about CI's as an expensive solution...this leaves everyone thinking it is!

But it costs **more not to take action** to address hearing loss.

Better provision of Ear and Hearing Care and take up of CIs is the solution so that health, social and benefits systems can improve lives and save money.

We need to change the story from the costs of CI to savings of CI

