

## Report on Baseline study of the situation of cochlear implants therapy, with focus on the supporting strategies and resources for the vocational training of the SLP, in partners countries (RO, BE, PT, NL)

### COUNTRY REPORT THE NETHERLANDS

#### 1. Collection of statistical data

| Indicator   | Value                                  | Source  |             |  |  |                    |                        |  |                    |                        |                                       |                           |            |        |        |        |        |       |            |                            |            |        |        |        |        |       |            |                         |            |        |        |        |        |     |            |                         |            |        |        |       |       |        |            |                       |            |        |        |       |       |       |            |                        |            |        |        |        |        |       |            |                        |            |        |        |        |        |       |            |                            |            |        |        |        |        |        |            |                             |            |        |        |        |        |        |            |                           |            |        |        |        |        |       |            |                            |            |        |        |        |        |       |            |                            |            |        |        |        |        |    |            |                   |            |         |         |         |         |   |        |            |
|---|--|---|-------------|--|--|--------------------|------------------------|--|--------------------|------------------------|---------------------------------------|---------------------------|------------|--------|--------|--------|--------|-------|------------|----------------------------|------------|--------|--------|--------|--------|-------|------------|-------------------------|------------|--------|--------|--------|--------|-----|------------|-------------------------|------------|--------|--------|-------|-------|--------|------------|-----------------------|------------|--------|--------|-------|-------|-------|------------|------------------------|------------|--------|--------|--------|--------|-------|------------|------------------------|------------|--------|--------|--------|--------|-------|------------|----------------------------|------------|--------|--------|--------|--------|--------|------------|-----------------------------|------------|--------|--------|--------|--------|--------|------------|---------------------------|------------|--------|--------|--------|--------|-------|------------|----------------------------|------------|--------|--------|--------|--------|-------|------------|----------------------------|------------|--------|--------|--------|--------|----|------------|-------------------|------------|---------|---------|---------|---------|---|--------|------------|
| Number of population<br>(December 2020 Netherlands)     | 17 474 693                             | <p><a href="https://www.cbs.nl/nl-nl/visualisaties/bevolkingsteller">https://www.cbs.nl/nl-nl/visualisaties/bevolkingsteller</a> (25-02-2020)</p> <p>Bevolkingsontwikkeling; maand en jaar</p> <p>Gewijzigd op: 29 januari 2021</p> <p>Variabelen kunnen geslept worden naar de kop, rijen of kolommen van de tabel. In de kop is maar één item van een variabele te selecteren.</p> <table border="1"> <thead> <tr> <th>Periodes</th> <th>Bevolking aan het begin van de periode</th> <th>Levend geboren kinderen</th> <th>Overledenen</th> <th>Immigratie</th> <th>Emigratie inclusief administratieve c...</th> <th>Overige correcties</th> <th>Totale bevolkingsgroei</th> <th>Bevolking aan het eind van de periode</th> </tr> </thead> <tbody> <tr> <td>2020 januari<sup>1</sup></td> <td>17 407 585</td> <td>14 015</td> <td>14 120</td> <td>22 081</td> <td>15 745</td> <td>6 235</td> <td>17 413 818</td> </tr> <tr> <td>2020 februari<sup>1</sup></td> <td>17 415 818</td> <td>12 866</td> <td>12 872</td> <td>21 320</td> <td>12 140</td> <td>9 174</td> <td>17 422 992</td> </tr> <tr> <td>2020 maart<sup>1</sup></td> <td>17 422 992</td> <td>13 498</td> <td>16 202</td> <td>15 740</td> <td>12 910</td> <td>126</td> <td>17 425 118</td> </tr> <tr> <td>2020 april<sup>1</sup></td> <td>17 425 118</td> <td>13 522</td> <td>18 854</td> <td>9 357</td> <td>9 446</td> <td>-5 641</td> <td>17 417 477</td> </tr> <tr> <td>2020 mei<sup>1</sup></td> <td>17 417 477</td> <td>13 731</td> <td>12 616</td> <td>8 981</td> <td>8 765</td> <td>1 331</td> <td>17 418 808</td> </tr> <tr> <td>2020 juni<sup>1</sup></td> <td>17 418 808</td> <td>13 894</td> <td>11 486</td> <td>12 659</td> <td>11 397</td> <td>3 670</td> <td>17 422 478</td> </tr> <tr> <td>2020 juli<sup>1</sup></td> <td>17 422 478</td> <td>15 572</td> <td>11 615</td> <td>17 782</td> <td>16 411</td> <td>5 328</td> <td>17 427 806</td> </tr> <tr> <td>2020 augustus<sup>1</sup></td> <td>17 427 806</td> <td>15 065</td> <td>12 533</td> <td>25 886</td> <td>15 545</td> <td>12 873</td> <td>17 440 679</td> </tr> <tr> <td>2020 september<sup>1</sup></td> <td>17 440 679</td> <td>14 914</td> <td>11 921</td> <td>30 646</td> <td>12 775</td> <td>20 864</td> <td>17 461 543</td> </tr> <tr> <td>2020 oktober<sup>1</sup></td> <td>17 461 543</td> <td>14 450</td> <td>14 603</td> <td>20 869</td> <td>12 624</td> <td>8 092</td> <td>17 469 635</td> </tr> <tr> <td>2020 november<sup>1</sup></td> <td>17 469 635</td> <td>13 512</td> <td>14 914</td> <td>17 762</td> <td>11 318</td> <td>5 042</td> <td>17 474 677</td> </tr> <tr> <td>2020 december<sup>1</sup></td> <td>17 474 677</td> <td>13 227</td> <td>16 801</td> <td>16 187</td> <td>12 597</td> <td>16</td> <td>17 474 693</td> </tr> <tr> <td>2020<sup>1</sup></td> <td>17 407 585</td> <td>168 066</td> <td>168 537</td> <td>219 250</td> <td>151 671</td> <td>0</td> <td>67 108</td> <td>17 474 693</td> </tr> </tbody> </table> <p>Bron: CBS</p>                                     | Periodes    | Bevolking aan het begin van de periode | Levend geboren kinderen                  | Overledenen        | Immigratie             | Emigratie inclusief administratieve c... | Overige correcties | Totale bevolkingsgroei | Bevolking aan het eind van de periode | 2020 januari <sup>1</sup> | 17 407 585 | 14 015 | 14 120 | 22 081 | 15 745 | 6 235 | 17 413 818 | 2020 februari <sup>1</sup> | 17 415 818 | 12 866 | 12 872 | 21 320 | 12 140 | 9 174 | 17 422 992 | 2020 maart <sup>1</sup> | 17 422 992 | 13 498 | 16 202 | 15 740 | 12 910 | 126 | 17 425 118 | 2020 april <sup>1</sup> | 17 425 118 | 13 522 | 18 854 | 9 357 | 9 446 | -5 641 | 17 417 477 | 2020 mei <sup>1</sup> | 17 417 477 | 13 731 | 12 616 | 8 981 | 8 765 | 1 331 | 17 418 808 | 2020 juni <sup>1</sup> | 17 418 808 | 13 894 | 11 486 | 12 659 | 11 397 | 3 670 | 17 422 478 | 2020 juli <sup>1</sup> | 17 422 478 | 15 572 | 11 615 | 17 782 | 16 411 | 5 328 | 17 427 806 | 2020 augustus <sup>1</sup> | 17 427 806 | 15 065 | 12 533 | 25 886 | 15 545 | 12 873 | 17 440 679 | 2020 september <sup>1</sup> | 17 440 679 | 14 914 | 11 921 | 30 646 | 12 775 | 20 864 | 17 461 543 | 2020 oktober <sup>1</sup> | 17 461 543 | 14 450 | 14 603 | 20 869 | 12 624 | 8 092 | 17 469 635 | 2020 november <sup>1</sup> | 17 469 635 | 13 512 | 14 914 | 17 762 | 11 318 | 5 042 | 17 474 677 | 2020 december <sup>1</sup> | 17 474 677 | 13 227 | 16 801 | 16 187 | 12 597 | 16 | 17 474 693 | 2020 <sup>1</sup> | 17 407 585 | 168 066 | 168 537 | 219 250 | 151 671 | 0 | 67 108 | 17 474 693 |
| Periodes  | Bevolking aan het begin van de periode | Levend geboren kinderen   | Overledenen | Immigratie                             | Emigratie inclusief administratieve c... | Overige correcties | Totale bevolkingsgroei | Bevolking aan het eind van de periode    |                    |                        |                                       |                           |            |        |        |        |        |       |            |                            |            |        |        |        |        |       |            |                         |            |        |        |        |        |     |            |                         |            |        |        |       |       |        |            |                       |            |        |        |       |       |       |            |                        |            |        |        |        |        |       |            |                        |            |        |        |        |        |       |            |                            |            |        |        |        |        |        |            |                             |            |        |        |        |        |        |            |                           |            |        |        |        |        |       |            |                            |            |        |        |        |        |       |            |                            |            |        |        |        |        |    |            |                   |            |         |         |         |         |   |        |            |
| 2020 januari <sup>1</sup>                               | 17 407 585                             | 14 015  | 14 120      | 22 081                                 | 15 745                                   | 6 235              | 17 413 818             |  |                    |                        |                                       |                           |            |        |        |        |        |       |            |                            |            |        |        |        |        |       |            |                         |            |        |        |        |        |     |            |                         |            |        |        |       |       |        |            |                       |            |        |        |       |       |       |            |                        |            |        |        |        |        |       |            |                        |            |        |        |        |        |       |            |                            |            |        |        |        |        |        |            |                             |            |        |        |        |        |        |            |                           |            |        |        |        |        |       |            |                            |            |        |        |        |        |       |            |                            |            |        |        |        |        |    |            |                   |            |         |         |         |         |   |        |            |
| 2020 februari <sup>1</sup>                              | 17 415 818                             | 12 866  | 12 872      | 21 320                                 | 12 140                                   | 9 174              | 17 422 992             |  |                    |                        |                                       |                           |            |        |        |        |        |       |            |                            |            |        |        |        |        |       |            |                         |            |        |        |        |        |     |            |                         |            |        |        |       |       |        |            |                       |            |        |        |       |       |       |            |                        |            |        |        |        |        |       |            |                        |            |        |        |        |        |       |            |                            |            |        |        |        |        |        |            |                             |            |        |        |        |        |        |            |                           |            |        |        |        |        |       |            |                            |            |        |        |        |        |       |            |                            |            |        |        |        |        |    |            |                   |            |         |         |         |         |   |        |            |
| 2020 maart <sup>1</sup>                                 | 17 422 992                             | 13 498  | 16 202      | 15 740                                 | 12 910                                   | 126                | 17 425 118             |  |                    |                        |                                       |                           |            |        |        |        |        |       |            |                            |            |        |        |        |        |       |            |                         |            |        |        |        |        |     |            |                         |            |        |        |       |       |        |            |                       |            |        |        |       |       |       |            |                        |            |        |        |        |        |       |            |                        |            |        |        |        |        |       |            |                            |            |        |        |        |        |        |            |                             |            |        |        |        |        |        |            |                           |            |        |        |        |        |       |            |                            |            |        |        |        |        |       |            |                            |            |        |        |        |        |    |            |                   |            |         |         |         |         |   |        |            |
| 2020 april <sup>1</sup>                                 | 17 425 118                             | 13 522  | 18 854      | 9 357                                  | 9 446                                    | -5 641             | 17 417 477             |  |                    |                        |                                       |                           |            |        |        |        |        |       |            |                            |            |        |        |        |        |       |            |                         |            |        |        |        |        |     |            |                         |            |        |        |       |       |        |            |                       |            |        |        |       |       |       |            |                        |            |        |        |        |        |       |            |                        |            |        |        |        |        |       |            |                            |            |        |        |        |        |        |            |                             |            |        |        |        |        |        |            |                           |            |        |        |        |        |       |            |                            |            |        |        |        |        |       |            |                            |            |        |        |        |        |    |            |                   |            |         |         |         |         |   |        |            |
| 2020 mei <sup>1</sup>                                   | 17 417 477                             | 13 731  | 12 616      | 8 981                                  | 8 765                                    | 1 331              | 17 418 808             |  |                    |                        |                                       |                           |            |        |        |        |        |       |            |                            |            |        |        |        |        |       |            |                         |            |        |        |        |        |     |            |                         |            |        |        |       |       |        |            |                       |            |        |        |       |       |       |            |                        |            |        |        |        |        |       |            |                        |            |        |        |        |        |       |            |                            |            |        |        |        |        |        |            |                             |            |        |        |        |        |        |            |                           |            |        |        |        |        |       |            |                            |            |        |        |        |        |       |            |                            |            |        |        |        |        |    |            |                   |            |         |         |         |         |   |        |            |
| 2020 juni <sup>1</sup>                                  | 17 418 808                             | 13 894  | 11 486      | 12 659                                 | 11 397                                   | 3 670              | 17 422 478             |  |                    |                        |                                       |                           |            |        |        |        |        |       |            |                            |            |        |        |        |        |       |            |                         |            |        |        |        |        |     |            |                         |            |        |        |       |       |        |            |                       |            |        |        |       |       |       |            |                        |            |        |        |        |        |       |            |                        |            |        |        |        |        |       |            |                            |            |        |        |        |        |        |            |                             |            |        |        |        |        |        |            |                           |            |        |        |        |        |       |            |                            |            |        |        |        |        |       |            |                            |            |        |        |        |        |    |            |                   |            |         |         |         |         |   |        |            |
| 2020 juli <sup>1</sup>                                  | 17 422 478                             | 15 572  | 11 615      | 17 782                                 | 16 411                                   | 5 328              | 17 427 806             |  |                    |                        |                                       |                           |            |        |        |        |        |       |            |                            |            |        |        |        |        |       |            |                         |            |        |        |        |        |     |            |                         |            |        |        |       |       |        |            |                       |            |        |        |       |       |       |            |                        |            |        |        |        |        |       |            |                        |            |        |        |        |        |       |            |                            |            |        |        |        |        |        |            |                             |            |        |        |        |        |        |            |                           |            |        |        |        |        |       |            |                            |            |        |        |        |        |       |            |                            |            |        |        |        |        |    |            |                   |            |         |         |         |         |   |        |            |
| 2020 augustus <sup>1</sup>                              | 17 427 806                             | 15 065  | 12 533      | 25 886                                 | 15 545                                   | 12 873             | 17 440 679             |  |                    |                        |                                       |                           |            |        |        |        |        |       |            |                            |            |        |        |        |        |       |            |                         |            |        |        |        |        |     |            |                         |            |        |        |       |       |        |            |                       |            |        |        |       |       |       |            |                        |            |        |        |        |        |       |            |                        |            |        |        |        |        |       |            |                            |            |        |        |        |        |        |            |                             |            |        |        |        |        |        |            |                           |            |        |        |        |        |       |            |                            |            |        |        |        |        |       |            |                            |            |        |        |        |        |    |            |                   |            |         |         |         |         |   |        |            |
| 2020 september <sup>1</sup>                             | 17 440 679                             | 14 914  | 11 921      | 30 646                                 | 12 775                                   | 20 864             | 17 461 543             |  |                    |                        |                                       |                           |            |        |        |        |        |       |            |                            |            |        |        |        |        |       |            |                         |            |        |        |        |        |     |            |                         |            |        |        |       |       |        |            |                       |            |        |        |       |       |       |            |                        |            |        |        |        |        |       |            |                        |            |        |        |        |        |       |            |                            |            |        |        |        |        |        |            |                             |            |        |        |        |        |        |            |                           |            |        |        |        |        |       |            |                            |            |        |        |        |        |       |            |                            |            |        |        |        |        |    |            |                   |            |         |         |         |         |   |        |            |
| 2020 oktober <sup>1</sup>                               | 17 461 543                             | 14 450  | 14 603      | 20 869                                 | 12 624                                   | 8 092              | 17 469 635             |  |                    |                        |                                       |                           |            |        |        |        |        |       |            |                            |            |        |        |        |        |       |            |                         |            |        |        |        |        |     |            |                         |            |        |        |       |       |        |            |                       |            |        |        |       |       |       |            |                        |            |        |        |        |        |       |            |                        |            |        |        |        |        |       |            |                            |            |        |        |        |        |        |            |                             |            |        |        |        |        |        |            |                           |            |        |        |        |        |       |            |                            |            |        |        |        |        |       |            |                            |            |        |        |        |        |    |            |                   |            |         |         |         |         |   |        |            |
| 2020 november <sup>1</sup>                              | 17 469 635                             | 13 512  | 14 914      | 17 762                                 | 11 318                                   | 5 042              | 17 474 677             |  |                    |                        |                                       |                           |            |        |        |        |        |       |            |                            |            |        |        |        |        |       |            |                         |            |        |        |        |        |     |            |                         |            |        |        |       |       |        |            |                       |            |        |        |       |       |       |            |                        |            |        |        |        |        |       |            |                        |            |        |        |        |        |       |            |                            |            |        |        |        |        |        |            |                             |            |        |        |        |        |        |            |                           |            |        |        |        |        |       |            |                            |            |        |        |        |        |       |            |                            |            |        |        |        |        |    |            |                   |            |         |         |         |         |   |        |            |
| 2020 december <sup>1</sup>                              | 17 474 677                             | 13 227  | 16 801      | 16 187                                 | 12 597                                   | 16                 | 17 474 693             |  |                    |                        |                                       |                           |            |        |        |        |        |       |            |                            |            |        |        |        |        |       |            |                         |            |        |        |        |        |     |            |                         |            |        |        |       |       |        |            |                       |            |        |        |       |       |       |            |                        |            |        |        |        |        |       |            |                        |            |        |        |        |        |       |            |                            |            |        |        |        |        |        |            |                             |            |        |        |        |        |        |            |                           |            |        |        |        |        |       |            |                            |            |        |        |        |        |       |            |                            |            |        |        |        |        |    |            |                   |            |         |         |         |         |   |        |            |
| 2020 <sup>1</sup>                                       | 17 407 585                             | 168 066   | 168 537     | 219 250                                | 151 671                                  | 0                  | 67 108                 | 17 474 693                               |                    |                        |                                       |                           |            |        |        |        |        |       |            |                            |            |        |        |        |        |       |            |                         |            |        |        |        |        |     |            |                         |            |        |        |       |       |        |            |                       |            |        |        |       |       |       |            |                        |            |        |        |        |        |       |            |                        |            |        |        |        |        |       |            |                            |            |        |        |        |        |        |            |                             |            |        |        |        |        |        |            |                           |            |        |        |        |        |       |            |                            |            |        |        |        |        |       |            |                            |            |        |        |        |        |    |            |                   |            |         |         |         |         |   |        |            |
| Number of new born children<br>(Total 2020 Netherlands) | 168066                                 | <p><a href="https://opendata.cbs.nl/statline/?dl=2C8D4#/CBS/nl/dataset/83474NED/table">https://opendata.cbs.nl/statline/?dl=2C8D4#/CBS/nl/dataset/83474NED/table</a> (25-02-2020)</p> <p>Bevolkingsontwikkeling; maand en jaar</p> <p>Gewijzigd op: 29 januari 2021</p> <p>Variabelen kunnen geslept worden naar de kop, rijen of kolommen van de tabel. In de kop is maar één item van een variabele te selecteren.</p> <table border="1"> <thead> <tr> <th>Periodes</th> <th>Bevolking aan het begin van de periode</th> <th>Levend geboren kinderen</th> <th>Overledenen</th> <th>Immigratie</th> <th>Emigratie inclusief administratieve c...</th> <th>Overige correcties</th> <th>Totale bevolkingsgroei</th> <th>Bevolking aan het eind van de periode</th> </tr> </thead> <tbody> <tr> <td>2020 januari<sup>1</sup></td> <td>17 407 585</td> <td>14 015</td> <td>14 120</td> <td>22 081</td> <td>15 745</td> <td>6 235</td> <td>17 413 818</td> </tr> <tr> <td>2020 februari<sup>1</sup></td> <td>17 415 818</td> <td>12 866</td> <td>12 872</td> <td>21 320</td> <td>12 140</td> <td>9 174</td> <td>17 422 992</td> </tr> <tr> <td>2020 maart<sup>1</sup></td> <td>17 422 992</td> <td>13 498</td> <td>16 202</td> <td>15 740</td> <td>12 910</td> <td>126</td> <td>17 425 118</td> </tr> <tr> <td>2020 april<sup>1</sup></td> <td>17 425 118</td> <td>13 522</td> <td>18 854</td> <td>9 357</td> <td>9 446</td> <td>-5 641</td> <td>17 417 477</td> </tr> <tr> <td>2020 mei<sup>1</sup></td> <td>17 417 477</td> <td>13 731</td> <td>12 616</td> <td>8 981</td> <td>8 765</td> <td>1 331</td> <td>17 418 808</td> </tr> <tr> <td>2020 juni<sup>1</sup></td> <td>17 418 808</td> <td>13 894</td> <td>11 486</td> <td>12 659</td> <td>11 397</td> <td>3 670</td> <td>17 422 478</td> </tr> <tr> <td>2020 juli<sup>1</sup></td> <td>17 422 478</td> <td>15 572</td> <td>11 615</td> <td>17 782</td> <td>16 411</td> <td>5 328</td> <td>17 427 806</td> </tr> <tr> <td>2020 augustus<sup>1</sup></td> <td>17 427 806</td> <td>15 065</td> <td>12 533</td> <td>25 886</td> <td>15 545</td> <td>12 873</td> <td>17 440 679</td> </tr> <tr> <td>2020 september<sup>1</sup></td> <td>17 440 679</td> <td>14 914</td> <td>11 921</td> <td>30 646</td> <td>12 775</td> <td>20 864</td> <td>17 461 543</td> </tr> <tr> <td>2020 oktober<sup>1</sup></td> <td>17 461 543</td> <td>14 450</td> <td>14 603</td> <td>20 869</td> <td>12 624</td> <td>8 092</td> <td>17 469 635</td> </tr> <tr> <td>2020 november<sup>1</sup></td> <td>17 469 635</td> <td>13 512</td> <td>14 914</td> <td>17 762</td> <td>11 318</td> <td>5 042</td> <td>17 474 677</td> </tr> <tr> <td>2020 december<sup>1</sup></td> <td>17 474 677</td> <td>13 227</td> <td>16 801</td> <td>16 187</td> <td>12 597</td> <td>16</td> <td>17 474 693</td> </tr> <tr> <td>2020<sup>1</sup></td> <td>17 407 585</td> <td>168 066</td> <td>168 537</td> <td>219 250</td> <td>151 671</td> <td>0</td> <td>67 108</td> <td>17 474 693</td> </tr> </tbody> </table> <p>Bron: CBS</p> | Periodes    | Bevolking aan het begin van de periode | Levend geboren kinderen                  | Overledenen        | Immigratie             | Emigratie inclusief administratieve c... | Overige correcties | Totale bevolkingsgroei | Bevolking aan het eind van de periode | 2020 januari <sup>1</sup> | 17 407 585 | 14 015 | 14 120 | 22 081 | 15 745 | 6 235 | 17 413 818 | 2020 februari <sup>1</sup> | 17 415 818 | 12 866 | 12 872 | 21 320 | 12 140 | 9 174 | 17 422 992 | 2020 maart <sup>1</sup> | 17 422 992 | 13 498 | 16 202 | 15 740 | 12 910 | 126 | 17 425 118 | 2020 april <sup>1</sup> | 17 425 118 | 13 522 | 18 854 | 9 357 | 9 446 | -5 641 | 17 417 477 | 2020 mei <sup>1</sup> | 17 417 477 | 13 731 | 12 616 | 8 981 | 8 765 | 1 331 | 17 418 808 | 2020 juni <sup>1</sup> | 17 418 808 | 13 894 | 11 486 | 12 659 | 11 397 | 3 670 | 17 422 478 | 2020 juli <sup>1</sup> | 17 422 478 | 15 572 | 11 615 | 17 782 | 16 411 | 5 328 | 17 427 806 | 2020 augustus <sup>1</sup> | 17 427 806 | 15 065 | 12 533 | 25 886 | 15 545 | 12 873 | 17 440 679 | 2020 september <sup>1</sup> | 17 440 679 | 14 914 | 11 921 | 30 646 | 12 775 | 20 864 | 17 461 543 | 2020 oktober <sup>1</sup> | 17 461 543 | 14 450 | 14 603 | 20 869 | 12 624 | 8 092 | 17 469 635 | 2020 november <sup>1</sup> | 17 469 635 | 13 512 | 14 914 | 17 762 | 11 318 | 5 042 | 17 474 677 | 2020 december <sup>1</sup> | 17 474 677 | 13 227 | 16 801 | 16 187 | 12 597 | 16 | 17 474 693 | 2020 <sup>1</sup> | 17 407 585 | 168 066 | 168 537 | 219 250 | 151 671 | 0 | 67 108 | 17 474 693 |
| Periodes  | Bevolking aan het begin van de periode | Levend geboren kinderen   | Overledenen | Immigratie                             | Emigratie inclusief administratieve c... | Overige correcties | Totale bevolkingsgroei | Bevolking aan het eind van de periode    |                    |                        |                                       |                           |            |        |        |        |        |       |            |                            |            |        |        |        |        |       |            |                         |            |        |        |        |        |     |            |                         |            |        |        |       |       |        |            |                       |            |        |        |       |       |       |            |                        |            |        |        |        |        |       |            |                        |            |        |        |        |        |       |            |                            |            |        |        |        |        |        |            |                             |            |        |        |        |        |        |            |                           |            |        |        |        |        |       |            |                            |            |        |        |        |        |       |            |                            |            |        |        |        |        |    |            |                   |            |         |         |         |         |   |        |            |
| 2020 januari <sup>1</sup>                               | 17 407 585                             | 14 015  | 14 120      | 22 081                                 | 15 745                                   | 6 235              | 17 413 818             |  |                    |                        |                                       |                           |            |        |        |        |        |       |            |                            |            |        |        |        |        |       |            |                         |            |        |        |        |        |     |            |                         |            |        |        |       |       |        |            |                       |            |        |        |       |       |       |            |                        |            |        |        |        |        |       |            |                        |            |        |        |        |        |       |            |                            |            |        |        |        |        |        |            |                             |            |        |        |        |        |        |            |                           |            |        |        |        |        |       |            |                            |            |        |        |        |        |       |            |                            |            |        |        |        |        |    |            |                   |            |         |         |         |         |   |        |            |
| 2020 februari <sup>1</sup>                              | 17 415 818                             | 12 866  | 12 872      | 21 320                                 | 12 140                                   | 9 174              | 17 422 992             |  |                    |                        |                                       |                           |            |        |        |        |        |       |            |                            |            |        |        |        |        |       |            |                         |            |        |        |        |        |     |            |                         |            |        |        |       |       |        |            |                       |            |        |        |       |       |       |            |                        |            |        |        |        |        |       |            |                        |            |        |        |        |        |       |            |                            |            |        |        |        |        |        |            |                             |            |        |        |        |        |        |            |                           |            |        |        |        |        |       |            |                            |            |        |        |        |        |       |            |                            |            |        |        |        |        |    |            |                   |            |         |         |         |         |   |        |            |
| 2020 maart <sup>1</sup>                                 | 17 422 992                             | 13 498  | 16 202      | 15 740                                 | 12 910                                   | 126                | 17 425 118             |  |                    |                        |                                       |                           |            |        |        |        |        |       |            |                            |            |        |        |        |        |       |            |                         |            |        |        |        |        |     |            |                         |            |        |        |       |       |        |            |                       |            |        |        |       |       |       |            |                        |            |        |        |        |        |       |            |                        |            |        |        |        |        |       |            |                            |            |        |        |        |        |        |            |                             |            |        |        |        |        |        |            |                           |            |        |        |        |        |       |            |                            |            |        |        |        |        |       |            |                            |            |        |        |        |        |    |            |                   |            |         |         |         |         |   |        |            |
| 2020 april <sup>1</sup>                                 | 17 425 118                             | 13 522  | 18 854      | 9 357                                  | 9 446                                    | -5 641             | 17 417 477             |  |                    |                        |                                       |                           |            |        |        |        |        |       |            |                            |            |        |        |        |        |       |            |                         |            |        |        |        |        |     |            |                         |            |        |        |       |       |        |            |                       |            |        |        |       |       |       |            |                        |            |        |        |        |        |       |            |                        |            |        |        |        |        |       |            |                            |            |        |        |        |        |        |            |                             |            |        |        |        |        |        |            |                           |            |        |        |        |        |       |            |                            |            |        |        |        |        |       |            |                            |            |        |        |        |        |    |            |                   |            |         |         |         |         |   |        |            |
| 2020 mei <sup>1</sup>                                   | 17 417 477                             | 13 731  | 12 616      | 8 981                                  | 8 765                                    | 1 331              | 17 418 808             |  |                    |                        |                                       |                           |            |        |        |        |        |       |            |                            |            |        |        |        |        |       |            |                         |            |        |        |        |        |     |            |                         |            |        |        |       |       |        |            |                       |            |        |        |       |       |       |            |                        |            |        |        |        |        |       |            |                        |            |        |        |        |        |       |            |                            |            |        |        |        |        |        |            |                             |            |        |        |        |        |        |            |                           |            |        |        |        |        |       |            |                            |            |        |        |        |        |       |            |                            |            |        |        |        |        |    |            |                   |            |         |         |         |         |   |        |            |
| 2020 juni <sup>1</sup>                                  | 17 418 808                             | 13 894  | 11 486      | 12 659                                 | 11 397                                   | 3 670              | 17 422 478             |  |                    |                        |                                       |                           |            |        |        |        |        |       |            |                            |            |        |        |        |        |       |            |                         |            |        |        |        |        |     |            |                         |            |        |        |       |       |        |            |                       |            |        |        |       |       |       |            |                        |            |        |        |        |        |       |            |                        |            |        |        |        |        |       |            |                            |            |        |        |        |        |        |            |                             |            |        |        |        |        |        |            |                           |            |        |        |        |        |       |            |                            |            |        |        |        |        |       |            |                            |            |        |        |        |        |    |            |                   |            |         |         |         |         |   |        |            |
| 2020 juli <sup>1</sup>                                  | 17 422 478                             | 15 572  | 11 615      | 17 782                                 | 16 411                                   | 5 328              | 17 427 806             |  |                    |                        |                                       |                           |            |        |        |        |        |       |            |                            |            |        |        |        |        |       |            |                         |            |        |        |        |        |     |            |                         |            |        |        |       |       |        |            |                       |            |        |        |       |       |       |            |                        |            |        |        |        |        |       |            |                        |            |        |        |        |        |       |            |                            |            |        |        |        |        |        |            |                             |            |        |        |        |        |        |            |                           |            |        |        |        |        |       |            |                            |            |        |        |        |        |       |            |                            |            |        |        |        |        |    |            |                   |            |         |         |         |         |   |        |            |
| 2020 augustus <sup>1</sup>                              | 17 427 806                             | 15 065  | 12 533      | 25 886                                 | 15 545                                   | 12 873             | 17 440 679             |  |                    |                        |                                       |                           |            |        |        |        |        |       |            |                            |            |        |        |        |        |       |            |                         |            |        |        |        |        |     |            |                         |            |        |        |       |       |        |            |                       |            |        |        |       |       |       |            |                        |            |        |        |        |        |       |            |                        |            |        |        |        |        |       |            |                            |            |        |        |        |        |        |            |                             |            |        |        |        |        |        |            |                           |            |        |        |        |        |       |            |                            |            |        |        |        |        |       |            |                            |            |        |        |        |        |    |            |                   |            |         |         |         |         |   |        |            |
| 2020 september <sup>1</sup>                             | 17 440 679                             | 14 914  | 11 921      | 30 646                                 | 12 775                                   | 20 864             | 17 461 543             |  |                    |                        |                                       |                           |            |        |        |        |        |       |            |                            |            |        |        |        |        |       |            |                         |            |        |        |        |        |     |            |                         |            |        |        |       |       |        |            |                       |            |        |        |       |       |       |            |                        |            |        |        |        |        |       |            |                        |            |        |        |        |        |       |            |                            |            |        |        |        |        |        |            |                             |            |        |        |        |        |        |            |                           |            |        |        |        |        |       |            |                            |            |        |        |        |        |       |            |                            |            |        |        |        |        |    |            |                   |            |         |         |         |         |   |        |            |
| 2020 oktober <sup>1</sup>                               | 17 461 543                             | 14 450  | 14 603      | 20 869                                 | 12 624                                   | 8 092              | 17 469 635             |  |                    |                        |                                       |                           |            |        |        |        |        |       |            |                            |            |        |        |        |        |       |            |                         |            |        |        |        |        |     |            |                         |            |        |        |       |       |        |            |                       |            |        |        |       |       |       |            |                        |            |        |        |        |        |       |            |                        |            |        |        |        |        |       |            |                            |            |        |        |        |        |        |            |                             |            |        |        |        |        |        |            |                           |            |        |        |        |        |       |            |                            |            |        |        |        |        |       |            |                            |            |        |        |        |        |    |            |                   |            |         |         |         |         |   |        |            |
| 2020 november <sup>1</sup>                              | 17 469 635                             | 13 512  | 14 914      | 17 762                                 | 11 318                                   | 5 042              | 17 474 677             |  |                    |                        |                                       |                           |            |        |        |        |        |       |            |                            |            |        |        |        |        |       |            |                         |            |        |        |        |        |     |            |                         |            |        |        |       |       |        |            |                       |            |        |        |       |       |       |            |                        |            |        |        |        |        |       |            |                        |            |        |        |        |        |       |            |                            |            |        |        |        |        |        |            |                             |            |        |        |        |        |        |            |                           |            |        |        |        |        |       |            |                            |            |        |        |        |        |       |            |                            |            |        |        |        |        |    |            |                   |            |         |         |         |         |   |        |            |
| 2020 december <sup>1</sup>                              | 17 474 677                             | 13 227  | 16 801      | 16 187                                 | 12 597                                   | 16                 | 17 474 693             |  |                    |                        |                                       |                           |            |        |        |        |        |       |            |                            |            |        |        |        |        |       |            |                         |            |        |        |        |        |     |            |                         |            |        |        |       |       |        |            |                       |            |        |        |       |       |       |            |                        |            |        |        |        |        |       |            |                        |            |        |        |        |        |       |            |                            |            |        |        |        |        |        |            |                             |            |        |        |        |        |        |            |                           |            |        |        |        |        |       |            |                            |            |        |        |        |        |       |            |                            |            |        |        |        |        |    |            |                   |            |         |         |         |         |   |        |            |
| 2020 <sup>1</sup>                                       | 17 407 585                             | 168 066   | 168 537     | 219 250                                | 151 671                                  | 0                  | 67 108                 | 17 474 693                               |                    |                        |                                       |                           |            |        |        |        |        |       |            |                            |            |        |        |        |        |       |            |                         |            |        |        |        |        |     |            |                         |            |        |        |       |       |        |            |                       |            |        |        |       |       |       |            |                        |            |        |        |        |        |       |            |                        |            |        |        |        |        |       |            |                            |            |        |        |        |        |        |            |                             |            |        |        |        |        |        |            |                           |            |        |        |        |        |       |            |                            |            |        |        |        |        |       |            |                            |            |        |        |        |        |    |            |                   |            |         |         |         |         |   |        |            |



| Indicator   | Value  | Source      |                                    |             |                                    |  |              |             |              |             |      |    |    |    |    |      |     |    |    |    |      |     |    |    |    |      |     |    |    |    |      |     |    |    |    |      |     |    |     |    |      |     |    |    |    |      |     |    |    |    |      |     |    |  |  |                     |     |    |    |    |                     |     |    |  |  |   |
|---|--|-------------|------------------------------------|-------------|------------------------------------|--|--------------|-------------|--------------|-------------|------|----|----|----|----|------|-----|----|----|----|------|-----|----|----|----|------|-----|----|----|----|------|-----|----|----|----|------|-----|----|-----|----|------|-----|----|----|----|------|-----|----|----|----|------|-----|----|--|--|---------------------|-----|----|----|----|---------------------|-----|----|--|--|---|
| Number of deaf or hearing loss new-born children  | <p>1 or 2 children at every 1000 new-borns are hard of hearing or deaf.</p> <p>At a birth rate of 190 000 up to 200 000 a year, that means about 200 children with hearing loss. Between 2012 and 2019 an average of 124 children per year was reported with bilateral hearing loss and approximately 82 children per year with unilateral hearing loss. This number is without the children dicoverd at the intensive cares for new-borns (NICU's). Between 2012 and 2018 84 children per year with bilateral hearing loss were discovered at the NICU and about 33 children a year with unilateral hearing loss.</p> <table border="1"> <thead> <tr> <th rowspan="2">Jaar</th> <th colspan="2">Opgespoord<br/>gehoorverlies JGZ</th> <th colspan="2">Opgespoord<br/>gehoorverlies NICU's</th> </tr> <tr> <th>dubbelzijdig</th> <th>enkelzijdig</th> <th>dubbelzijdig</th> <th>enkelzijdig</th> </tr> </thead> <tbody> <tr><td>2011</td><td>99</td><td>88</td><td>82</td><td>37</td></tr> <tr><td>2012</td><td>119</td><td>91</td><td>94</td><td>34</td></tr> <tr><td>2013</td><td>113</td><td>87</td><td>77</td><td>40</td></tr> <tr><td>2014</td><td>124</td><td>95</td><td>89</td><td>38</td></tr> <tr><td>2015</td><td>113</td><td>82</td><td>75</td><td>26</td></tr> <tr><td>2016</td><td>128</td><td>68</td><td>101</td><td>31</td></tr> <tr><td>2017</td><td>119</td><td>74</td><td>87</td><td>30</td></tr> <tr><td>2018</td><td>146</td><td>85</td><td>68</td><td>29</td></tr> <tr><td>2019</td><td>129</td><td>77</td><td></td><td></td></tr> <tr> <td>Gemiddeld 2011-2018</td> <td>120</td> <td>84</td> <td>84</td> <td>33</td> </tr> <tr> <td>Gemiddeld 2012-2019</td> <td>124</td> <td>82</td> <td></td> <td></td> </tr> </tbody> </table> <p>Bronnen: van der Ploeg et al., 2020, van der Ploeg et al., 2019, de Graaff-Korf et al., 2020<br/>           • Voor het aantal kinderen met gehoorverlies dat op de NICU is opgespoord, zijn nog geen cijfers over 2019 beschikbaar.</p> | Jaar        | Opgespoord<br>gehoorverlies JGZ    |             | Opgespoord<br>gehoorverlies NICU's |  | dubbelzijdig | enkelzijdig | dubbelzijdig | enkelzijdig | 2011 | 99 | 88 | 82 | 37 | 2012 | 119 | 91 | 94 | 34 | 2013 | 113 | 87 | 77 | 40 | 2014 | 124 | 95 | 89 | 38 | 2015 | 113 | 82 | 75 | 26 | 2016 | 128 | 68 | 101 | 31 | 2017 | 119 | 74 | 87 | 30 | 2018 | 146 | 85 | 68 | 29 | 2019 | 129 | 77 |  |  | Gemiddeld 2011-2018 | 120 | 84 | 84 | 33 | Gemiddeld 2012-2019 | 124 | 82 |  |  | <p><b>van der Ploeg K, Wins S, Verkerk P.</b> Neonatale gehoorscreening door de Jeugdgezondheidszorg. Monitor over 2019. Leiden: TNO; 2020.</p> <p><b>de Graaff-Korf KS, Wins S, van Dommelen P, van Straaten HLM, Verkerk PH.</b> Jaarverslag neonatale gehoorscreening in de Neonatale Intensive Care Units 2018. Zwolle: Isala; 2020.</p> <p><b>van der Ploeg K, Wins S, Verkerk P.</b> Neonatale gehoorscreening door de Jeugdgezondheidszorg. Monitor over 2018. Leiden: TNO; 2019</p> |
| Jaar  | Opgespoord<br>gehoorverlies JGZ  |             | Opgespoord<br>gehoorverlies NICU's |             |                                    |  |              |             |              |             |      |    |    |    |    |      |     |    |    |    |      |     |    |    |    |      |     |    |    |    |      |     |    |    |    |      |     |    |     |    |      |     |    |    |    |      |     |    |    |    |      |     |    |  |  |                     |     |    |    |    |                     |     |    |  |  |   |
|   | dubbelzijdig   | enkelzijdig | dubbelzijdig                       | enkelzijdig |                                    |  |              |             |              |             |      |    |    |    |    |      |     |    |    |    |      |     |    |    |    |      |     |    |    |    |      |     |    |    |    |      |     |    |     |    |      |     |    |    |    |      |     |    |    |    |      |     |    |  |  |                     |     |    |    |    |                     |     |    |  |  |   |
| 2011  | 99   | 88          | 82                                 | 37          |                                    |  |              |             |              |             |      |    |    |    |    |      |     |    |    |    |      |     |    |    |    |      |     |    |    |    |      |     |    |    |    |      |     |    |     |    |      |     |    |    |    |      |     |    |    |    |      |     |    |  |  |                     |     |    |    |    |                     |     |    |  |  |   |
| 2012  | 119  | 91          | 94                                 | 34          |                                    |  |              |             |              |             |      |    |    |    |    |      |     |    |    |    |      |     |    |    |    |      |     |    |    |    |      |     |    |    |    |      |     |    |     |    |      |     |    |    |    |      |     |    |    |    |      |     |    |  |  |                     |     |    |    |    |                     |     |    |  |  |   |
| 2013  | 113  | 87          | 77                                 | 40          |                                    |  |              |             |              |             |      |    |    |    |    |      |     |    |    |    |      |     |    |    |    |      |     |    |    |    |      |     |    |    |    |      |     |    |     |    |      |     |    |    |    |      |     |    |    |    |      |     |    |  |  |                     |     |    |    |    |                     |     |    |  |  |   |
| 2014  | 124  | 95          | 89                                 | 38          |                                    |  |              |             |              |             |      |    |    |    |    |      |     |    |    |    |      |     |    |    |    |      |     |    |    |    |      |     |    |    |    |      |     |    |     |    |      |     |    |    |    |      |     |    |    |    |      |     |    |  |  |                     |     |    |    |    |                     |     |    |  |  |   |
| 2015  | 113  | 82          | 75                                 | 26          |                                    |  |              |             |              |             |      |    |    |    |    |      |     |    |    |    |      |     |    |    |    |      |     |    |    |    |      |     |    |    |    |      |     |    |     |    |      |     |    |    |    |      |     |    |    |    |      |     |    |  |  |                     |     |    |    |    |                     |     |    |  |  |   |
| 2016  | 128  | 68          | 101                                | 31          |                                    |  |              |             |              |             |      |    |    |    |    |      |     |    |    |    |      |     |    |    |    |      |     |    |    |    |      |     |    |    |    |      |     |    |     |    |      |     |    |    |    |      |     |    |    |    |      |     |    |  |  |                     |     |    |    |    |                     |     |    |  |  |   |
| 2017  | 119  | 74          | 87                                 | 30          |                                    |  |              |             |              |             |      |    |    |    |    |      |     |    |    |    |      |     |    |    |    |      |     |    |    |    |      |     |    |    |    |      |     |    |     |    |      |     |    |    |    |      |     |    |    |    |      |     |    |  |  |                     |     |    |    |    |                     |     |    |  |  |   |
| 2018  | 146  | 85          | 68                                 | 29          |                                    |  |              |             |              |             |      |    |    |    |    |      |     |    |    |    |      |     |    |    |    |      |     |    |    |    |      |     |    |    |    |      |     |    |     |    |      |     |    |    |    |      |     |    |    |    |      |     |    |  |  |                     |     |    |    |    |                     |     |    |  |  |   |
| 2019  | 129  | 77          |                                    |             |                                    |  |              |             |              |             |      |    |    |    |    |      |     |    |    |    |      |     |    |    |    |      |     |    |    |    |      |     |    |    |    |      |     |    |     |    |      |     |    |    |    |      |     |    |    |    |      |     |    |  |  |                     |     |    |    |    |                     |     |    |  |  |   |
| Gemiddeld 2011-2018   | 120  | 84          | 84                                 | 33          |                                    |  |              |             |              |             |      |    |    |    |    |      |     |    |    |    |      |     |    |    |    |      |     |    |    |    |      |     |    |    |    |      |     |    |     |    |      |     |    |    |    |      |     |    |    |    |      |     |    |  |  |                     |     |    |    |    |                     |     |    |  |  |   |
| Gemiddeld 2012-2019   | 124  | 82          |                                    |             |                                    |  |              |             |              |             |      |    |    |    |    |      |     |    |    |    |      |     |    |    |    |      |     |    |    |    |      |     |    |    |    |      |     |    |     |    |      |     |    |    |    |      |     |    |    |    |      |     |    |  |  |                     |     |    |    |    |                     |     |    |  |  |   |
|   | <p><a href="https://www.volksgezondheinzorg.info/onderwerp/gehoorstoornissen/cijfers-context/huidige-situatie#node-opgespoord-gehoorverlies-door-neonatale-gehoorscreening">https://www.volksgezondheinzorg.info/onderwerp/gehoorstoornissen/cijfers-context/huidige-situatie#node-opgespoord-gehoorverlies-door-neonatale-gehoorscreening</a></p> <p><a href="https://richtlijndatabase.nl/richtlijn/etiologisch_onderzoek_naar_slechthorendheid_op_de_kinderleeftijd/slechthorendheid_op_de_kinderleeftijd_-_startpagina.html#:~:text=1%20%20C3%A0%20%20op%20de,en%20kan%20verschillende%20oorzaken%20hebben.">https://richtlijndatabase.nl/richtlijn/etiologisch_onderzoek_naar_slechthorendheid_op_de_kinderleeftijd/slechthorendheid_op_de_kinderleeftijd_-_startpagina.html#:~:text=1%20%20C3%A0%20%20op%20de,en%20kan%20verschillende%20oorzaken%20hebben.</a></p>  |             |                                    |             |                                    |  |              |             |              |             |      |    |    |    |    |      |     |    |    |    |      |     |    |    |    |      |     |    |    |    |      |     |    |    |    |      |     |    |     |    |      |     |    |    |    |      |     |    |    |    |      |     |    |  |  |                     |     |    |    |    |                     |     |    |  |  |   |
| Is there any National Registry for the neonatal hearing screening programmes available in your country? | <p><a href="https://www.volksgezondheinzorg.info/onderwerp/gehoorstoornissen/cijfers-context/huidige-situatie#node-opgespoord-gehoorverlies-door-neonatale-gehoorscreening">https://www.volksgezondheinzorg.info/onderwerp/gehoorstoornissen/cijfers-context/huidige-situatie#node-opgespoord-gehoorverlies-door-neonatale-gehoorscreening</a></p> <p>The Dutch Organization for Applied-Nature scientific research (TNO) monitors the numbers for Youth Health Care. The Isala Hospital In Zwolle is responsible for monitoring the numbers at the NICU's all over the Netherlands.</p>   |             |                                    |             |                                    |  |              |             |              |             |      |    |    |    |    |      |     |    |    |    |      |     |    |    |    |      |     |    |    |    |      |     |    |    |    |      |     |    |     |    |      |     |    |    |    |      |     |    |    |    |      |     |    |  |  |                     |     |    |    |    |                     |     |    |  |  |   |



| Indicator                             | Value<br>(mention the year in the study)   | Source<br>(link and please insert infographics also)  |              |                              |       |                              |             |       |             |  |  |       |       |       |       |       |       |       |       |       |               |   |    |    |   |   |   |   |   |   |                |    |    |    |    |   |    |   |   |   |           |    |    |    |   |   |   |   |   |   |        |    |    |    |   |   |    |   |   |   |            |    |    |    |   |   |   |   |   |   |          |    |    |     |    |   |    |   |   |   |           |    |    |    |    |   |    |   |   |   |         |    |    |    |   |   |   |   |   |   |             |     |     |     |    |   |    |   |    |    |         |              |  |  |                              |  |  |             |  |  |       |       |       |       |       |       |       |       |       |               |     |     |     |    |    |    |   |    |    |  |
|---------------------------------------|--|---|--------------|------------------------------|-------|------------------------------|-------------|-------|-------------|--|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------------|---|----|----|---|---|---|---|---|---|----------------|----|----|----|----|---|----|---|---|---|-----------|----|----|----|---|---|---|---|---|---|--------|----|----|----|---|---|----|---|---|---|------------|----|----|----|---|---|---|---|---|---|----------|----|----|-----|----|---|----|---|---|---|-----------|----|----|----|----|---|----|---|---|---|---------|----|----|----|---|---|---|---|---|---|-------------|-----|-----|-----|----|---|----|---|----|----|---------|--------------|--|--|------------------------------|--|--|-------------|--|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------------|-----|-----|-----|----|----|----|---|----|----|--|
| Number of cochlear implanted children | End 2019<br>2733 children  | <a href="https://www.opciweb.nl/2020/08/beknopte-geschiedenis-van-het-cochleair-implantaat/#:~:text=In%201985%20werd%20in%20Nederland,ervoor%20in%20aanmerking%20te%20komen.">https://www.opciweb.nl/2020/08/beknopte-geschiedenis-van-het-cochleair-implantaat/#:~:text=In%201985%20werd%20in%20Nederland,ervoor%20in%20aanmerking%20te%20komen.</a> |              |                              |       |                              |             |       |             |  |  |       |       |       |       |       |       |       |       |       |               |   |    |    |   |   |   |   |   |   |                |    |    |    |    |   |    |   |   |   |           |    |    |    |   |   |   |   |   |   |        |    |    |    |   |   |    |   |   |   |            |    |    |    |   |   |   |   |   |   |          |    |    |     |    |   |    |   |   |   |           |    |    |    |    |   |    |   |   |   |         |    |    |    |   |   |   |   |   |   |             |     |     |     |    |   |    |   |    |    |         |              |  |  |                              |  |  |             |  |  |       |       |       |       |       |       |       |       |       |               |     |     |     |    |    |    |   |    |    |  |
| Type of implantation                  | uni or bilateral<br>IC in children with other comorbidities(syndromes, for example)<br><br>A total 7610 people with 1 or 2 CI.2733 children and 6004 adults. 839 bilateral and in 288 cases a re-implant.<br><br><a href="https://www.opciweb.nl/2020/08/beknopte-geschiedenis-van-het-cochleair-implantaat/#:~:text=In%201985%20werd%20in%20Nederland,ervoor%20in%20aanmerking%20te%20komen.">https://www.opciweb.nl/2020/08/beknopte-geschiedenis-van-het-cochleair-implantaat/#:~:text=In%201985%20werd%20in%20Nederland,ervoor%20in%20aanmerking%20te%20komen.</a><br><br><b>CI placed in 2017 in the Netherlands</b> ( <a href="https://www.opciweb.nl/ci-centra/ci-centra-in-nederland/aantal-implantaties-in-nederland-t-m-2017/">https://www.opciweb.nl/ci-centra/ci-centra-in-nederland/aantal-implantaties-in-nederland-t-m-2017/</a> ):<br><table border="1"> <thead> <tr> <th rowspan="2">CI Team</th> <th colspan="3">Implantaions</th> <th colspan="3">Bilateral implanted patients</th> <th colspan="3">Re-implants</th> </tr> <tr> <th>child</th> <th>adult</th> <th>total</th> <th>child</th> <th>adult</th> <th>total</th> <th>child</th> <th>adult</th> <th>total</th> </tr> </thead> <tbody> <tr> <td>Amsterdam AMC</td> <td>3</td> <td>29</td> <td>32</td> <td>0</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>2</td> </tr> <tr> <td>Amsterdam Vumc</td> <td>30</td> <td>12</td> <td>42</td> <td>13</td> <td>0</td> <td>13</td> <td>1</td> <td>0</td> <td>1</td> </tr> <tr> <td>Groningen</td> <td>15</td> <td>37</td> <td>52</td> <td>5</td> <td>0</td> <td>5</td> <td>0</td> <td>2</td> <td>2</td> </tr> <tr> <td>Leiden</td> <td>19</td> <td>65</td> <td>84</td> <td>8</td> <td>3</td> <td>11</td> <td>0</td> <td>3</td> <td>3</td> </tr> <tr> <td>Maastricht</td> <td>13</td> <td>40</td> <td>53</td> <td>5</td> <td>3</td> <td>8</td> <td>3</td> <td>0</td> <td>3</td> </tr> <tr> <td>Nijmegen</td> <td>47</td> <td>92</td> <td>139</td> <td>16</td> <td>0</td> <td>16</td> <td>2</td> <td>0</td> <td>2</td> </tr> <tr> <td>Rotterdam</td> <td>24</td> <td>42</td> <td>66</td> <td>12</td> <td>1</td> <td>13</td> <td>0</td> <td>2</td> <td>2</td> </tr> <tr> <td>Utrecht</td> <td>21</td> <td>40</td> <td>61</td> <td>6</td> <td>1</td> <td>7</td> <td>2</td> <td>2</td> <td>4</td> </tr> <tr> <td>Netherlands</td> <td>172</td> <td>357</td> <td>529</td> <td>65</td> <td>9</td> <td>74</td> <td>9</td> <td>10</td> <td>19</td> </tr> </tbody> </table><br><b>Total CI until 2017 in the Netherlands</b> ( <a href="https://www.opciweb.nl/ci-centra/ci-centra-in-nederland/aantal-implantaties-in-nederland-t-m-2017/">https://www.opciweb.nl/ci-centra/ci-centra-in-nederland/aantal-implantaties-in-nederland-t-m-2017/</a> ):<br><table border="1"> <thead> <tr> <th rowspan="2">CI Team</th> <th colspan="3">Implantaions</th> <th colspan="3">Bilateral implanted patients</th> <th colspan="3">Re-implants</th> </tr> <tr> <th>child</th> <th>adult</th> <th>total</th> <th>child</th> <th>adult</th> <th>total</th> <th>child</th> <th>adult</th> <th>total</th> </tr> </thead> <tbody> <tr> <td>Amsterdam AMC</td> <td>113</td> <td>355</td> <td>468</td> <td>35</td> <td>18</td> <td>53</td> <td>2</td> <td>11</td> <td>13</td> </tr> </tbody> </table> | CI Team   | Implantaions |                              |       | Bilateral implanted patients |             |       | Re-implants |  |  | child | adult | total | child | adult | total | child | adult | total | Amsterdam AMC | 3 | 29 | 32 | 0 | 1 | 1 | 1 | 1 | 2 | Amsterdam Vumc | 30 | 12 | 42 | 13 | 0 | 13 | 1 | 0 | 1 | Groningen | 15 | 37 | 52 | 5 | 0 | 5 | 0 | 2 | 2 | Leiden | 19 | 65 | 84 | 8 | 3 | 11 | 0 | 3 | 3 | Maastricht | 13 | 40 | 53 | 5 | 3 | 8 | 3 | 0 | 3 | Nijmegen | 47 | 92 | 139 | 16 | 0 | 16 | 2 | 0 | 2 | Rotterdam | 24 | 42 | 66 | 12 | 1 | 13 | 0 | 2 | 2 | Utrecht | 21 | 40 | 61 | 6 | 1 | 7 | 2 | 2 | 4 | Netherlands | 172 | 357 | 529 | 65 | 9 | 74 | 9 | 10 | 19 | CI Team | Implantaions |  |  | Bilateral implanted patients |  |  | Re-implants |  |  | child | adult | total | child | adult | total | child | adult | total | Amsterdam AMC | 113 | 355 | 468 | 35 | 18 | 53 | 2 | 11 | 13 |  |
| CI Team                               | Implantaions   |   |              | Bilateral implanted patients |       |                              | Re-implants |       |             |  |  |       |       |       |       |       |       |       |       |       |               |   |    |    |   |   |   |   |   |   |                |    |    |    |    |   |    |   |   |   |           |    |    |    |   |   |   |   |   |   |        |    |    |    |   |   |    |   |   |   |            |    |    |    |   |   |   |   |   |   |          |    |    |     |    |   |    |   |   |   |           |    |    |    |    |   |    |   |   |   |         |    |    |    |   |   |   |   |   |   |             |     |     |     |    |   |    |   |    |    |         |              |  |  |                              |  |  |             |  |  |       |       |       |       |       |       |       |       |       |               |     |     |     |    |    |    |   |    |    |  |
|                                       | child  | adult   | total        | child                        | adult | total                        | child       | adult | total       |  |  |       |       |       |       |       |       |       |       |       |               |   |    |    |   |   |   |   |   |   |                |    |    |    |    |   |    |   |   |   |           |    |    |    |   |   |   |   |   |   |        |    |    |    |   |   |    |   |   |   |            |    |    |    |   |   |   |   |   |   |          |    |    |     |    |   |    |   |   |   |           |    |    |    |    |   |    |   |   |   |         |    |    |    |   |   |   |   |   |   |             |     |     |     |    |   |    |   |    |    |         |              |  |  |                              |  |  |             |  |  |       |       |       |       |       |       |       |       |       |               |     |     |     |    |    |    |   |    |    |  |
| Amsterdam AMC                         | 3  | 29  | 32           | 0                            | 1     | 1                            | 1           | 1     | 2           |  |  |       |       |       |       |       |       |       |       |       |               |   |    |    |   |   |   |   |   |   |                |    |    |    |    |   |    |   |   |   |           |    |    |    |   |   |   |   |   |   |        |    |    |    |   |   |    |   |   |   |            |    |    |    |   |   |   |   |   |   |          |    |    |     |    |   |    |   |   |   |           |    |    |    |    |   |    |   |   |   |         |    |    |    |   |   |   |   |   |   |             |     |     |     |    |   |    |   |    |    |         |              |  |  |                              |  |  |             |  |  |       |       |       |       |       |       |       |       |       |               |     |     |     |    |    |    |   |    |    |  |
| Amsterdam Vumc                        | 30   | 12  | 42           | 13                           | 0     | 13                           | 1           | 0     | 1           |  |  |       |       |       |       |       |       |       |       |       |               |   |    |    |   |   |   |   |   |   |                |    |    |    |    |   |    |   |   |   |           |    |    |    |   |   |   |   |   |   |        |    |    |    |   |   |    |   |   |   |            |    |    |    |   |   |   |   |   |   |          |    |    |     |    |   |    |   |   |   |           |    |    |    |    |   |    |   |   |   |         |    |    |    |   |   |   |   |   |   |             |     |     |     |    |   |    |   |    |    |         |              |  |  |                              |  |  |             |  |  |       |       |       |       |       |       |       |       |       |               |     |     |     |    |    |    |   |    |    |  |
| Groningen                             | 15   | 37  | 52           | 5                            | 0     | 5                            | 0           | 2     | 2           |  |  |       |       |       |       |       |       |       |       |       |               |   |    |    |   |   |   |   |   |   |                |    |    |    |    |   |    |   |   |   |           |    |    |    |   |   |   |   |   |   |        |    |    |    |   |   |    |   |   |   |            |    |    |    |   |   |   |   |   |   |          |    |    |     |    |   |    |   |   |   |           |    |    |    |    |   |    |   |   |   |         |    |    |    |   |   |   |   |   |   |             |     |     |     |    |   |    |   |    |    |         |              |  |  |                              |  |  |             |  |  |       |       |       |       |       |       |       |       |       |               |     |     |     |    |    |    |   |    |    |  |
| Leiden                                | 19   | 65  | 84           | 8                            | 3     | 11                           | 0           | 3     | 3           |  |  |       |       |       |       |       |       |       |       |       |               |   |    |    |   |   |   |   |   |   |                |    |    |    |    |   |    |   |   |   |           |    |    |    |   |   |   |   |   |   |        |    |    |    |   |   |    |   |   |   |            |    |    |    |   |   |   |   |   |   |          |    |    |     |    |   |    |   |   |   |           |    |    |    |    |   |    |   |   |   |         |    |    |    |   |   |   |   |   |   |             |     |     |     |    |   |    |   |    |    |         |              |  |  |                              |  |  |             |  |  |       |       |       |       |       |       |       |       |       |               |     |     |     |    |    |    |   |    |    |  |
| Maastricht                            | 13   | 40  | 53           | 5                            | 3     | 8                            | 3           | 0     | 3           |  |  |       |       |       |       |       |       |       |       |       |               |   |    |    |   |   |   |   |   |   |                |    |    |    |    |   |    |   |   |   |           |    |    |    |   |   |   |   |   |   |        |    |    |    |   |   |    |   |   |   |            |    |    |    |   |   |   |   |   |   |          |    |    |     |    |   |    |   |   |   |           |    |    |    |    |   |    |   |   |   |         |    |    |    |   |   |   |   |   |   |             |     |     |     |    |   |    |   |    |    |         |              |  |  |                              |  |  |             |  |  |       |       |       |       |       |       |       |       |       |               |     |     |     |    |    |    |   |    |    |  |
| Nijmegen                              | 47   | 92  | 139          | 16                           | 0     | 16                           | 2           | 0     | 2           |  |  |       |       |       |       |       |       |       |       |       |               |   |    |    |   |   |   |   |   |   |                |    |    |    |    |   |    |   |   |   |           |    |    |    |   |   |   |   |   |   |        |    |    |    |   |   |    |   |   |   |            |    |    |    |   |   |   |   |   |   |          |    |    |     |    |   |    |   |   |   |           |    |    |    |    |   |    |   |   |   |         |    |    |    |   |   |   |   |   |   |             |     |     |     |    |   |    |   |    |    |         |              |  |  |                              |  |  |             |  |  |       |       |       |       |       |       |       |       |       |               |     |     |     |    |    |    |   |    |    |  |
| Rotterdam                             | 24   | 42  | 66           | 12                           | 1     | 13                           | 0           | 2     | 2           |  |  |       |       |       |       |       |       |       |       |       |               |   |    |    |   |   |   |   |   |   |                |    |    |    |    |   |    |   |   |   |           |    |    |    |   |   |   |   |   |   |        |    |    |    |   |   |    |   |   |   |            |    |    |    |   |   |   |   |   |   |          |    |    |     |    |   |    |   |   |   |           |    |    |    |    |   |    |   |   |   |         |    |    |    |   |   |   |   |   |   |             |     |     |     |    |   |    |   |    |    |         |              |  |  |                              |  |  |             |  |  |       |       |       |       |       |       |       |       |       |               |     |     |     |    |    |    |   |    |    |  |
| Utrecht                               | 21   | 40  | 61           | 6                            | 1     | 7                            | 2           | 2     | 4           |  |  |       |       |       |       |       |       |       |       |       |               |   |    |    |   |   |   |   |   |   |                |    |    |    |    |   |    |   |   |   |           |    |    |    |   |   |   |   |   |   |        |    |    |    |   |   |    |   |   |   |            |    |    |    |   |   |   |   |   |   |          |    |    |     |    |   |    |   |   |   |           |    |    |    |    |   |    |   |   |   |         |    |    |    |   |   |   |   |   |   |             |     |     |     |    |   |    |   |    |    |         |              |  |  |                              |  |  |             |  |  |       |       |       |       |       |       |       |       |       |               |     |     |     |    |    |    |   |    |    |  |
| Netherlands                           | 172  | 357   | 529          | 65                           | 9     | 74                           | 9           | 10    | 19          |  |  |       |       |       |       |       |       |       |       |       |               |   |    |    |   |   |   |   |   |   |                |    |    |    |    |   |    |   |   |   |           |    |    |    |   |   |   |   |   |   |        |    |    |    |   |   |    |   |   |   |            |    |    |    |   |   |   |   |   |   |          |    |    |     |    |   |    |   |   |   |           |    |    |    |    |   |    |   |   |   |         |    |    |    |   |   |   |   |   |   |             |     |     |     |    |   |    |   |    |    |         |              |  |  |                              |  |  |             |  |  |       |       |       |       |       |       |       |       |       |               |     |     |     |    |    |    |   |    |    |  |
| CI Team                               | Implantaions   |   |              | Bilateral implanted patients |       |                              | Re-implants |       |             |  |  |       |       |       |       |       |       |       |       |       |               |   |    |    |   |   |   |   |   |   |                |    |    |    |    |   |    |   |   |   |           |    |    |    |   |   |   |   |   |   |        |    |    |    |   |   |    |   |   |   |            |    |    |    |   |   |   |   |   |   |          |    |    |     |    |   |    |   |   |   |           |    |    |    |    |   |    |   |   |   |         |    |    |    |   |   |   |   |   |   |             |     |     |     |    |   |    |   |    |    |         |              |  |  |                              |  |  |             |  |  |       |       |       |       |       |       |       |       |       |               |     |     |     |    |    |    |   |    |    |  |
|                                       | child  | adult   | total        | child                        | adult | total                        | child       | adult | total       |  |  |       |       |       |       |       |       |       |       |       |               |   |    |    |   |   |   |   |   |   |                |    |    |    |    |   |    |   |   |   |           |    |    |    |   |   |   |   |   |   |        |    |    |    |   |   |    |   |   |   |            |    |    |    |   |   |   |   |   |   |          |    |    |     |    |   |    |   |   |   |           |    |    |    |    |   |    |   |   |   |         |    |    |    |   |   |   |   |   |   |             |     |     |     |    |   |    |   |    |    |         |              |  |  |                              |  |  |             |  |  |       |       |       |       |       |       |       |       |       |               |     |     |     |    |    |    |   |    |    |  |
| Amsterdam AMC                         | 113  | 355   | 468          | 35                           | 18    | 53                           | 2           | 11    | 13          |  |  |       |       |       |       |       |       |       |       |       |               |   |    |    |   |   |   |   |   |   |                |    |    |    |    |   |    |   |   |   |           |    |    |    |   |   |   |   |   |   |        |    |    |    |   |   |    |   |   |   |            |    |    |    |   |   |   |   |   |   |          |    |    |     |    |   |    |   |   |   |           |    |    |    |    |   |    |   |   |   |         |    |    |    |   |   |   |   |   |   |             |     |     |     |    |   |    |   |    |    |         |              |  |  |                              |  |  |             |  |  |       |       |       |       |       |       |       |       |       |               |     |     |     |    |    |    |   |    |    |  |



|                |      |      |      |     |     |     |    |     |     |
|----------------|------|------|------|-----|-----|-----|----|-----|-----|
| Amsterdam Vumc | 176  | 328  | 504  | 52  | 5   | 57  | 5  | 10  | 15  |
| Groningen      | 168  | 533  | 701  | 45  | 5   | 50  | 7  | 17  | 24  |
| Leiden         | 258  | 819  | 1077 | 58  | 15  | 73  | 5  | 22  | 27  |
| Maastricht     | 223  | 654  | 877  | 83  | 22  | 105 | 11 | 18  | 29  |
| Nijmegen       | 756  | 1271 | 2027 | 183 | 17  | 200 | 10 | 51  | 61  |
| Rotterdam      | 249  | 466  | 715  | 63  | 2   | 65  | 1  | 24  | 25  |
| Utrecht        | 399  | 818  | 1217 | 51  | 21  | 72  | 17 | 43  | 60  |
| Netherlands    | 2342 | 5244 | 7586 | 570 | 105 | 675 | 58 | 196 | 254 |

**Guidelines for implantation uni- or bilateral:**

**Standards for cochlear implantation in the Netherlands, 2014**

| Emergence of the hearing loss | Age            | CI                      | Implantation                    |
|-------------------------------|----------------|-------------------------|---------------------------------|
| Innate                        | 0-5 years      | Bilateral               | Simultaneously                  |
|                               | 5-18 years     | Bilateral* <sup>2</sup> | Sequentially                    |
| Acquired                      | 0-5 years      | Bilateral               | Simultaneously                  |
|                               | 5-18 years     | Bilateral*              | Simultaneously/<br>sequentially |
|                               | >18 years      | Unilateral              | -                               |
| After meningitis              | Not applicable | Bilateral               | Simultaneously/<br>sequentially |

\*Unilateral when not expected to that second CI has added value, for example bad experiences with first CI (Contra indications)

<sup>2</sup> Unilateral when > 12 years and no CI yet

(<https://www.henw.org/artikelen/het-cochleair-implantaat>)

**Most common comorbidities in implanted children in the Netherlands in 2014**

(<file:///D:/users/looaah/Onedrive%20-%20ZuydHogeschool/Downloads/CI-BB-eindrapport2014.pdf>):

| Most common comorbidities categories (according to Nikolopoulos, 2008) |    |
|--|----|
| Cognitive  | 10 |
| Physical   | 20 |
| Autism spectrum  | 4  |
| Behavioural  | 1  |
| Visual   | 5  |
| Orofacial  | 0  |
| Vocal  | 0  |
| Language and communication   | 2  |



Is there any National Registry for Cochlear Implants available in your country?

Yes, since 01-01-2019 there is a register for all traceable implants, for the protection and health of clients. Cochlear implants are included in this register. (<https://wetten.overheid.nl/BWBR0041165/2019-01-01>)

Name: Landelijk Implantaten Register (<https://lir.cibg.nl/>). Not free accessible for the public.

## 2. Existing legislation and policies in the field of cochlear implantation and also in rehabilitation of the CI children, available in your country.

### 2.1 The history/start of the CI implants in your country

In 1985 the first implant was placed at an adult patient in the Netherlands. Selection criteria were more strict than they are now. The patient had to be completely deaf, while nowadays residual hearing is common for many patients. In 1992 the first child was implanted.

(<https://www.opciweb.nl/2020/08/beknopte-geschiedenis-van-het-cochleair-implantaat/#:~:text=In%201985%20werd%20in%20Nederland,ervoor%20in%20aanmerking%20te%20komen.>)

### 2.2 List the national legislation and policies that support the CI implants and the paediatric rehabilitation after CI in your countries

Cochlear implants are available for:

- Very young children deaf or hard of hearing from birth on. For these children hearing and learning how to speak is not possible in the regular way. First conventional hearing aids are fitted, to look at the benefit of it. This gives a better expectation of the effect of a CI.
- Children with a progressive hearing loss and will become deaf or severely hard of hearing.
- Children born with normal hearing, who became deaf or hard of hearing caused by for example meningitis.

Children are implanted as young as possible, to increase the beneficial values. In general they are implanted in the first year of life. Implantation before the age of 5 is desirable. (<https://www.kno.nl/patienten-informatie/oor/cochleair-implantaat/>)

Legislation:

- Name: Landelijk Implantaten Register (<https://lir.cibg.nl/>), register for all traceable implants, for the protection and health of clients
- <https://www.volksgezondheidszorg.info/onderwerp/gehoorstoornissen>; information about public health care regarding hearing problems



### **3. Intervention strategies for supporting the rehabilitation of the CI children**

#### **3.1 How is the rehabilitation organised in your country? What kind of rehabilitation interventions are done in your country? What is the content and the frequency of the rehab?**

The rehabilitation is a standard part of the CI process and is compensated by the insurance.

First the audiologist sets the CI up. The revalidation involves hearing training (speech and language therapist), but also looks at the social and emotional aspect (social worker and psychologist), the surroundings and the general communication. (<https://www.logopedie.nl/kennis/revalidatie-na-plaatsing-ci/>)

Frequency is organised individually, but more often in the beginning.

#### **3.2 What are the different steps in rehabilitation of the CI children in your country?**

During the first fitting the audiologist instructs the child and the parents in the working of the CI. During this consult, stimulation levels are defined. Other parameters are set up to optimise the perception of sound information. During the first months after surgery, several fittings are needed to increase the quality of sound information. The goal is to stabilise and optimise the adjustments.

After surgery children need to get used to the signal generated by the implant. The brain needs to get used to this (new) form of stimulation and learn how to interpret these signals.

Therefore it is essential to attend hearing training. This training will help to process the adaptations. The duration and difficulty of the hearing training are dependent on the cause of the hearing loss and the duration of the hearing loss. Children that are born deaf need more time for rehabilitation after placement of the CI than children that have learned to hear or even learned to speak and then became deaf.

The basic principles of the hearing training are: development of sound perception by identifying several sound sources, listening and learning to speak and talk. (<https://www.oticonmedical.com/nl/cochlear-implants/new-to-cochlear-implants/activation-and-rehabilitation/child-treatment-process>)

The hearing training consists of 4 steps: detection, discrimination, identification, interpretation/understanding speech.

In the first step of detection, the client has to decide whether there is a sound or not.

In the second step of discrimination, the client decides whether noises are the same or different. He doesn't have to explain the differences.

In the third step (identification) the client relates noises and sources. What source gives what sound?

In the fourth step the client interprets the given instruction or understands what is said.



All this training is based on the principles:

- Easy → difficult (big differences to small differences)
- Closed set → open set
- With lip reading → without lip reading
- Without background noise → with background noise
- Short distances (loud) → more distance (less loud or soft)

### 3.3 Which are the support services, support organisations and rehabilitation programmes offered in your country

NOTE: There is no separation between private and state sector in rehabilitation. This is provided by the hospital and insurance companies.

Beside the rehabilitation as described at 3.1 and 3.2 there are organisations where people (parents) can go for information etc.

- <https://www.opciweb.nl>
- [www.kentalis.nl](http://www.kentalis.nl)
- <https://www.stichtinghoormij.nl/nl-nl/ci/alles-over-cochleair-implantaat>
- <https://www.stichtinghoormij.nl/nl-nl/slechthorendheid/leven-met-slechthorendheid/wie-helpt-mijn-kind-verder>
- <https://www.kno.nl/patienten-informatie/oor/cochleair-implantaat>
- <https://vhz-online.nl/ouders-over-cochleaire-implantatie-van-dove-kinderen-met-bijkomende-bepkeringen>
- <https://www.doof.nl/algemeen/kom-in-contact-met-ci-gebruikers-of-ouders-van-kinderen-met-ee-ci/>
- <https://www.onici.be>
- <https://www.vlok-ci.eu/>

### 3.4 School integration. What kind of support is offered to the CI children in the mainstream schools? Who are the actors involved and which is their role?

Often these young children attend regular primary schools, with an ambulant mentor. They look at acoustics, light, (background)noise, placement in the classroom etc. In case of need organisations as Kentalis can be involved, even as speech- and language therapists.

(<https://www.kentalis.nl/ervaringsverhalen/wat-ee-kind-met-ee-ci-nodig-heeft-de-klas> )

(<https://www.vlok-ci.eu/Tips%20integratie%20lagere%20school.pdf> )



#### **4. Training programmes for speech and language therapists**

##### **4.1 Training programmes for speech and language therapists in the formal education**

The basic training for speech and language therapist is a part of the formal education during the bachelor study. They learn the basics about hearing training after placement of a cochlear implant, as mentioned at 3.2. they also learn the basics about lip-reading. Both elements are a part of the bachelor degree, all over the country at every University in the Netherlands.

The education is mostly based on existing patient cases, used to describe the therapy and process and tasks from the speech- and language therapist. There is much attention for Interprofessioneel care in these cases.

##### **4.2 Training programmes for speech and language therapists in the non-formal education**

After the bachelor speech and language therapist who work with patients are registered in a quality register. For this register it is necessary to collect “points” to prove your knowledge is up-to-date and to show you are following refresher courses.

When working with patients, this register is not voluntarily!

Most employers also demand their employees to refresh their knowledge. In consultation with your employer you choose with course you can and will follow, or which congresses or symposia you will visit. This can be national or international. There are no standard programmes to follow, this is individually made based on expertise, knowledge, experiences, interests etc.

