PMU82

Varying willingness-to-pay based on disease burden: impact on health technology assessment outcomes of specialist drugs in the Netherlands

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Introduction and objectives

Economic evaluations are commonly required as part of health technology assessments (HTAs), to support reimbursement decisions. Outcomes of such evaluations are often expressed in incremental cost-effectiveness ratios (ICERs), which consider the costs and quality-adjusted life years (QALYs) of the new intervention compared to alternative options.

Some countries have explicit willingness-to-pay (WTP) thresholds for the cost-effective use of healthcare resources. In the Netherlands in 2015, the Dutch healthcare institute (ZIN) formally introduced variable WTP reference values based on disease severity using the proportional shortfall method. This method calculates the health loss (in QALYs) due to living with a health condition, as a proportion of the total potential health someone could have had without the condition. This produces a disease burden value of between 0 (no health loss) and 1 (full health loss).[1] Burden of disease ranges of 0.10–0.40, 0.41–0.70 and 0.71–1.00 are associated with WTP thresholds of €20,000, €50,000 and €80,000 per QALY gained, respectively. With these ranges, ZIN aimed to reflect that society is willing to pay more for those with greater need.[1,2]

In 2018, ZIN announced that submissions would, from then on, present elements of the proportional shortfall calculation transparently.[3]

Objective: assess whether introducing variable WTP thresholds that depend on disease severity has changed ZIN HTA outcomes for specialist (hospital) drugs.

Methods

The ZIN website was searched for recommendations published between 1 January 2013 and 6 March 2019 relating to specialist drugs. Advice documents of ZIN's advisory committee and ZIN reports without pharmaco-economic evaluation were excluded.

After an initial assessment of specialist products, the search was extended by including outpatient products using the same inclusion criteria, for a more holistic view.

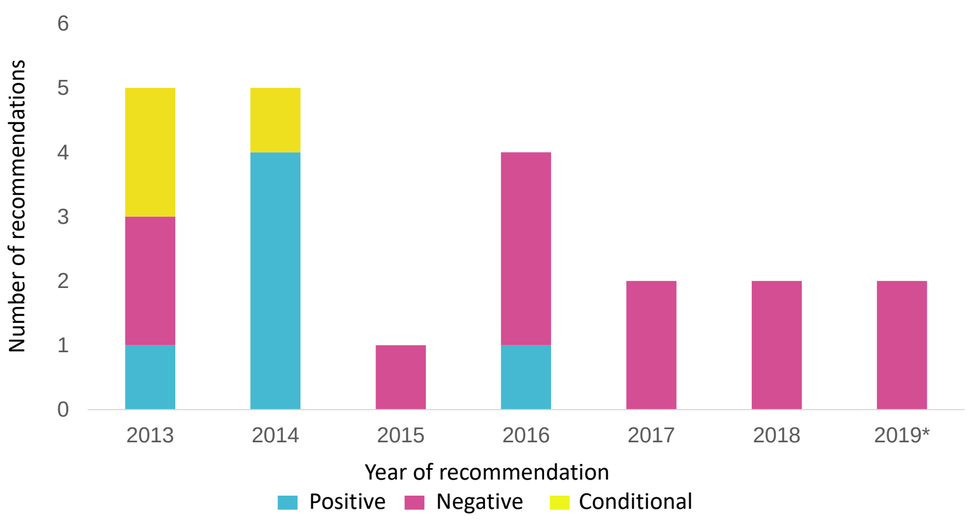
Results

ZIN outcomes of specialist products

A total of 29 reports with ZIN recommendations for specialist products were identified, of which 21 included a pharmaco-economic evaluation. **Figure 1** gives an overview of the outcomes of the 21 assessments:

- Before 2015, eight products received either a positive recommendation (n = 5, 50%) or a recommendation for conditional reimbursement (n = 3, 30%). Two products (20%) received a negative recommendation because they did not meet the 'standard of science and practice'
- From 2015, only one product (9%) has received a positive recommendation, with strict restrictions. The remaining 10 products initially received a negative recommendation (91%), mainly due to substantial high budget impact estimates (ranging from ~€17 million to €118 million per year) and/or unfavourable or uncertain ICERs
  - Nine either had an estimated ICER above their WTP reference value or were at high risk of exceeding the reference value. Only one product's ICER was below the WTP reference value, but this product had a very high budget impact
  - Eight products were reimbursed after successful price negotiations with the Minister of Health Welfare and Sport (VWS)

Figure 1: Outcomes of ZIN assessments of specialist products

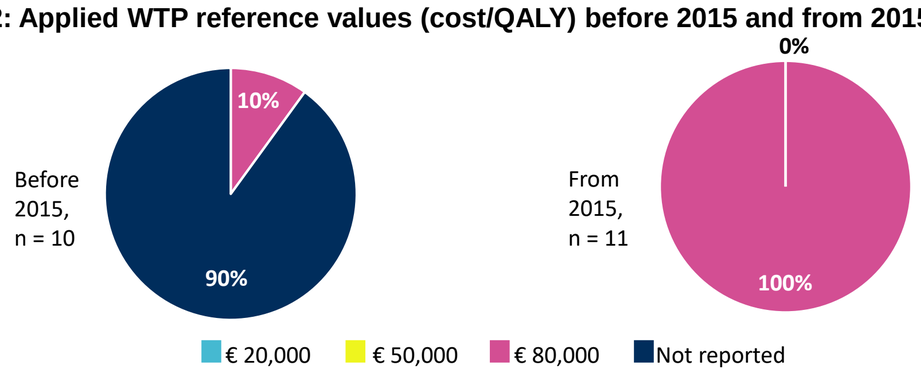


Key: ZIN, Zorginstituut Nederland
Note: * The search was conducted up to March 2019. Therefore, the overall number of assessments in 2019 is likely to increase. From 1 February 2019, ZIN replaced the conditional reimbursement schemes by a new subsidy scheme for promising care.[4,5]

WTP reference values

- When looking at the applied reference values, we observed a clear distinction between outcomes before and after 2015 (**Figure 2**). As expected, before 2015, most reports did not include a reference value (n = 9; 90%). From 2015, all reports included a reference value (n = 11, 100%)
- Interestingly, all 12 reports including reference values used a reference value of €80,000/QALY, corresponding to the highest level of disease burden (between 0.71 and 1.0).

Figure 2: Applied WTP reference values (cost/QALY) before 2015 and from 2015

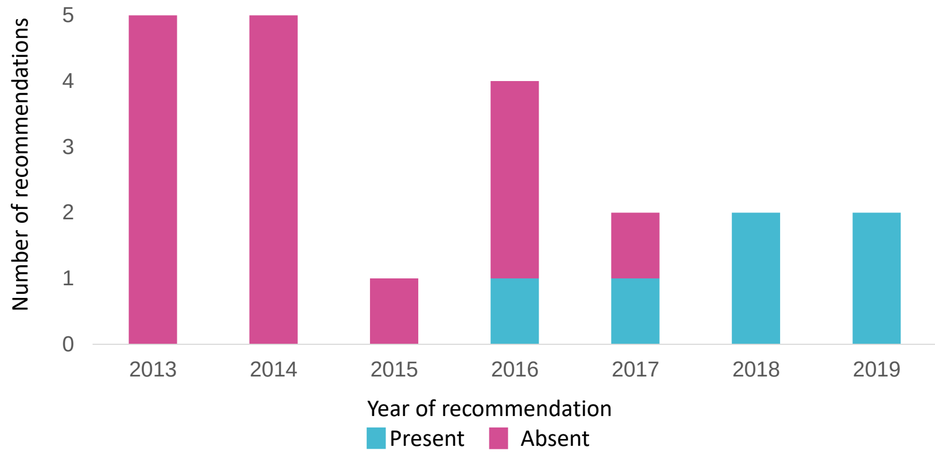


Key: QALY, quality-adjusted life year; WTP, willingness-to-pay.

Proportional shortfall calculations

- Since 2015, there has been a gradual increase in proportional shortfall calculations being reported (**Figure 3**)
- In line with the ZIN 2018 guidance, all reports included proportional shortfall calculations from 2018 onwards (n = 4; 100%) with disease burdens ranging from 0.83 to 0.96

Figure 3: Reporting of transparent proportional shortfall calculations for specialist products



Outpatient products

To further explore the granularity of disease burden claims, we investigated outpatient products that required an economic evaluation (i.e. products that are non-substitutable, with a claimed added clinical benefit and a budget impact of €2.5 million or more), based on the hypothesis that outpatient products may address treatment needs of conditions with a lower disease burden.

- 104 ZIN recommendations for outpatient products were identified, of which 92 did not include an economic evaluation (e.g. because they did not meet the criteria for an economic evaluation or received an exemption). A pharmaco-economic report was available for 12 submissions
- Before 2015, only one report referred to a WTP reference value (14%), while six did not (86%). As anticipated, none provided proportional shortfall calculations. Of these, five products (71%) received a positive and two a negative recommendation due to cost-effectiveness reasons (29%)
- From 2015, all five identified reports included reference values, including a range of disease burden levels (**Table 1**). Three reports included a proportional shortfall calculation (60%) and two did not (40%). Two products (40%) received a positive and three (60%) a negative recommendation because reimbursement was not considered necessary (n = 1) or the cost-effectiveness analysis was of insufficient methodological quality (n = 2)
- Of note, none of the assessments were post-2018. Therefore, we cannot draw conclusions about the impact of the ZIN guidance published in 2018 on the assessment of outpatient products

Table 1: Applied reference values for outpatient products requiring an economic evaluation

Year	€20,000/ QALY	€50,000/ QALY	€80,000/ QALY	Multiple reference values*	NR
Pre-2015	1 (14%; DW: 0.075)	0 (0%)	0 (0%)	0 (0%)	6 (86%)
From 2015	1 (20%; PS: 0-0.4)	1 (20%; DB: 0.194**)	2 (40%; PS: 0.77; DB: 0.015–0.383**)	1 (20%; PS:0.25–0.49)	0 (0%)

Key: NR, not reported; DB, disease burden; DW, disability weight; PS, proportional shortfall; QALY, quality-adjusted life year.
Notes: * In one case the suggested reference value varied by subgroup and was either €20,000 or €50,000/QALY; ** Based on a World Health Organization value, not PS

Discussion

This study showed that WTP reference values have been consistently applied in ZIN assessments of both specialist and outpatient products since their introduction in 2015. In line with the 2018 guidance, all reports transparently reported the proportional shortfall calculation from 2018 onwards.

ZIN outcomes for specialist products have changed since 2015. Before 2015, outcomes of specialist products were varied; from 2015, most HTAs for specialist products received a negative recommendation and were later approved after successful price negotiations with the Minister of VWS.

All specialist products from 2015 onwards claimed the highest level of disease burden and most products exceeded the WTP reference value or were expected to do so. This may be because hospital products may target more burdensome diseases. Indeed, for outpatient products, the claimed WTP reference values were more varied, as were the HTA outcomes.

The HTA landscape has rapidly changed as more expensive technologies have entered the market, straining the healthcare budget. In recent advice documents, ZIN explicitly questioned the justification of high drug prices and stressed the need for price negotiations. In addition, the Minister of VWS introduced the 'sluice' in 2015; a measure that allows the Minister of VWS to put the influx of very expensive specialist products on hold until further assessment. This study's findings may be explained in part by the introduction of the WTP reference values, in combination with the measures taken by VWS to manage expensive technologies.

References

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Further information is available on request. Please visit BresMed at Stand C3-046.

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