The difference between regulatory and market access decisions on treatment availability for new drugs in six common cancers across Australia, Canada, and Europe

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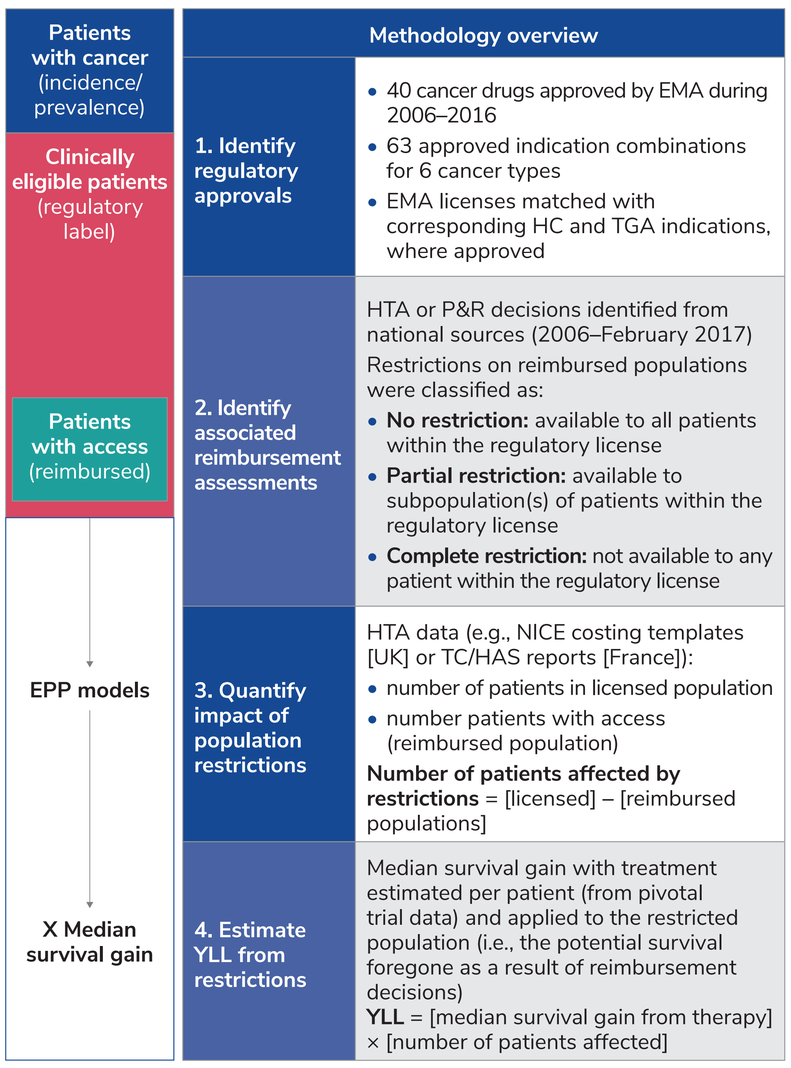
Background and objectives

- Cancer is associated with high levels of mortality, morbidity, and economic burden.
- In many countries, newly licensed therapies are subject to health technology assessment (HTA) or pricing and reimbursement (P&R) processes that have evolved in response to the significant budgetary challenges that medical advances may bring.
- Assessments may restrict access to new medicines to a subset of the population covered by the regulatory license. Thus, discrepancies can arise between the clinically eligible population (under the license) and the population for which treatment is funded through public reimbursement.
- The study objective was to identify discrepancies between regulatory and reimbursement decisions across 13 countries and quantify their impact on patients – both the number of clinically eligible patients without access and the associated years of life lost (YLL).

Methods

- Six common cancers were identified (breast, kidney, lung, melanoma, multiple myeloma, and prostate). New oncology therapies granted a first license by the European Medicines Agency (EMA), Health Canada (HC), or the Australian Therapeutic Goods Administration (TGA) between January 2006 and June 2016 were identified (Figure 1) along with any relevant follow-on indications.

Figure 1: Methodology for assessing the impact of reimbursement restrictions



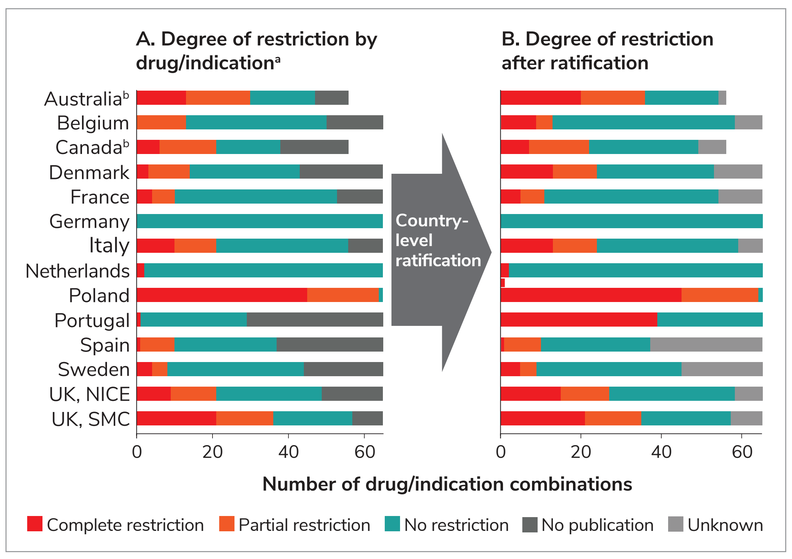
EMA, European Medicines Agency; EPP, eligible patient population; HAS, Haute Autorité de Santé (High Authority for Health); HC, Health Canada; HTA, health technology assessment; NICE, National Institute for Health and Care Excellence; P&R, pricing and reimbursement; TC, Transparency Commission; TGA, Therapeutic Goods Administration; YLL, years of life lost

- Two sets of analyses were conducted:
  - based solely on publicly available national HTA/P&R documents
  - in cases where relevant documents could not be identified, other publicly available information and communication with HTA/P&R experts were used to ratify the reimbursement status; where no conclusions could be drawn, the outcome of the assessment was considered unknown and assumed unrestricted in the base case.
- Each assessment was considered independently, and data from national reimbursement assessments were used to establish the clinically eligible population and the reimbursed population.[1]
- Scenario analyses demonstrate the impact of assumptions around missing assessments (i.e., resulting either in complete restriction [high-restriction scenario] or no restriction [base case, low-restriction scenario]) and the estimated size of the affected patient population.

Results

- From 63 regulatory approvals, 65 reimbursement assessments were identified for breast cancer (10 drug/indication combinations), kidney cancer (7), lung cancer (20), melanoma (13), multiple myeloma (9), and prostate cancer (6), resulting in 892 possible individual reimbursement outcomes.
- Based on published data only, 13% of national assessments resulted in complete restriction, and 15% in partial restriction (Figure 2A).
- After ratification (Figure 2B), 35% of drug/indication combinations were either completely (22%) or partially (14%) restricted.

Figure 2: Degree of population restriction for drug/indication combinations



[a] Based on published assessments only. [b] Nine drug/indication combinations approved by EMA were not licensed in Canada or Australia.

- Based on the ratified data:
  - The extent of restrictions differed by country, ranging from 0% in Germany and 3% in the Netherlands to higher proportions in Australia (64%), Portugal (60%), and Poland (98%) (Figure 2B).
  - Over 250,000 patients were estimated to be affected by the restrictions, resulting in over 70,000 YLL (Table 1).

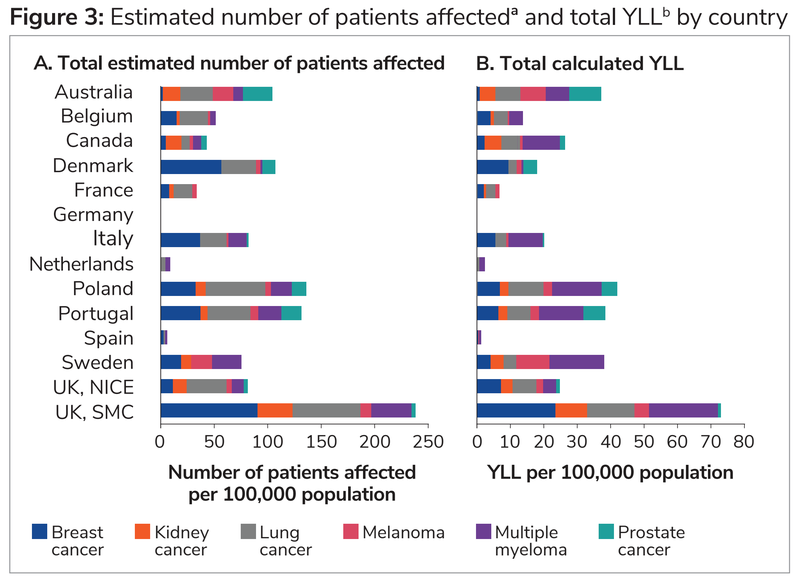
Table 1: Estimated impact of reimbursement national restrictions by cancer type across Australia, Canada, and 11 European countries

Cancer type	Total incidence[a]	Ratified data	
		Total number of patients without access[b]	Total YLL
Breast	346,215	62,952	15,591
Kidney	78,034	24,990	7,273
Lung	290,629	91,810	10,970
Melanoma	88,690	16,830	6,467
Multiple myeloma	33,375	38,330	24,655
Prostate	349,072	18,963	6,252
Total	**1,186,015**	**253,875**	**71,208**

[a] Across 13 countries, data from GLOBOCAN 2012. [b] Assumptions: 100% market uptake for every drug/indication; each reimbursement assessment is independent; assessments can be added together to estimate impact.

- The number of clinically eligible patients without access through public reimbursement was consistently high in the UK (Scotland, 238 patients per 100,000 population; England, 81), Poland (136), and Portugal (132) (Figure 3).
- No systematic differences in access restrictions were identified across the six cancer types (Figure 3). The highest estimated rate of patients without access to publically reimbursed treatments was for lung cancer; multiple myeloma was associated with the highest YLL burden.

Figure 3: Estimated number of patients affected[a] and total YLL[b] by country



[a] Assumptions: 100% market uptake for every drug/indication; each reimbursement assessment is independent; assessments can be added together to estimate impact. [b] These analyses do not account for differences in population size or cancer epidemiology between countries.

Scenario analyses

- The number of estimated drug/indication combinations with restriction varied between the base case (low-restriction assuming unknown indications are without restrictions) and high-restriction (assuming unknown indications are complete restrictions) scenarios.
- Differences highlight the effect of lack of clarity around some national HTA processes and the potential for the impact of restrictions to be greater than estimated.
- In the high-restriction scenario, an estimated 408,296 patients were affected, with 118,031 YLL. Most patients were affected by lung cancer restrictions (153,893 patients), and multiple myeloma had the highest YLL (51,545 YLL).
- Using TC data for base case calculations, an estimated 300,942 patients were affected, resulting in 74,571 YLL. The difference from the NICE-based calculations suggests that the impact in terms of both patients affected and YLL could be higher than in the base case.

Discussion and conclusions

- Patient access to cancer drugs is restricted to varying degrees through national reimbursement assessments in Europe, Canada, and Australia. Scenario analyses suggest that, although results differ depending on assumptions, the base case analysis may underestimate the impact of restrictions in some countries.
- Country-specific differences in P&R decision-making criteria play a pivotal role in determining the patient population eligible for reimbursement, as does the specificity of the licensed indication and the strength of the evidence base, although these are more consistent across countries.
- The nature and extent of restrictions are not consistent across countries, resulting in inequitable access to new cancer medicines, which affects patients, families, caregivers, and clinicians.
- Variation in access across countries is expected in part because of different willingness-to-pay thresholds for oncology medicines.[2] Thresholds are influenced by healthcare system characteristics such as healthcare system structure, funding sources, and government prioritization of healthcare financing.
- **Our results are directly relevant to health policy initiatives in Europe that aim to improve access to medicines and reduce differences across member states.**[3,4]

References

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Footnotes

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