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Health Policy Analysis

Implementing Risk-Sharing Arrangements for Innovative Medicines: The Experience in Catalonia (Spain)

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ABSTRACT

Objectives: Publications assessing health and economic outcomes of risk-sharing arrangements (RSAs) are limited. Better knowledge of these outcomes would shed light on the pertinence of such arrangements, informing design improvements for the future. The aim of the study is to describe the different types of RSAs implemented in Catalonia and their health and economic outcomes.

Methods: Retrospective descriptive analysis of RSAs implemented from January 2016 to December 2019 in the Catalan Health Service, CatSalut. Individual RSAs were reviewed and categorized according to standard RSA guidelines. Relevant health and economic outcomes pertaining to the RSAs were analyzed using aggregate data recorded in Catalan central registries.

Results: A total of 15 RSAs were implemented over the study period (10 of which are still ongoing). A total of 8 consisted of performance-linked reimbursements (PLRs) and 7 of cost-sharing arrangements (CSAs). The arrangements were implemented in the oncohematology (n = 11), rare disease (n = 3), and neurology (n = 1) areas. A total of 951 patients were included in PLR and 73% achieved the target health outcomes. Total medication costs were €9 295 755 of which 11% were refunded to CatSalut. CSAs involved 2066 patients and resulted in overall refunds of €1 349 564 (2.61%) for CatSalut.

Conclusions: Both PLRs and CSAs were used to manage the different uncertainties related to accessing innovative medicines in Catalonia. The data generated provide relevant information to inform decision-making, allowing an adaptation of the initial recommendation for use and access. Additional efforts are required to increase the RSA assessments and their publication.

Keywords: Catalan Health Service, cost-sharing arrangements, innovative medicines, performance-based risk-sharing arrangements, risk-sharing arrangements.

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Introduction

Innovative medicines are essential for improving public health, bringing new opportunities to treat certain diseases. Between 2015 and 2019, the European Medicines Agency recommended 416 medicines for marketing authorization.[1] Of these, approximately 42% had a new active substance that had never previously been authorized in the European Union.[1] Nevertheless, innovative medicines tend to have limited evidence of clinical benefit, depending on the study design, clinical trial data and its robustness, and alignment with daily clinical practice,[2-4] and these treatments are often linked to high prices.[2,5-7] Thus, innovative medicines are generally associated with uncertainties around their effectiveness, cost-effectiveness, or budget impact.[8,9]

Access to innovative medicines is challenging, so public healthcare systems are increasingly introducing nontraditional funding mechanisms, such as risk-sharing arrangements (RSAs).[9-11] These are designed to manage uncertainties arising from limited evidence for making decisions about public coverage of innovative medicines. RSAs use a variety of mechanisms to maximize effective medicines use or limit their budgetary impact.[5] At the time of writing, diverse RSAs had already been implemented in at least 28 of 41 countries belonging to the Organisation for Economic Cooperation and Development and the European Union.[5]

According to the International Society for Pharmacoeconomics and Outcomes Research,[8] RSAs are categorized into performance-based RSAs (PBRSAs) and cost-sharing arrangements (CSAs). In turn, PBRSAs are divided into performance-linked reimbursements (PLRs), which may link payments to outcomes (eg, money back for nonachievement of target outcomes or conditional treatment continuation based on intermediate endpoints) or care process (eg, adherence to clinical guidelines) and coverage with evidence development. CSAs include budget capping, utilization capping, discounts, and price–volume arrangements.

Spain has universal health coverage, covering healthcare for approximately 99.1% of the population through the national health

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service.[12] The Ministry of Health is responsible for issuing healthcare proposals, planning and implementing national healthcare guidelines, and making decisions about pricing and reimbursement of medicines.[12] Nevertheless, the Spanish National Health Services is decentralized, so regional healthcare systems are responsible for paying and ensuring public access to healthcare.[12] Catalonia is one of Spain's 17 regions, with 7.7 million inhabitants (16.3% of the Spanish population). The Catalan Health Service, CatSalut, is responsible for resource allocation, budget planning, and policy development to ensure equitable and efficient access throughout Catalonia. It operates through a multiprovider system, known as the Integrated Public Health System of Catalonia (SISCAT), contracting healthcare services based on principles of justice, quality, sustainability, and responsiveness to population needs.[13] These contracts allow alternative funding mechanisms for medicines linked to the achievement of agreed outcomes, as specified in the Catalonian Health Plan objectives.[14]

Since 2008, CatSalut has run a specific program for medicine appraisal and decision making, the Pharmacotherapy Harmonisation Programme.[15] Its aim is to define the therapeutic positioning of innovative medicines and their prioritization for use, according to the added value,[16] the principles of rational use, and the availability and optimization of resources, while guaranteeing equity in treatment access throughout Catalonia.[14,15] The Pharmacotherapy Harmonisation Programme comprises 2 advisory councils (Consell Assessor de la Medicació Hospitalària [CAMH]; and Consell Assessor de Medicació de l'Atenció Primària i Comunitària i Atenció Especialitzada [CAMAPCE]; in their Catalan abbreviations) and a decision-making commission (Comissió Farmacoterapèutica [CFT]-SISCAT in their Catalan abbreviations). The 3 expert panels are multidisciplinary in nature, including members with different professional backgrounds and patient representatives. The advisory councils develop technical reports on innovative medicines and recommendations for their use: CAMH deals with hospital outpatient drugs (HODs) (eg, antivirals for human immunodeficiency virus, oncological therapies, orphan drugs) and CAMAPCE with primary and specialized care prescriptions (eg, antidiabetic treatments, chronic obstructive pulmonary disease treatments).[15] CFT-SISCAT is in charge of the final proposal regarding criteria for use, clinical variables, and access conditions for both types of medicines.[15] HODs can be used in 3 situations: under specific clinical criteria defined by the CFT-SISCAT, which can be aligned with or stricter than those of the reimbursed indication; under individual authorization, in which case treatment has to be approved by an expert committee, or exceptional use, if there is insufficient evidence to support its recommendation. To determine these conditions, the Pharmacotherapy Harmonisation Programme requires recording clinical variables for HODs in a centralized registry (Registre de Pacients i Tractaments de Medicació Hospitalària de Dispensació Ambulatòria [RPT-MHDA] in its Catalan abbreviation), which is linked to the billing process.[17] Data collection through this registry allows verification of treatment effectiveness, alignment with the recommendations, establishment of quality standards, benchmarking with hospitals, and feedback on the decision-making process. In addition, the Pharmacotherapy Harmonisation Programme identifies uncertainties and the subsequent need to implement RSAs. Between 2008 and 2019, it assessed 278 HODs.

The first RSA in Catalonia was based on PLR and was formalized in 2011 among the Catalan Institute of Oncology, CatSalut, and the marketing authorization holder (MAH) of the medicine.[18] Based on this experience, CatSalut implemented a pilot program and, together with Catalan Institute of Oncology and other Catalan hospitals, supported the establishment of more RSAs based on PLR. Thereafter, in 2014, a guideline was developed to standardize the criteria for RSA implementation,[9] and in 2016, CatSalut adopted a leadership role in the establishment of these arrangements by setting up systemic RSAs that could be adhered to on a voluntary basis by all SISCAT hospitals.[19] To support the development and management of systemic RSAs, a multidisciplinary working group was set up to establish the optimal arrangement to use in a given situation and assess the achievement of objectives, the feasibility of the clinical process of care, and financial flows.[19] In addition, each RSA had its own follow-up committee with annual meetings to share data on health and economic outcomes and discuss the overall experience.[19]

There is abundant literature on RSAs, focusing on conceptual elements (definition and terminology),[8,11,20] empirical issues (reviews of the temporal and geographical implementation),[21-25] and subjective assessments by stakeholders.[26,27] Nevertheless, publications assessing the results of RSAs are limited.[2] Better knowledge of health and economic outcomes would enrich the understanding of their pertinence, which could help improve the design of future RSAs.[2] The aim of the study is to describe the different types of RSAs implemented in Catalonia and their health and economic outcomes.

Methods

Identification and General Description of RSAs

Adopting the perspective of the public healthcare payer (CatSalut), we performed a descriptive analysis, reviewing data for each RSA that involved HODs (eg, type, signature date, duration, medicine name, indication).[19] Details are not presented here because of the confidential nature of RSAs. The included RSAs were signed among CatSalut, SISCAT hospitals, and the MAH from January 2016 to December 2019. The descriptive analysis was performed according to the RSA categories in our guideline[9] and international guidelines,[8] which characterize the RSAs according to the uncertainties they are meant to addressed: around health outcomes (PBRSA) or economic outcomes (CSA). In addition, we examined the number of implemented RSAs, the number of different medicines and diseases, the number of MAHs involved, their duration, and the reasons for their termination.

Assessment of PBRSAs

A retrospective analysis of health and economic outcomes considered aggregated information of the implemented PBRSAs.

To assess health outcomes, we analyzed information prospectively recorded by healthcare professionals in the HOD registry (RPT-MHDA), which has been available for all SISCAT hospitals since the implementation of the Pharmacotherapy Harmonisation Programme.[17] This registry contains (1) basic patient data (eg, personal identification code, age, sex), (2) treatment (eg, medicine identification, therapeutic indication, treatment initiation and end date, prescribing hospital), (3) clinical variables at treatment initiation (eg, performance status, cancer genomic mutations, multiple sclerosis scales), (4) clinical variables during follow-up (eg, performance status, Response Evaluation Criteria in Solid Tumours, hematology or biochemistry parameters), and (5) clinical variables at treatment discontinuation (toxicity, progression, death).[17]

To assess the economic outcomes, we used data on medicines expenditure collected in a specific invoicing application for healthcare services, known as the Health Services Application (FSS, in their Catalan abbreviations).[28] The application includes patient-related variables (personal identification code, age, sex) and treatment costs (medicine identification, dispensation and billing date, units, and cost).

Table 1. Risk-sharing arrangement by category and general description.

Disease/ therapeutic area	Uncertainty	Type of risk-sharing arrangement	Start-end date
PBRSAs*			
Colorectal cancer	Efficacy/effectiveness	Performance-linked reimbursement	2016-ongoing
Multiple sclerosis	Efficacy/effectiveness	Performance-linked reimbursement	2017-2019
Breast cancer	Efficacy/effectiveness	Performance-linked reimbursement	2017-2019
Melanoma	Efficacy/effectiveness	Performance-linked reimbursement	2017-2019
Melanoma	Efficacy/effectiveness	Performance-linked reimbursement	2017-ongoing
Colorectal cancer	Efficacy/effectiveness	Performance-linked reimbursement	2017-ongoing
Urothelial carcinoma	Efficacy/effectiveness	Performance-linked reimbursement	2019-ongoing
Melanoma	Efficacy/effectiveness	Performance-linked reimbursement	2019-ongoing
Cost-sharing arrangements			
Lung carcinoma	Budget impact (related to treatment duration)	Discount	2018-2019
Lung carcinoma	Budget impact (related to treatment duration)	Price–volume/year	2018-2019
Gastroenterology (rare disease)	Budget impact (related to number of patients)	Budget capping/year	2018-ongoing
Nephrology (rare disease)	Budget impact (related to number of patients)	Budget capping/year	2018-ongoing
Respiratory (rare disease)	Budget impact (related to number of patients out of clinical criteria recommendations)	Selection patient subgroup Price–volume/year	2018-ongoing
Melanoma	Budget impact (related to treatment duration)	Discount	2019-ongoing
Multiple myeloma and 2 other oncohematological diseases	Budget impact (related to treatment duration and number of patients - extended indication)	Budget capping/year	2019-ongoing

PBRSA indicates performance-based risk-sharing arrangements.
*All the implemented PBRSAs were based on performance-linked reimbursements.

The descriptive analysis was performed as follow:

1. Patients were included in or excluded from the analysis based on their fulfillment of all conditions included in each specific PBRSA contract (eligible criteria, follow-up period, missing data).
2. Demographic patient characteristics (age, sex) were collected, and patients were classified by disease or therapeutic area.
3. Health outcomes were described according to the specific conditions in each RSA. Patients were classified as: those who achieved the health outcomes agreed on the RSA; those who did not achieve the health outcomes and discontinued the treatment because of nonclinical response, death, or toxicity; and other patients who discontinued the treatment because of nonclinical reasons (eg, patient decision) or who had no available data for the clinical assessment at the follow-up.
4. Economic outcomes were analyzed based on PBRSA contract conditions. We describe the total medicines costs, based on the reimbursed price and the total amount refunded to CatSalut during the study period.

Assessment of CSAs

A retrospective analysis of economic outcomes used aggregated information from all implemented CSAs. Data concerning medicine expenditure were collected from the FSS invoicing application.[28] Additionally, we used the RPT-MHDA registry[17] to identify specific demographic patient characteristics or clinicopathological characteristics if necessary.

The descriptive analysis was performed as follows:

1. Patients were included in or excluded from the analysis based on their fulfillment of all conditions included in each specific CSA contract (eligible criteria or missing data).
2. Descriptive statistics included demographic patient characteristics (age, sex).
3. A descriptive analysis of the economic outcomes of CSAs assessed the total medicines costs, based on the reimbursed price and the total amount refunded to CatSalut during the study period.

Results

Identification and General Description of RSAs

During the study period, CatSalut implemented 15 RSAs, 10 of which are still ongoing. The first RSA was signed in 2016, whereas 5 were formalized in 2017, 5 in 2018, and 4 in 2019. Eight were PBRSAs and 7, CSAs (Table 1).

The RSAs involved 14 different monotherapies or combination treatments for 12 different diseases. Two different RSAs dealt with 4 medicines that had several approved indications. Most of the RSAs concerned the oncohematological diseases (n = 11), followed

Table 2. Patient characteristics by disease in performance-linked reimbursement arrangements.

Diseases	Melanoma	Breast cancer	Colorectal cancer	Urothelial carcinoma	Multiple sclerosis	Total
Patients, n	119	343	356	30	103	951
Age (years), median [SD]	66 [15]	57 [12]	66 [11]	71 [7]	62 [11]	62 [13]
Female, n (%)	50 (42)	342 (99)	102 (29)	6 (20)	59 (57)	559 (59)
Male, n (%)	69 (58)	1 (1)	254 (71)	24 (80)	44 (43)	392 (41)

SD: standard deviation.

by rare (n = 3) and neurological (n = 1) diseases. Negotiations took place with 11 different MAHs.

All of the PBRSAs, were based on PLR, meaning that CatSalut paid the reimbursement price for all treatments upfront, but the MAH refunded the whole cost for patients who did not achieve the intermediate clinical targets defined in the RSA. The clinical evaluation timeframe was 2 to 24 weeks.

CSAs included discounts (n = 2), budget capping (n = 3), and price–volume arrangements (n = 2).

The mean duration for concluded RSAs was 24 months (SD 8). At study end, the mean duration for ongoing RSAs was 22 months (range 7-45).

A total of 5 RSAs concluded during the study period for different reasons:

1. In 1 PLR, the health outcomes collected for 3 years provided data on treatment effectiveness and nonachievement of target outcomes. These data informed negotiations that culminated in a discount based on health outcomes.
2. In 1 PLR, healthcare professionals suggested changing the health outcome of the arrangement based on their experience to provide a better indicator of therapeutic value. Nevertheless, it was not possible to reach a new PLR with the MAH. The data generated from implementation justified the establishment of a discount using the health outcomes.
3. In 1 PLR, the indication was restricted to treatment-naïve patients. The RSA was replaced with a new PLR that also included patients who had been previously treated.
4. In 2 CSAs, the initial conditions changed at national level (reduction of the reimbursed price of the medicine) and it was not possible to negotiate a new CSAs with the MAH.

Results of PBRSAs

A total of 28 of the 65 SISCAT hospitals participated in at least 1 PLR. Of the 1453 patients treated with a medicine under a PLR, 502 (35%) were excluded for not meeting all the conditions established in the arrangement: 22% did not meet eligibility criteria, 63% did not fulfill the follow-up period, and 15% had missing registry data. Of the 951 included patients, 356 (37%) were treated for colorectal cancer, 343 (36%) for breast cancer, 119 (13%) for melanoma, 103 (11%) for multiple sclerosis, and 30 (3%) for urothelial carcinoma. Demographic characteristics by disease are presented in Table 2.

According to the PLR, 697 patients (73%) achieved the target health outcomes during the arrangement period, 198 (21%) did not, and 56 (6%) were categorized as "others." The health outcomes by disease are presented in Table 3 and Figure 1. Regarding oncology, 3% to 63% of patients discontinued the treatment because of radiological progression, loss of performance status, or lack of clinical benefit, 1% to 3% because of toxicity, 0.3% to 13% for both reasons, and 2% to 7% because the patients died. All patients with multiple sclerosis discontinued the treatment due the lack of improvement in mobility.

The total costs for medicines under a PLR during the study period were €9 295 755, of which €1 031 177 (11%) was refunded to CatSalut (approximately 99% for oncology).

Results of CSAs

Regarding CSAs, a total of 2103 patients were treated in 26 of the 65 SISCAT hospitals. Approximately 2% of patients were excluded for not fulfilling the eligibility criteria, leaving a total 2066 analyzed patients: 869 (42%) were treated for lung carcinoma, 22 (1%) for melanoma, 862 (42%) for multiple myeloma or other oncohematological diseases, 83 (4%) for rare gastrointestinal diseases, 117 (6%) for rare renal diseases, and 113 (5%) for rare respiratory diseases. An average of 208 patients per year (SD 246) were included in each CSA, with a mean age of 67 years (range 14-93 years; SD 12), 37% were female, and 63% were male.

The total medicine costs and refunds by type of CSA are presented in Table 4.

Discussion

From 2016 to 2019, a total of 15 RSAs were implemented in Catalonia, of which 67% (n = 10) were still ongoing at study end. The targeted uncertainties were related to the medicine's effectiveness in approximately half RSAs and the potential budgetary

Table 3. Health outcomes by disease in performance-linked reimbursement arrangements.

Diseases	Melanoma	Breast cancer	Colorectal cancer	Urothelial carcinoma	Multiple sclerosis	Total
Patients, n	119	343	356	30	103	951
Patients who achieved the health outcomes, n (%)	73 (61)	322 (94)	257 (72)	4 (13)	41 (40)	697 (73)
Patients who did not achieve health outcomes, n (%)	38 (32)	18 (5)	56 (16)	25 (83)	61 (59)	198 (21)
Other patients, n (%)	8 (7)	3 (1)	43 (12)	1 (4)	1 (1)	56 (6)

Table 4. Total medicine costs and refunds by type of CSA.

Types of CSA	Discount	Price–volume	Budget capping	Total
Patients, n	460	548	1058	2066
Cost*, €	13 890 860	10 754 442	26 821 614	51 689 728
Refunds, € (%)	799 715 (5.76)	549 848 (5.11)	NR†	1 349 564 (2.61)

CSA indicates cost-sharing arrangement; NR, not reached.
*Costs take in account total medicine cost based on the reimbursed price and the total amount refunded to CatSalut.
†None of the CSAs reached the total cost capping.

impact in the rest. This rough balance contrasts with most countries, where CSAs are preferred,[5] probably because of their ease of implementation.[5,6] As in Italy, Estonia, Sweden, Belgium, France, Hungary, and Portugal,[5,24,29] in our setting, PLRs were the most common type of PBRSA implemented, whereas in places such as the United States, Australia, and The Netherlands, coverage with evidence developments predominate.[5,24] Regarding CSAs, different approaches were used depending on the uncertainty to be managed: budget capping to address uncertainties around the number of potential patients to be treated, as reported by Dabbous et al,[6] or a discount or price–volume to address treatment duration uncertainty, in contrast to the patient capping or PLRs used elsewhere.[5,6]

All the RSAs were established for medicines with high potential clinical implications (ie, a potential therapeutic benefit for severe or disabling diseases) and high economic impact such as oncohematological therapies and orphan drugs. Published evidence shows that oncohematology is the most common therapeutic area,[5,21,24,25,29] which is consistent with our experience, where 73% of RSAs were implemented in this area. RSAs have also been proposed for orphan drugs[5,30] as in Catalonia, where 20% of RSA involved rare diseases.

The overall refunds for RSAs over the study period were €2.4 million, or 3.9% of the total expenditure under RSAs and only approximately 0.06% of the total expenditure on HODs in Catalonia. Despite the limited impact on total medicine expenditure, RSAs were able to address the uncertainties of these medicines for 3017 patients. Treatments under RSAs were initially fully paid by each healthcare provider, and afterward, the MAH paid back the refund as defined and regulated by the arrangements. From the CastSalut perspective, the payments established in the RSA were aligned with the FSS invoicing system used in the Catalan multiprovider process.

Of the 951 patients included in the 8 PLRs, CatSalut was refunded for the 21% who did not achieve the target outcomes, representing 1.7% of the total expenditure under RSAs. Had the PLR not been implemented, CatSalut would have paid the total costs of the medicines. PLR could support the proper use of public resources if those medicines are effective, in consonance with different experts who considered PLR an appropriate tool to manage budgetary impact by limiting the payment to patients who achieve the established outcomes.[5] In the case of CSAs, none of the medicines subject to budget capping reached the established yearly threshold of use. Although it is plausible that the number of potential patients treated was overestimated, the implementation of the CSA, together with the criteria for use recommended by CFT-SISCAT, presumably limited overprescriptions and consequently their associated expenditure.

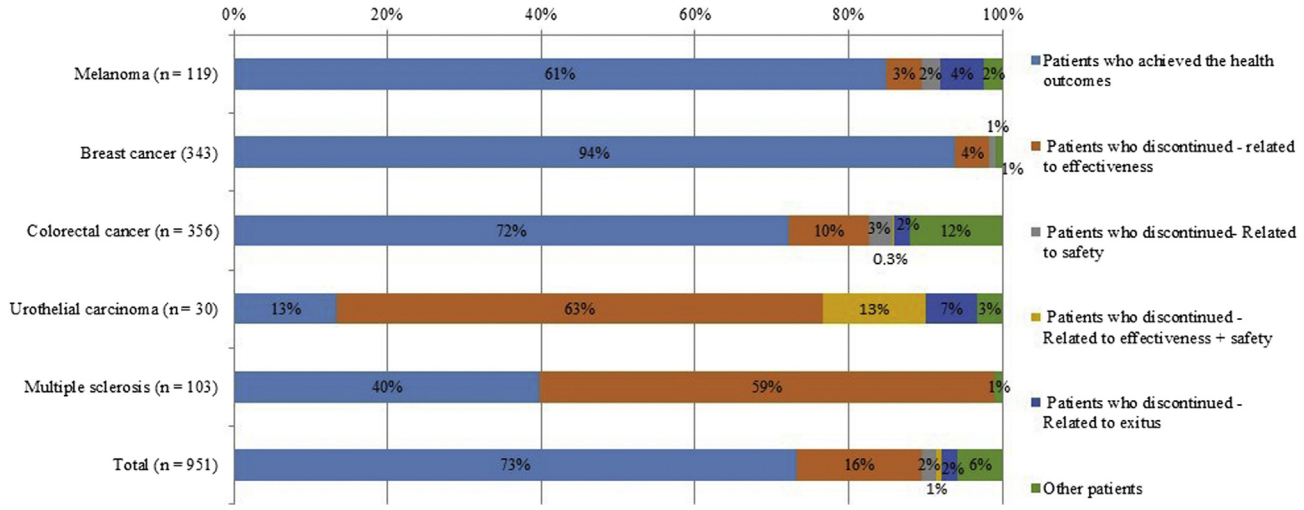
Annual, follow-up meetings were scheduled to inform the MAH about the outcomes and the corresponding refunds according to the conditions included in each specific RSA.[19] For the PLRs, this was particularly relevant for medicines yielding different health outcomes compared with clinical trial evidence or where the agreed PLR conditions seemed misaligned with daily clinical practice (eg, need to extend the follow-up period with extra visits or tests, or to measure health outcomes over many weeks). RSA outcomes and experience of their implementation were shared with the RSA working group and reported to the CFT-SISCAT to assess the initial recommendations. These data proved useful for interpreting whether the RSAs had successfully addressed the uncertainties identified in the appraisal process and if there was any need to change the conditions of the RSAs or their use. In our context, this occurred in 6.7% of the agreements implemented from 2016 to 2019. Similarly, data generated in the RSA process in Italy support the reappraisal of decisions (in this case related to medicine reimbursement) on high-cost medicines.[5] Nevertheless, it would be desirable to develop a quantitative method for measuring uncertainties and integrating these indicators into CFT-SISCAT decision-making. In Australia, experts indicated that without a quantitative assessment of uncertainty, it is unclear whether the collected data sufficiently reduced uncertainty around outcomes or if they provided a better approach for the payment for value than alternative access mechanisms.[5]

Regarding the 5 RSAs that concluded during the study period, the CFT-SISCAT conducted different appraisals based on available data. For 2 RSAs, uncertainties were considered sufficiently addressed, and it was possible to define a payment for value based on health outcomes from the PLR, as seems to be the case for some other authorities responsible for pricing.[7] Additionally, in 1 PLR, the appraisal changed the criteria from "exceptional use" to specific clinical criteria, defined according to the PLR experience. For a third PLR, the appraisal resulted in a recommendation to fully align the eligibility criteria of the arrangement with the whole reimbursed indication. For the remaining 2 RSAs, the MAH unilaterally terminated the CSA, based on a clause permitting this action in case of changes to any conditions of the medicine, such as price reduction at national level. In these 2 situations, it was impossible to reach a new RSA, and CFT-SISCAT considered there was no new evidence supporting a change of the criteria for use. Therefore, CatSalut fully paid for both treatments in a reflection of some of our management limitations.

Finally, regarding the other 10 RSAs, CFT-SISCAT considered there were insufficient data to conclude whether the RSAs were able to manage the uncertainty they aimed to address. For instance, under the urothelial carcinoma PLR, only 4 of 30 patients achieved the health outcomes, raising concerns about the effectiveness of this treatment. Nevertheless, based on PLR data, the CFT-SISCAT considered that 6 months was not enough to support a new decision for a recommendation for use.

Catalonia is not responsible for pricing and reimbursement decisions,[12] so regional RSAs are not linked to reimbursement conditions, in contrast to the national ones implemented by the Spanish Ministry of Health.[31] Consequently, the RSAs implemented in Catalonia were based on CFT-SISCAT recommendations for managing or limiting uncertainties. Health professionals at the

Figure 1. Results of health outcomes by disease in performance-linked reimbursements.



hospitals were informed about the specific inclusion criteria for each RSA, although to limit the administrative burden for data collection, there was no previous verification of compliance of these criteria. Anyway, although some patients were excluded from the RSAs, their treatments were fully reimbursed by CatSalut. The main reason for exclusion was not fulfilling the follow-up period established in the RSA, preceded by not fulfilling eligibility criteria or missing data in the registry. A further improvement is recommended and should be focused on managing patients who do not fulfill eligibility criteria. Nevertheless, we are not aware of any publications reporting exclusion criteria for RSAs and how to deal with these cases.

CatSalut has the right information technologies to implement both types of RSA, allowing measurement of both health and economic outcomes. Its invoicing application, together with the RPT-MHDA registry, which was already set up before RSA implementation, enables an integrated information system for daily clinical and economic data collection.[9] These registries allow the required information capture and ensure that the process is underpinned by a trust-based relationship with the MAH. Nevertheless, the RPT-MHDA registry needs to be upgraded to ease the data collection process for health professionals. In Italy and Estonia, monitoring registries allow for the continuous evaluation of medicines in clinical practice which facilitates the implementation of PBRSAs.[5] In contrast, in the United Kingdom, difficulties with the implementation of monitoring registries prompted the simplification of PBRSAs, transformed into, for example, simple discounts.[32]

In line with other authors,[2,5] some perceived disadvantages regarding RSA implementation had to do with the difficulty of comparing and transferring results between other regional, national, and international RSAs because of their confidential nature. Limiting information sharing means that sensitive content, such as reimbursed prices, is not disclosed, which matters to MAHs in a context where the maximum prices are usually based on the prices in other countries.[5,33] Different standards of practice, health, and economic outcomes and their evaluations and resource use could help CatSalut and other payers to identify lessons learned and improve the design of future RSAs. Several studies mentioned difficulties in obtaining RSA evaluations because of their confidentiality clauses and highlighted the need for increasing transparency while encouraging publication of outcomes to facilitate more efficient decision-making.[2,5,8,24,34] Therefore, we consider that our study has an added value in that it explicitly presents multiple health and economic RSA outcomes.

Nevertheless, the study has some limitations. As mentioned earlier, legal contracts preclude the publication of health and economic outcomes, hindering the full disclosure of relevant information (eg, patient characteristics, health outcomes, specific causes of discontinuation). Despite the confidential nature of the RSAs, the respective MAHs agreed with the reporting of health and economic outcomes aggregated by type of RSA and disease or therapeutic area. The specific indications were not reported to avoid identifying the medicines. In the case of rare diseases, not even the disease was disclosed because of the absence of therapeutic alternatives. Another limitation could be the low number of RSAs implemented in Catalonia, most of which were still ongoing during the analysis. A future analysis should update the present results. In addition, a systematic analysis comparing these results with clinical trials or observational studies should be conducted, although it could be challenging to measure benefits linked to clinical processes of care management and causal effects.

Conclusions

The steady rise in approved medicines, often linked to high prices and significant uncertainties surrounding their clinical value (especially for oncohematology therapies and orphan drugs), has stimulated the development of different mechanisms for the rational and efficient use of the healthcare resources. This study shows that both PLRs and CSAs were used to manage the different uncertainties related with the access to innovative medicines in Catalonia. In addition, the data generated provided relevant information to inform the decision-making process, allowing adaptations of the initial recommendation for use or access. Nevertheless, further efforts are required to increase RSA assessment and their publication.

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