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Medicare austerity reforms and patient out-of-pocket costs: The experience from Australian cancer patients

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ABSTRACT

In this paper, we examine trends in provider fees charged, government expenditure on private out-of-hospital medical services, and out of pocket costs following policy changes intended to reduce government expenditure. We examine the experience of a high-need patient group: people diagnosed with cancer. The Australian system for these services is predominantly publicly funded under fee for service; with no government control on the fees charged by providers. We calculate out of pocket costs for patients in the 12 months following a cancer diagnosis and find a large variation in these costs according to the type of treatment received as well as the place of residence and presence of additional government protection. We find that volumes of services, provider fees, and out of pocket costs rose over time. These findings are especially important for a high-need patient group as out of pocket costs are considered a barrier to access to healthcare. Governments may respond to the long-term fiscal challenges by attempting to constrain benefits it pays; our results demonstrate that careful consideration of the full impact of such policies is needed.

1. Introduction

In times of austerity, governments' attempts to contain public expenditure often include healthcare spending. One strategy is to freeze the level of benefits paid under government-funded insurance schemes. In the context of consistently high growth in healthcare expenditure as well as the objective to reduce budget deficits, the Australian Government introduced reforms to limit expenditure growth in the aftermath of the global financial crises [1]. This paper examines the broader impact these measures have had on high-need patients who have received a cancer diagnosis.

Two policy changes have been implemented in recent years that may have impacted out-of-hospital services. First, the Medicare Benefits Schedule (MBS) rebate freeze, introduced in 2014, stopped the routine indexing of all MBS rebates. Initially set for four years, the freeze was extended in 2016 until 2020 [2]. The second policy change was an increase in the out-of-pocket (OOP) threshold required to qualify for additional coverage through the Extended Medicare Safety Net (EMSN).

The two policies, designed to curb government expenditure, could shift at least some of the cost burden to patients through increased OOP costs. However, the extent of this shift is uncertain because providers are free to set their own fees under MBS rules. Any increase in provider fees translates directly into higher OOP costs for patients, which may, in turn, affect demand for services. This implies that a provider's response is constrained by both the demand-side response to increased OOP costs and the response from their competitors.

The impact of these two policy changes is therefore an empirical question. Providers may choose to absorb rising practice costs, compensate by increasing service volume, or raise their fees. If the latter, a subsequent question is whether fee increases were uniform or targeted at specific population groups. Such a response would be consistent with previous findings of price discrimination practices on the part of providers, whereby lower income patients experience lower OOP costs compared to their higher income counterparts [3,4].

In this paper we examine trends in provider fees, Medicare benefit costs and service volumes over a period in which MBS benefits were held constant (the Medicare freeze), and eligibility for additional safety net cover was reduced. In line with the target-income hypothesis (McGuire [5], Rizzo et al. [6], Contandriopoulos and Perroux [7], we postulate that providers will seek to protect their financial position from rising practice costs but that there will be a heterogeneous response among providers depending on the capacity of their patients to pay higher OOP

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costs as well as competitive supply side factors.

We focus on a high-need patient group; people diagnosed with cancer in Australia. Focusing on high-need patients allows us to examine the cumulative burden of OOP costs over a period that incorporates various phases of treatment. We concentrate our analysis on out-of-hospital services funded by the MBS. This is because patient OOP contributions are a significant aspect of the overall funding streams for out-of-hospital medical services.

In Australia, several recent studies have looked at the cost of cancer care, including the burden that falls on patients. In the state of Western Australia, Slavova-Azmanova et al., [8] used a patient questionnaire to show that patients diagnosed with cancer faced costs of $2179, with 11% of the sample spending more than 10% of their household income on these expenses. Those with private health insurance, aged under 65 years, and with higher incomes faced higher OOP costs.

This paper builds on previous contributions in several important ways. First, we examine the distribution of OOP costs within a high-need population and how these have evolved over time. Second, we utilise a rich dataset that links socioeconomic, geographic, demographic, and cancer-related registry data with administrative claims records to provide an accurate picture on the fees charged, the benefits paid, and the OOP cost burden faced by patients. Third, in the context of a health system where substantive reforms that affect the benefits paid, we will provide unique insights into the impact these policies have had in the cost burden on high-need patients and the association with government protection and place of residence.

1.1. Empirical context

A key plank of Australia's universal health insurance system is the MBS, a tax-financed program that covers all Australians for medical services provided in the out-of-hospital sector. The MBS specifies government-determined benefits but does not regulate the fees charged by providers. Importantly, medical providers are free to set their own fees. For out-of-hospital MBS claims, patients pay the gap between the provider's fee and the Medicare rebate – the OOP cost.

The MBS subsidises over 5700 different types of medical services including consultations with general practitioners (GPs), specialist medical practitioners, as well as pathology, diagnostic and therapeutic services such as radiation oncology. The government assigns each service an MBS item number and fee. Patients are entitled to claim a fixed rebate determined by the MBS Fee. Historically, MBS fees increased annually based on indices reflecting wage and price levels developed by Australian Department of Finance ([2]. However, the MBS rebate freeze (2014–2020) halted this routine indexation, meaning that any increase in provider fees resulted in higher OOP costs for patients.

The Australian Government's concession card program provides additional protection from OOP costs [9]. Around one in four Australians qualify for a concession card. Eligibility is based on receipt of government payments such as the aged-pension or low incomes. Concession cardholders are entitled to some additional benefits including an additional Medicare payment to encourage general practitioners (GPs) to reduce the patient's co-payment to zero. Providers often use concession card status as a signal to lower their fees, thereby reducing OOP costs [4].

Since 2004, the Extended Medicare Safety Net (EMSN) has complemented MBS arrangements for those who have incurred high OOP costs for out of hospital services. The EMSN covers up to 80% of OOP costs for qualifying patients. All Australians are eligible, but they only qualify for EMSN benefits when they reach an annual. There are two threshold levels: a lower threshold for those on low incomes or welfare payments, including aged pensions, and a higher threshold for all other Australians.

Two policy changes have been implemented in recent years that potentially affect OOP costs for out-of-hospital services. First, an MBS rebate freeze was introduced that stopped the indexing of the MBS rebates. The freeze commenced in July 2014 and was initially intended to last for four years but was extended in 2016 to 2020 [2]. This meant that any increase in provider fees had to be met by patients through higher OOP costs.

The second policy change, implemented on January 1, 2015, affected the EMSN threshold amount. At that time, the EMSN threshold for the general population increased to $2000 (up from around $1250 in 2014), while the lower threshold (for concession card holders) remained unchanged (except from the routine annual consumer price index increases). This meant that patients subject to the higher threshold had to incur a further $750 in OOP costs before they qualified for the EMSN [10].

Based on our method of defining an episode of care (one year following a cancer diagnosis); patient diagnosed in 2014 and 2015 were affected, at least partially, by this policy. This allows us to infer its impacts to a limited extent for those diagnosed in the latter years of the observation period. However, due to data limitation (specially, linkage with the cancer registry), we are only able to evaluate the immediate impact of this policy change. Further research with appropriate data could provide a more comprehensive evaluation of its long-term effects on OOP costs for cancer patients.

Over an episode of care, patient OOP costs are driven by the gap between provider fees and Medicare benefits paid, as well as the volume of services where such gaps exist. As a result, high-need patients -such as those diagnosed with cancer who require treatment over extended period- are particularly policy changes that influence provider fees and Medicare benefits.

2. Materials and methods

We use the Sax Institute's 45 and Up Study, which consists of 267,357 residents living in NSW, Australia, at recruitment. These individuals were randomly sampled from the Services Australia Medicare enrolment database and completed the baseline survey over the 2005–2009 period, while the study is still ongoing [11]. Approximately 19% of those invited to participate completed the baseline survey. In addition, the participants signed consent for follow-up and linkage of their information to health and other databases. Those in rural and remote areas, and those over the age of 80, were oversampled. For a full description of 45 and Up Study please refer to Bleicher et al., [11]. The study sample equates to approximately 11% of the population aged 45 and over. The study provides a rich dataset on patient demographics, socioeconomic status, and health status ([11], and [12]). Importantly, the 45 and Up Study links a range of administrative claims datasets including the Medicare claims (MBS), which provide the gold standard when it comes to accurate data on out-of-hospital service use, fees, Medicare rebates, and patient OOP costs. Medicare claims data were provided by Services Australia, and the linkage with 45 and Up Study is done by Sax Institute using deterministic matching.

The 45 and Up Study is also linked by the Centre for Health Record Linkage (CHeReL) to the NSW Cancer Registry using a probabilistic procedure to link records (www.cherel.org.au). Its current estimated false positive rate is 5 per 1000. This allows us to identify study participants diagnosed with cancer. At the time of this project, this data was available to us for any diagnosis that occurred until the end of 2015. As the cancer registry data were sparse prior to 2011, we identified patients who had a cancer diagnosis between 2011 and 2015. For each individual with a cancer diagnosis, we observe a period of one year from the date of diagnosis. For instance, if someone was diagnosed with cancer on October 15, 2015, we include that individual's Medicare claims data for out-of-hospital claims from October 15, 2015, to October 14, 2016. As a result, our sample includes 13,574 individuals.

Out-of-hospital claims include GP and specialist consultations, imaging, pathology, radiation oncology, chemotherapy, and some allied health consultations. Medicare claims data for these claims includes the provider fees, out of pocket costs and Medicare benefits and service

counts. These have been aggregated as a sum of all Medicare services over a 12-months period. The dollar figures are indexed to the first quarter of 2016.

Our initial analysis provides descriptive trends over time for patients diagnosed with cancer between 2011 and 2015. We present trends in fees charged by providers for out-of-hospital services in the 12 months following on from diagnosis as well as the benefits paid by Medicare. The OOP costs for the year are calculated by subtracting the benefits from the fees paid. We use this analysis to examine whether the distribution of OOP costs among cancer patients to examine whether there is a high level of concentration of costs among some patients. We also investigate the distribution of OOP costs among cancer patients to examine whether there is a high level of concentration of costs among some patients and whether such concentrations have changed over time.

Using a linear multivariate estimation model for two groups of individuals-those with concession cards and those without- we investigate out of pocket costs, number of services, provider charges, or Medicare benefits for an individual who was diagnosed with cancer in each year. We investigate the role of observed individual specific characteristics, including whether an individual has private health insurance, whether the person's age is above 65; whether they reside outside of a metro area, and an indicator for socioeconomics quantile of their residence (SEIFA). For the latest 45 and Up Study Data Book and Data Dictionary: https://www.saxinstitute.org.au/our-work/45-up-study/data-book/. Moreover, we study the impact certain treatments such as chemotherapy or radiation oncology. We have included radiation oncology as these treatments are associated with high out of pocket costs [13]. Furthermore, controls for stages of cancer diagnosis, and clinical cancer groups are included. The changes in the EMSN threshold explained previously happened from January 1, 2015, for non-concession card holders only. As a result, we estimate the results for those with concession cards and those without. For a review of the correspondence of variables in this paper and original variables in the 45 and Up Study, please refer to Appendix B.

Whilst almost half the Australian population is covered by supplementary private health insurance (PHI), there is no PHI coverage available in Australia for out-of-hospital services that are covered by the MBS. PHI membership does, however, cover private hospital accommodation and medical inpatient services. This means that although PHI does not directly affect coverage and access to MBS-related out-of-hospital services, there may be indirect impacts. For example, patients with PHI may be more likely to see specialists who charge higher fees, regardless of whether these consultations occur in the inpatient or out-of-hospital setting. For this reason, our analysis includes PHI membership as a control.

The unit of observation is the aggregate over a one-year period following the diagnosis of cancer. The fees charged are an amalgam of the fees charged per claim and the volume of claims over the one-year period after diagnosis. The Medicare benefits paid reflect the benefits per claim and the volume of claims. Here, the benefits reflect the Medicare Benefits Schedule (MBS) rebate for each item, as well as the EMSN benefit. The total number of services over a one-year period aggregates all MBS services used by a patient.

3. Results

3.1. Descriptive results

Fig. 1 shows the fees charged and Medicare benefits paid per patient in the 12-months following their cancer diagnosis. Provider fees increased from $5601 in 2011 to $6524 in 2015 (blue line in Fig. 1). Medicare benefits increased from $5078 in 2011 to $5952 in 2015 (red

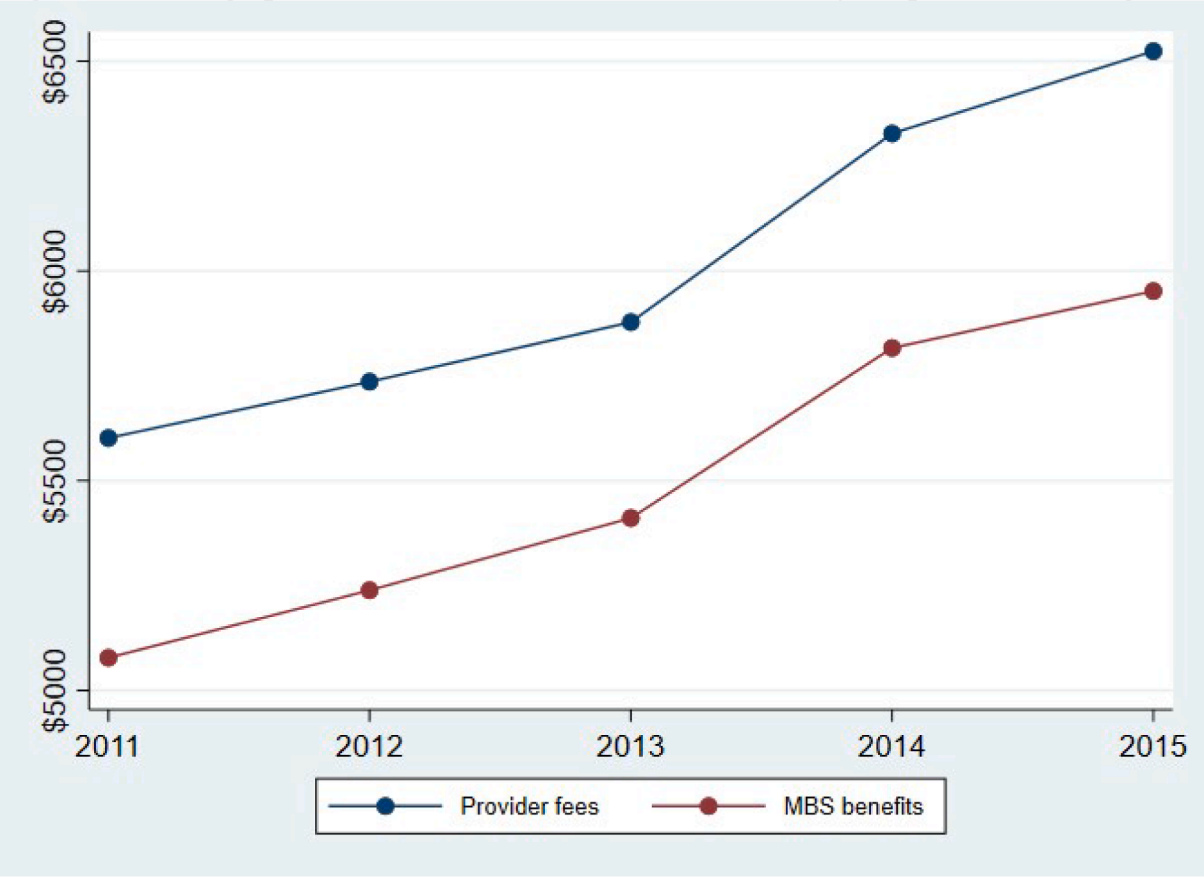

Fig. 1. Average provider fees and Medicare benefits one-year post cancer diagnosis.

line in Fig. 1). The gap between provider fees and Medicare benefits represents the average annual OOP costs incurred by patients for their out-of-hospital medical treatments. In the years prior to the freeze, growth in benefits was greater than fees leading to a small decline in OOP costs. Following the introduction of the freeze there was an increase in both provider fees and benefits which can only be explained by a higher volume of services and/or a change in the mix of services with higher MBS rebates. In 2015, there is a widening of the gap between fees and benefits, indicates rising OOP costs for patients.

Previous research suggests that OOP costs are unevenly distributed across the population [9]. Fig. 2 presents the distribution of annual OOP costs incurred for out-of-hospital services by year of cancer diagnosis. In 2011, around 6% of the population group incurred no OOP costs, and only 0.6% of the cohort incurred OOP costs greater than $5000 (blue color in Fig. 2). The distribution remains steady over time although there are some trends starting to emerge. First, a fairly steady 40% of each year's cohort incurs a very modest OOP amount of less than $250 per year (maroon and blue colours in Fig. 2). However, an increasing proportion of the population is experiencing very high OOP costs, particularly since 2013. In 2013, 2.55% of the population incurred OOP costs greater than $2000 per year, and by 2015, this figure had increased to 5.13% of the population (red and purple colors in Fig. 2).

3.2. Regression results

Table 1 presents the regression results for four outcomes of interest: fees charged, Medicare benefits paid, number of MBS services, and patient OOP costs incurred for our two population groups of interest: concession card holders and the general population

The results show that the year of diagnosis had little effect on the benefits paid, the fees charged, and the number of claims made for the general population (columns 5, 6, 7, and 8 in table 1). OOP costs for this group rose significantly for those diagnosed in 2015 (column 5, table 1), reflecting a fall in the benefits paid. For concession card holders, OOP costs did not change according to year of diagnosis (column 1, table 1) although the number of claims did increase in some years which then led to a commensurate increase in fees and benefits (columns 3 and 4, table 1).

Over time, those who receive radiation oncology have witnessed significant financial changes. Compared to those diagnosed in 2011, patients diagnosed in 2012, 2013 and 2014 saw a decline in average OOP costs in both the general and concession card population (rows 5–7, columns 1 and 5 in table 1). For both concessional and the general population groups, the model indicates that the fall in OOP costs is due to the growth in benefits paid (column 6, table 1) being greater than fees charged by providers (column 7, table 1) – noting that not all results are statistically significant. For those diagnosed in 2015, however, the results for concessional patients and the general population diverge. For concessional card holders diagnosed in 2015, fees, claims and benefits increased substantially, but OOP costs continued to fall because benefits rose by more than fees. For the general population, however, the rise in fees was only partially offset by a rise in benefits, which meant that OOP costs rose by $208 (row 8, column 5, table 1). Another notable change for this group in 2015, is the significant increase in volume of services rendered for concessional card holders relative to general patients. The results are consistent with induced demand, in line with providers attempts to maintain their income while considering the patients ability to absorb the costs.

Having PHI membership significantly increases the fees charged, number of claims made, the Medicare benefits paid, and higher OOP costs compared to those without PHI for both concession card holders and the general population (table A1, annex). The socioeconomic area of

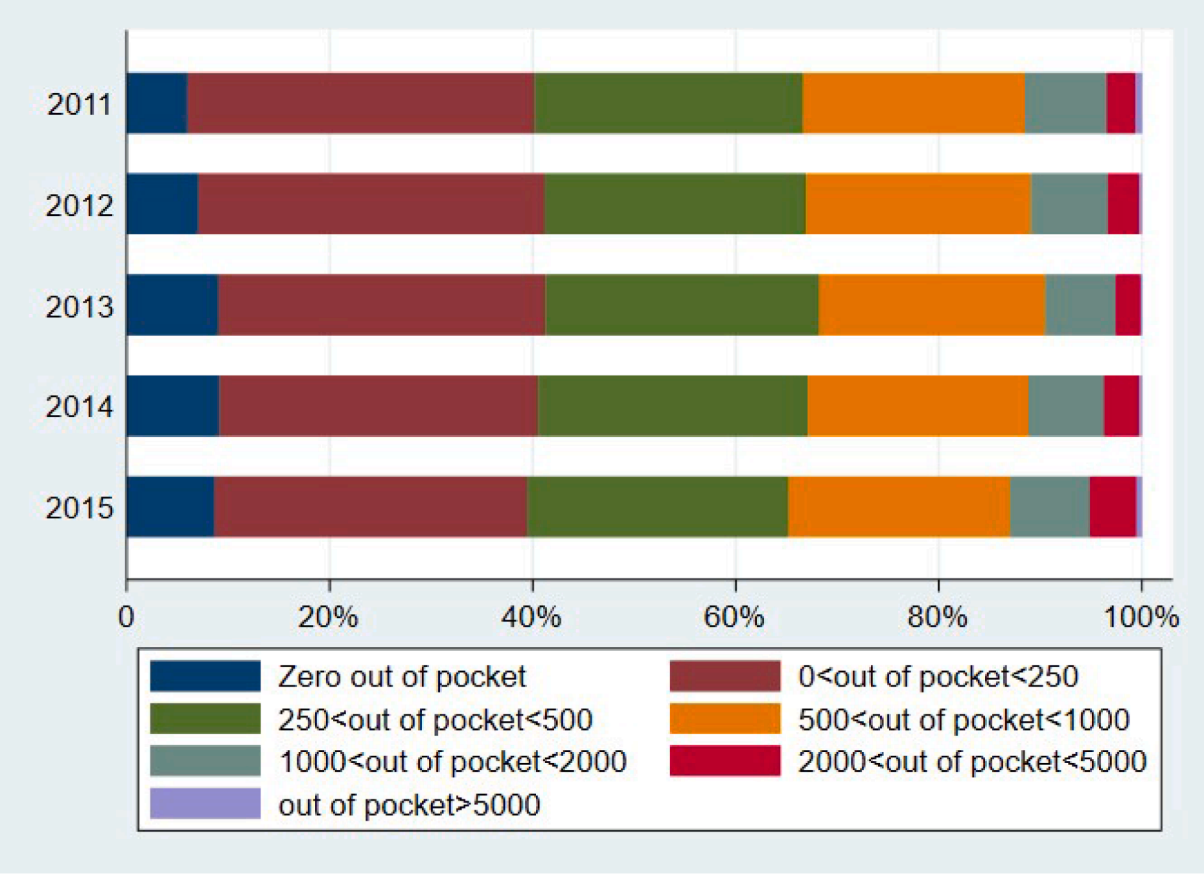

Fig. 2. Distribution of OOP costs over an episode of care by year.

Table 1
Regression results.

	Concessional				General population			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
VARIABLES	OOP	Benefits	Fees	Counts	OOP	Benefits	Fees	Counts
2012	0.961	45.022	45.983	−0.033	−5.649	44.889	39.240	0.890
	(7.656)	(82.904)	(82.806)	(1.093)	(32.783)	(146.138)	(172.470)	(1.603)
2013	2.359	126.295*	128.654*	1.798*	−11.830	41.216	29.386	1.258
	(9.267)	(68.531)	(73.304)	(1.053)	(33.968)	(179.123)	(208.022)	(2.029)
2014	6.472	169.370**	175.843**	2.861**	−5.005	−32.415	−37.420	−0.365
	(12.116)	(68.884)	(73.156)	(1.147)	(31.419)	(103.674)	(124.908)	(1.285)
2015	2.443	−61.349	−58.906	0.575	56.363**	−76.641	−20.278	1.847
	(9.003)	(61.582)	(63.240)	(1.084)	(23.933)	(131.216)	(143.885)	(1.417)
2012*Radio	−195.059***	26.792	−168.268	5.226**	−6.311	868.488	862.177	0.787
	(60.814)	(207.721)	(230.196)	(2.239)	(116.656)	(533.482)	(625.967)	(2.939)
2013*Radi	−314.936***	226.862	−88.074	4.536**	−249.071***	772.752**	523.682	1.195
	(80.030)	(278.548)	(286.061)	(2.157)	(92.573)	(301.355)	(354.341)	(2.617)
2014*Radi	−272.213***	403.532	131.319	4.349	−128.316*	736.172*	607.855	4.716
	(69.678)	(329.736)	(344.884)	(2.666)	(73.994)	(380.945)	(435.533)	(3.237)
2015*Radi	−181.371**	1226.990***	1045.619***	9.447***	207.697*	1542.386***	1750.083***	4.209
	(78.154)	(283.376)	(268.147)	(2.571)	(109.600)	(423.215)	(519.541)	(3.012)
Radio	560.203***	7853.956***	8414.159***	43.514***	714.111***	7538.381***	8252.493***	42.832***
	(55.149)	(1354.158)	(1380.837)	(7.773)	(120.061)	(867.334)	(972.160)	(6.126)
Observations	9730	9730	9730	9730	3844	3844	3844	3844
R-squared	0.123	0.610	0.586	0.448	0.178	0.634	0.593	0.570

Robust standard errors in parentheses*** $p < 0.01$
** $p < 0.05$
* $p < 0.1$.

the patient's residence is associated with higher OOP costs and fees for those living in relatively economically advantaged areas (table A1, annex). Additionally, an important socioeconomic determinant of fees, benefits and OOP costs is concessional card status. Having such a card, increases the fees charged by providers, as well as the number of services, but increases the Medicare benefits by a greater amount. Higher fees are the result of a higher volume of claims – rather than the price charged per claim. With the increase in benefits exceeding the fees

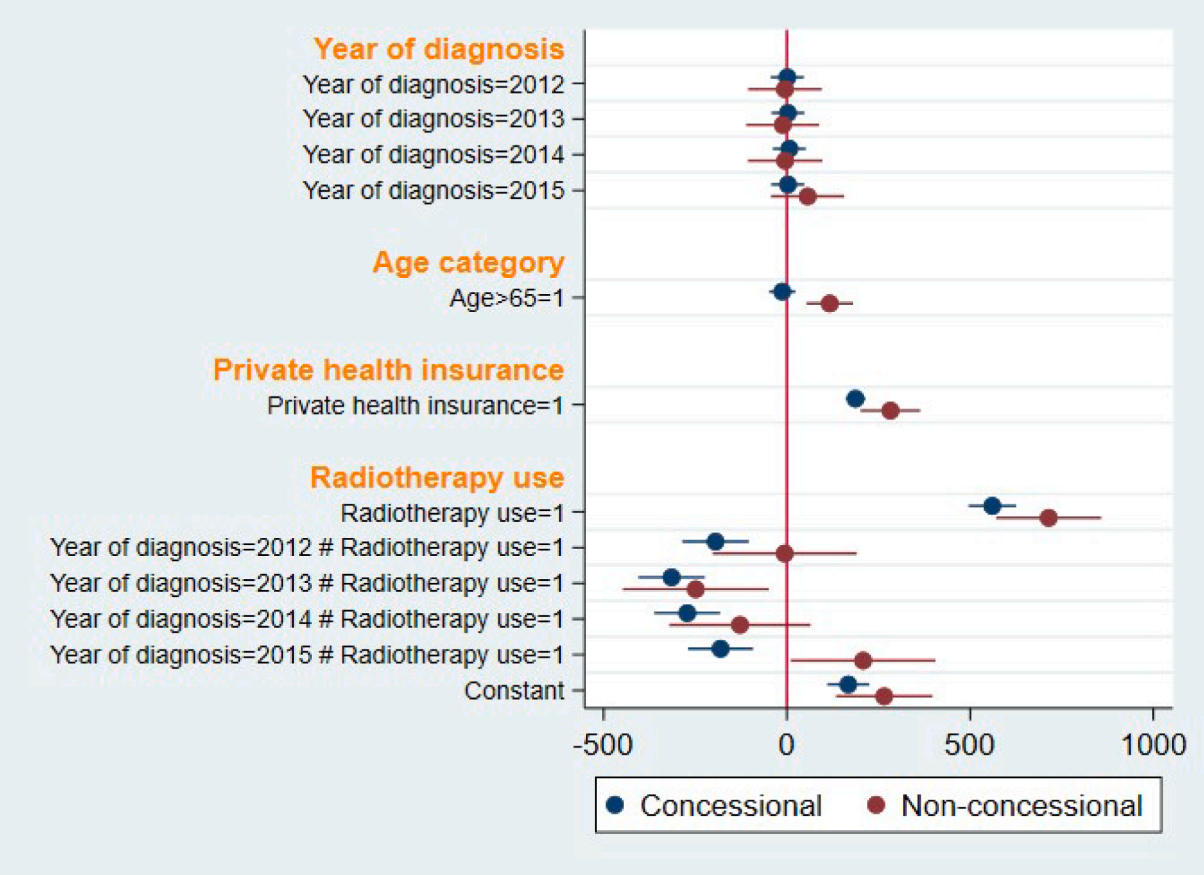

Fig. 3. Concessional versus non concessional population's out of pocket costs.

charged, OOP costs are lower for those with a concession card (table A1, annex).

The costs of chemotherapy infusion (not the chemotherapy drugs, which are out of scope for this paper) add $2709 and $3025 in fees charged for card holders and the general population, respectively. From the patient's perspective, the MBS-related costs for chemotherapy remained stable over the period between 2011 and 2015 (table A1in the annex).

For the complete version of the table including all coefficients for controls please check table A1 in the annex. The table is estimated based on equation 1 using linked data from 45 and Up Study from 2011 to 2015. The dollar amounts are indexed to quarter one of 2016. Standard errors are clustered at cancer type level.

To explore the role of concession card status further, we present the differences in OOP costs between card holders and the general population in Fig. 3. Holding all factors constant, this figure shows that having a concession card provides protection from high OOP costs consistently between 2011 and 2014. In 2015, OOP cost for the general population increased significantly, but concession card holders were protected from this increase.

For many of the other variables, OOP costs move in the same direction for the general population and the concession card population, but in most instances OOP costs are lower for the latter group. For example, having private health insurance increases OOP by around $282 for the general population and by only $188 for the concession card group (Fig. 3). Similar trends can be observed for factors such as being older than 65 and using radiotherapy services (Fig. 3).

The differences in OOP costs between the general population and concession card holders is due to a number of factors. In general, concession card holders receive higher MBS benefits than the general population, which reflects not only the additional entitlements but also the higher volume of claims made by card holders. In other instances, it is clear that concession card holders are charged less for the services they use. For example, fees charged for chemotherapy-related treatments are $300 less for concession card holders compared to the general population (table A1, annex). Over time, concession card status is a more important determinant of OOP costs. Consistent with the EMSN policy change in 2015, concession card status provided additional OOP cost protection, including those patients who used radiotherapy services, compared to the general population.

4. Discussion

This paper has examined the impact of OOP costs for patients in the 12 months following a cancer diagnosis. On average, the results show that such patients incur around $514 in OOP cosst for out-of-hospital services funded through the MBS, but these costs are highly skewed. Over 40% of patients face fewer than $250 in OOP costs per year, regardless of the year that they were diagnosed. However, the percentage of patients facing $2000 or more in OOP costs has increased slightly since 2013.

Patients who are privately insured face higher OOP costs. The higher Medicare benefits claimed by PHI patients can be explained by a (i) higher volume of services, (ii) more services with higher MBS Fees, and/or (iii) greater likelihood of qualifying for EMSN benefits (which are included in the MBS benefits estimated). As noted, PHI does not contribute to the expenses of any claims made under the MBS for out-of-hospital services and therefore membership cannot directly effect on fees, benefits and OOP costs. However, patients who choose to insured may exert preferences for the type of care they want. For example, those with PHI may be more inclined to rely on specialists' care compared to those without PHI. It also plausible that providers charge higher fees to patients who are privately insured [4].

A recent systematic review [14] on the OOP cost burden of patients diagnosed with cancer found that adult US patients spent between USD 180 and USD 2600 per month, while the cost was USD 15–400, USD 4–609, and USD 58–438 in Canada, Western Europe, and Australia respectively. In high income countries, cancer patients and their caregivers spent on average, around 16% of their annual income on out-of-pocket expenses related to treatment [14]. Despite the universal health system in Australia, those on lower incomes face an increased likelihood of catastrophic health expenditure. A study by Callander et al. [15] shows that those on income decile 1 are 15.63 times more likely to have catastrophic health expenditure (defined as spending more than 10% of their income on healthcare).

The results of our analysis do not provide straightforward answers to the question of whether the Medicare freeze and the EMSN threshold reforms have impacted OOP costs. Although there are clear indications that OOP costs have increased following the policy reforms, the pathway by which these changes occurred suggest that other factors may be at play. For example, in the case of the Medicare freeze, we would have anticipated that if OOP costs increased this would have arisen from a growing gap between rising fees and a flat (i.e. no change in) in Medicare benefits. Instead, we find that both fees and benefits grew over that time – but fees outgrew benefits to result in an increase in OOP costs especially for the general population. This does not rule out the possibility that the freeze contributed to the rise in OOP costs in 2015 but also suggests that there was a change in the volume of services claimed, a change in the mix of services and/or higher fees. Furthermore, although the Medicare freeze affected the entire population, the increase in OOP costs only appears to have affected the general population and not concession card holders. This result is consistent with the idea that providers are more resistant to increasing fees (and OOP costs) for their concession card patients than their general population patients.

In the case of the EMSN threshold change, we would have anticipated that OOP costs for some general patients may have increased and that this would have shown up in our analysis through lower Medicare benefits for those diagnosed in 2015. Consistent with this expectation, the results show that OOP costs for the general population did indeed increase but did not change for concession card holders. However, the pathway by which this result came was through an increase in fees that were not completely offset by an increase in benefits. It is possible that the results by Yu et al. [10] can help to explain this phenomenon. That is, Yu et al. [10] showed that in response to the EMSN threshold change, specialist doctors increased their consultation fees so that general patients reached the new (higher) EMSN threshold. It plausible that Yu's result was more widespread than just consultation fees and affected other areas such as radiation oncology where the results show a similar pattern – particularly when comparing changes that occurred for those diagnosed in 2015 with those diagnosed in the year prior.

An important lesson from our analysis is that OOP costs vary depending on the type of treatments used (chemotherapy versus radiotherapy) as well as the socioeconomic status of the area in which patients reside. Patients might have to choose a different treatment (or no treatment) if the out of pocket for using radiotherapy is prohibitive. Moreover, patients living in wealthier areas face higher OOP costs than those in less wealthy areas. This holds true for both the general and concession card holders, although the degree of variation across socioeconomic areas is less for concession card holders. We know from previous research that OOP costs act as a barrier to care, particularly for specialist care for those on lower incomes [3,16]. This is also evident in our analysis which shows that in areas with higher OOP costs, the number of claims is lower. This suggests that the higher OOP costs may have led to a barrier to access for some patients.

Under Australia's system, the government has a limited range of available policy options to curtail OOP costs. Its primary instrument is to increase benefits to try to keep up with provider fees but as we have seen elsewhere, there is a high risk that higher benefits translate to higher provider fees [17,18], which can leave patients no better off and taxpayers worse off.

These issues point to the need for additional policy instruments that will provide greater predictability and rationale for OOP costs as well as

greater equity for high-need patients such as those diagnosed with cancer. First, policy settings should not just take account of the Australian Government's expenditure growth but also the effect it may have on patients – knowing that any changes to policy that affect Medicare benefits are likely to be concentrated on a relatively small number of high-need patients. Second, OOP costs should be viewed on an episodic level rather than on a service-by-service basis. As patients and their families draw on savings, the cumulative impact of OOP costs may place increasing burdens on household financing which may have a deterrent effect on healthcare use.

Notwithstanding the limitations of our study (outlined in the Appendix), our analysis offers a number of novel insights into the recent financial trends for patients diagnosed with cancer from which we can draw some key policy lessons. First, Medicare benefits have kept up with fees during the early years of our observation period but there are signs that OOP costs are rising – particularly for the general population. Furthermore, whilst the proportion of the population who experience modest OOP costs has been stable, an increasing proportion of patients incur OOP costs that exceed $1000. This suggests that, over time, more patients will qualify for EMSN benefits. Due to the design of Medicare, the Australian Government finds itself in a Catch-22 position. In trying to restrict Medicare benefits through policies like the Medicare freeze, it may increase patient OOP costs. In doing so, more patients will qualify for the EMSN which, in turn, will increase Australian Government expenditure.

5. Conclusion

In this paper, we examine trends in provider fees charged, government expenditure on private medical services, and out of pocket costs following policy changes intended to reduce government expenditure by focusing on a high-need patient group: people diagnosed with cancer. We calculate out of pocket costs for patients in the 12 months following on cancer diagnosis and find a large variation in these costs according to the type of treatment received as well as the place of residence and presence of additional government protection. We find that volumes of services, provider fees, and out of pocket costs rose over time despite the austerity measures taken by the government. These findings are especially important for a high-need patient group as out of pocket costs are considered a barrier to access to healthcare access.

The findings here extend beyond Australia. Expenditure restraint is likely to induce changes in provider behaviour affecting both the volume of services and fees charged, where that is possible. The effects are not even across the population, and policies to protect the vulnerable can be effective. That also means that monitoring effects by tracking averages can be misleading, and it is important to investigate how changes impact different population groups. It is also important to consider how different aspects of the insurance design interact, in this case, higher OOPs and the EMSN. As governments respond to the long-term fiscal challenges due to the COVID-19 pandemic, careful consideration of the full impact of policies is needed.

CRediT authorship contribution statement

Maryam Naghsh-Nejad: Writing – review & editing, Writing – original draft, Validation, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Kees Van Gool:** Writing – review & editing, Writing – original draft, Methodology, Funding acquisition, Conceptualization. **Phil Haywood:** Writing – review & editing, Writing – original draft, Funding acquisition, Conceptualization. **Jane Hall:** Writing – review & editing, Writing – original draft, Funding acquisition, Conceptualization.

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Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.healthpol.2025.105296.

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