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REFinE-PHC Paying for Primary Health Care

Financial incentives for efficiency, equity and sustainability

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CONTENTS

Introduction and background 4
Fee-For-Service in Primary Care 6
CONTEXT 6
METHODS AND RESULTS 6
DISCUSSION 7
Participation in financial incentives programs 8
CONTEXT 8
METHOD AND RESULTS 8
DISCUSSION 9
Bulk billing incentives 11
CONTEXT 11
METHOD AND RESULTS 11
DISCUSSION 12
Service Incentive Payments 13
CONTEXT 13
METHOD AND RESULTS 14
Diabetes 14
Asthma 15
DISCUSSION 15
Rural practice – addressing the maldistribution of GPs 16
CONTEXT 16
METHOD AND RESULTS 16
DISCUSSION 16
After hours care 17
CONTEXT 17
METHOD AND RESULTS 17
DISCUSSION 17
Models for integrated care 19
CONTEXT 19
METHOD AND RESULTS 19
DISCUSSION 22
Conclusions and policy implications 23
References 25
Appendix 26

Introduction and background

There has long been interest in understanding different payment mechanisms for health care providers, what the impact is and how to use different approaches to payment to improve health system performance. The main mechanisms for paying primary care providers can be described as fee-for-service (FFS), capitation or salary. These are in use in different countries, or within countries in different parts of the system. The effects of each of these approaches are well recognised. Fee-for-service encourages a greater volume of services, though can expose the funder to an open-ended financial commitment. Capitation requires patient registration and provides incentives for minimising effort (volume) and selecting easier to manage patients (cream skimming). While this makes the financial exposure of the funder more certain, it may lead to more shifting of care onto other providers. Salaried providers also face incentives to minimise effort and may feel less responsible for the results though the funders' initial outlays are more predictable. Where primary care providers play a gatekeeping role, the consequent costs also include referral to specialists. None of these approaches work in a simple and straightforward way. Financial incentives are one example of an extrinsic motivator. It is important to note the potential importance of other factors such as peer recognition, organisational culture, availability of information and ready access to scientific evidence as well as the intrinsic motivation to do a good job and care well for one's patients. Some key studies are summarised at Appendix 1. Each approach has undesirable consequences, and none explicitly reward better quality care.

Table 1: Impact of funding systems

Funding mechanism	**Volume**	**Quality**	**Referral rate**	**Time**	**Cost**
FFS	Incentive for high throughput and repeat visits	Unclear	Disincentive to refer to other practitioners	Incentive to reduce time with patients	Leads to higher costs for the system
Salary	Minimise effort by restricting throughput	Unclear	Promotes referrals and collaboration	Promotes increased time with patients	Leads to lower costs for the system
Capitation	Minimise effort by restricting working hours and throughput	Unclear	Promotes referrals and collaboration	Promotes increased time with patients	Promotes cost containment

Not surprisingly, across different health systems policy advisers have been increasingly interested in developing new approaches to payment. Blended payment systems use combinations of these different approaches to improve incentives. Bundled payments attempt to change the focus from the inputs of a care episode to a payment per episode (analogous to case-mix or activity based funding for hospitals). Pay for performance targets particular processes, population groups or outcomes with additional financial rewards. Pay for performance represents a complex form of funding arrangements which have proved difficult to evaluate, as targets, payment size and mechanism, recipients, and other contextual factors vary across schemes. As a recent European Observatory review

concluded [1], the evidence on effectiveness remains fragmented, there has been little rigorous evaluation, and improvements, where found, tend to be marginal.

The primary medical service is only one aspect of primary care. The medical practitioner can request additional investigations, i.e. pathology and diagnostic imaging, and prescribe pharmaceutical treatment. This makes the cost of the primary care sector much greater than the expenditure on GP services [2]. There are a range of other health practitioners who may provide substitute or complementary services. This has led to consideration of other approaches which offer incentives to enhance efficiency in the use of the range of other professional groups, such as nurse practitioners, and in the management of investigations and drug treatment. Early approaches were the budget holding initiatives introduced in the NHS in 1991-2 and more recently accountable care organisations and medical homes in the US.

Australia has a strong primary care system. Medicare provides government rebates against the cost of medical services, which includes benefits covering some primary care services such as general practitioner (GP) attendances and some dental, optometry, psychology and other allied health services. General Practitioners (GPs) operate on a primarily fee-for-service basis with Medicare rebates provided for services as set out in the Medicare Benefits Schedule (MBS). The MBS emphasises the personal encounter between the GP and the patient. However, Australia was one of the first countries to introduce a type of pay for performance scheme with the Practice Incentives Program (PIP, introduced as the Better Practice Program in 1996), the Service Incentive Program (SIP introduced in 2001), and incentives for bulk billing (2005). While the bulk billing incentive does not address specific services or outcomes, it was designed to promote access for children under age 16 years and concession card holders. There have also been various strategies aimed at improving after hours care.

This provides an opportunity to learn from the Australian experience of alternative payment models. This research has addressed the following questions,

- To what extent is Australian General Practice fee-for-service and what can be learnt from previous attempts to reform the payment system?
- How are non FFS payments used in Australian primary care?
- What was the impact of the bulk billing incentives?
- What was the impact of SIPs?
- Do financial incentives encourage GP labour supply, including after hours care?

Australia has also made various attempts to improve the delivery of primary and out of hospital care by encouraging better co-ordination of services to improve patient experience, led to better outcomes, and greater efficiency. This began with the Co-Ordinated Care Trials of the late 1990s through various approaches to develop integrated care programs and in the recent announcement of the Health Care Homes Trials.

- What are the challenges in building viable models of integrated care or medical homes?

The final section reflects on the implications for current and further reform in primary care.

Fee-For-Service in Primary Care

CONTEXT

The funding of medical care in Australia is generally described as fee-for-service. Fee-for-service is a payment model where health care providers are paid a fee according to the type of service, with total income determined by the volume provided. Fee-for-service payment models are generally associated with higher service volumes which can be explained by the financial incentive for physicians to provide more treatment. When this is associated with insurance coverage it can lead to supplier induced demand where physicians provide more services than would be used if consumers faced the full cost of services and understood the full benefits.

An alternative payment method is to link payment to the length of time worked. This is the basis of most salary payment systems, where a sessional payment is based on the amount of time worked. Paying purely for time does not discriminate for varying intensity of effort, or for the quality of the service delivered.

Medicare item numbers require the provision of a defined service. Procedures (such as removal of a cataract, repair of a broken bone) are generally relatively easily defined. However, in consultation based medical care (such as general practice) it is more difficult to define the service in terms of specific output. As a result, general practice services have often been categorised by consultation length. Early GP item numbers focused heavily on time and did not recognise either varying complexity of consultation or provide remuneration for preventative health measures. Over time, a series of amendments to the Medicare Schedule have attempted to address these issues. The simplest GP service (item 3) is now described in terms of a being an obvious problem requiring minimal history or examination, rather than being time based. Differential fees are provided to vocationally registered GPs, thus recognising a higher skill level, and the commonest item numbers (standard consultations by a vocationally registered GP at consulting rooms- item numbers 23, 36 and 44) now include both time and some service components.

Item numbers have been added to encourage improved chronic disease management, and targeted population screening (through health assessments for particular age groups). These have been predominantly defined in terms of provision of a particular service, although amendments have added a time component to health assessments. This raises the question to what extent is the current payment schedule for GP services fee-for- service (which is a financial incentive for service provision), rather than fee-for-time (which is recompense on the basis of the input i.e. time).

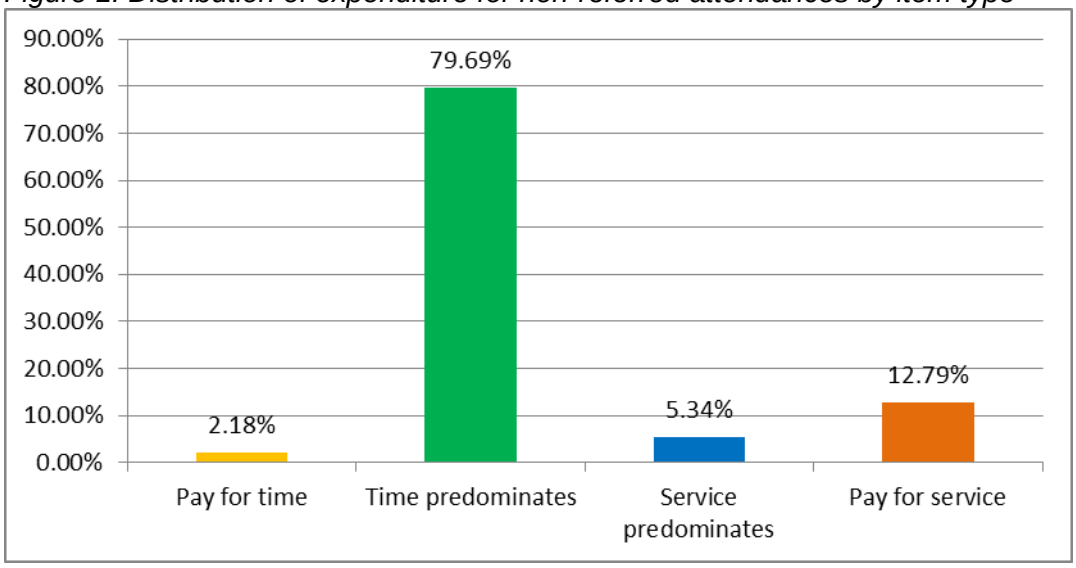
METHODS AND RESULTS

In this analysis, all item numbers for non-referred attendances (152 items) are classified into four categories, depending on the extent of fee-for-service or fee-for-time implied by the MBS description. The four categories are,

- pay for time
- time predominates, although payment is decided by both time and service
- service predominates, although payment is decided by both time and service, and
- pay-for-service.

For numbers of items, ‘service predominates’ is the largest category (24%). However for volume of attendances and for expenditure, the largest category is where the service is predominantly defined by time.

Figure 1. Distribution of expenditure for non-referred attendances by item type



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Most general practice care is defined by time inputs rather than an element of service. A service element would describe what was done, e.g. follow up of diabetic care. This is despite a number of amendments designed to change the focus of Medicare payment towards payment for the provision of specific services.

DISCUSSION

The move from funding time inputs to service elements of primary care is challenging. A previous attempt was the Relative Value Study (RVS), a 7-year collaboration, between the Australian Medical Association (AMA) and the federal health department in the 1990s [3]. The RVS was a review of the services and fees of the existing MBS, in order to address perceived unfairness in the relativities of different Medical Benefits Scheme (MBS) items. It was expected to result in a new payment approach. The RVS cost the taxpayer over $7.8 million but was not completed and never implemented. Although it seemed at the outset that the RVS had the necessary pre-requisites for successful policy relevant research and implementation, the study was disbanded over modelling approaches and assumptions.

Over the last thirty years, hospital funding has moved from payment for inputs to payment of activity with activity defined as episodes of care. Hospital Activity Based Funding (ABF) in Australia has been built on constructing an efficient price using a national data collection of activity and cost information. The key development that underpins ABF is a system of case mix classification which defines activity as service types or units of output. This is lacking in primary care. While the number of consultations is a measure of activity, it is an input to care just as number of hospital days are an input measure. Understanding and measuring activity and efficiency in primary care is where understanding hospital efficiency was four decades ago.

Participation in financial incentives programs

CONTEXT

In Australia, financial incentives were first introduced in primary care in 1996, through the "Better Practice Program", which was superseded by the Practice Incentives Program (PIP) in 1998. The PIPs are a practice-level incentive, currently made up of 11 incentives for,

- quality prescribing
- early diagnosis and effective management of diabetes
- cervical screening of under-screened women
- continuing care for asthma patients
- encouraging better heath care of Aboriginal and Torres Strait Islander patients
- adopting new eHealth technologies
- operating after hours
- providing teaching sessions to medical students
- practicing in a rural location,
- performing certain non-referred services in rural locations, and
- immunisation of children.

Within the PIP framework, the Service Incentives Program (SIP) was introduced in 2001, and comprises an additional payment paid directly to the GP for completing cycles of care for patients with diabetes and asthma, as well as for cervical screening of under screened women [4]. Medicare data for 2011 showed that 68% of eligible practices were registered for the PIP. Other studies have shown that various factors can influence the response to incentives, including the size of the payment, and the financial and time costs of claiming payments. This study investigated individual practitioners' use of targeted financial incentives, in particular change over time.

METHOD AND RESULTS

We used data from the Medicine in Australia - Balancing Employment and Life (MABEL) longitudinal panel survey of medical practitioners in Australia, which started in 2008. This includes approximately 4,000 GPs and GP Registrars. Respondents were asked the percentage of gross earnings from government incentive grants and grants in the last year.

Almost all (90%) of GPs reported receiving 10% or less of their income from government incentive and grant schemes. Around one half (47%) of GPs reported receiving some incentive or grant income in 2008, and this number fell to 43% by 2011, with most of the decline between 2008 and 2009. This small change does not tell us about stability in the individuals participating in these schemes. Table 2 shows the transitions for each two-year period. The table should be read as follows: in 2008, 47% of respondents reported receiving this income, but of those 38% were no longer participating in the schemes in 2009. Of those not participating in 2008, 27% were receiving payments in 2009. Overall, around one third of the doctors are changing their participation in any one year, but as the rate of exiting the schemes is higher than the rate of new entrants overall participation is falling. However, there is little change in which characteristics are significant from year to year.

Table 2: transitions in percentage of doctors receiving grants from incentives and government schemes

Year 1	2008	2009	2010	2008
Year 2	2009	2010	2011	2011
% receiving payments in year 1	47.7%	43.8%	44.0%	43.8% *
% receiving in year 1 not participating in year 2	38.4%	34.5%	34.7%	41.1%
% not participating in year 1 receiving payments in year 2	27.5%	25.2%	26.0%	29.4%
Turnover as % of total	32.7%	29.2%	29.9%	35.0%

**receiving payments in 2011*

The factors associated with a higher likelihood of claiming incentives are number of GPs working in the practice, the number of practice administrative staff, and being a principal or partner. The effect of practice size became stronger over time. By far the largest predictor of incentive use is the location of the GP. Compared to GPs in cities, GPs located in outer regional areas were much more likely to participate in these incentive programs. Finally, gender does not appear to be a significant predictor of incentive use.

DISCUSSION

It is not surprising that GP location is associated with incentive use, as a number of additional incentives are available for GPs in rural areas. Two PIPs are aimed exclusively at rural practices; one is for practicing in a rural location; and one for performing certain non-referred services in rural locations. Practice size, measured both by the number of GPs and the number of administrative staff in the practice is significant in explaining incentive use in both years. However, the effect of having more than 10 GPs in the practice diminishes in magnitude from 2008 to 2011. On the other hand, the effect of having a large number of administrative staff working in the practice increases in magnitude about 2.5-fold in this period. This result accords with other reports of a large administrative burden associated with claiming.

What is surprising is the trend in turnover of participation, with some GPs starting to use incentives, but a larger number ceasing to do so over our four year period. This is surprising because while there have been a number of changes to grants and incentives since the introduction of the Better Practice Program in 1996, the most recent changes such as the Enhanced Primary Care Package, the SIPs, the increase in the GP attendance rebate to 100%, higher rebates for after hours attendances, and new items for mental health services had been introduced before 2008. Therefore, for the period of this study, entry and exit to the schemes could be expected to be stable.

Unfortunately there is a lack of detail in the MABEL data on further aspects of employment and income. Nor do the data distinguish different types of payments, such as PIPs from service related payments, i.e. SIPs. So we were unable to investigate these effects further.

Our findings raise several implications for continuing or extending the use of financial incentives in Australian general practice. It is important to consider the administrative cost of claiming any incentive, as well as the cost of providing the service relative to the reward. The decreasing participation of urban GPs may reflect some blunting of the incentive effects of relatively small payments; that is, they become less effective over time. The differential retention of rural practitioners may reflect a higher reward relative to effort for those incentives specifically targeted to rural practice or they may reflect other characteristics of rural practice. The response to incentives depends not just on the design of the incentive, but also on other conditions such as levels of demand, or changes in treatment approaches.

For example, faced with increasing demand it may be less effort to expand numbers of consultations than to claim additional payments, particularly in areas with high demand. This applies to disincentives such as reduced rebates and/or higher patient co-payments also. Therefore, financial incentives should be reviewed and evaluated regularly. Finally, this and similar studies only show the use of incentives by providers; the impact on patients, their care and their health warrants investigation in any evaluation of the role of financial incentives.

Bulk billing incentives

CONTEXT

Medicare provides a fixed, government-determined, rebate for medical services, including GP attendances. Importantly, under existing Medicare arrangements, provider fees are not regulated, thus doctors are free to set their own fees and are allowed to alter their fees at any time and to any patient. Any charge above the Medicare rebate is paid for directly by patients through out-of-pocket (OOP) costs, also known as a co-payment.

The appropriate use and effect of co-payments, particularly in primary care, remains a hotly contested issue as demonstrated in the reaction to the proposed compulsory co-payment in the 2014 Budget. On the one hand, co-payments can be seen as a useful approach to demand management and reducing government outlays; on the other, as imposing barriers to access of appropriate and timely care which affect lower income groups disproportionately.

The Strengthening Medicare reforms were introduced between February 2004 and January 2005. Two of the main reforms were aimed directly at reducing the OOP costs for GP visits, an additional payment for bulk billing children and concession cardholders and an increase in Medicare rebate for all GP consultations and for all patients. At the time the bulk billing rate had fallen to 68% from a high of 84% in the mid-1990s. The measure was expected to cost $5.5 billion over a four year period, and represented an increase of 25% on the Federal Government's expenditure on GP care alone. Bulk billing rates rose, particularly in rural and remote areas of the country, and reached 80% of all GP visits by 2012 [5].

Despite the substantial increase in government expenditure, there has been limited evidence on the impact of the Strengthening Medicare reforms on the changes in OOP costs for different subgroups of the population. In this study, we examine how the new financial incentive impacted on the average costs per GP consultation and OOP costs for different population groups.

METHOD AND RESULTS

The Australian Longitudinal Study of Women's Health (ALSWH) has been following a cohort of Australian women since 1996. For about half the sample, the survey data can be linked to Medicare records thus providing a very rich data set of the experience of health and use of health services. We used individual-level quarterly summaries of Medicare claims for the period from January 1, 2003 to December 31, 2005, covering before and after the implementation of the incentives. In particular, we have examined OOP cost trends over time based on concession cardholder status and place of residence (urban *vs* rural). We also examine changes over time for those who faced low and high OOP costs prior to the reforms. We do this because GPs can respond quite differently to the new policy and looking simply at average effects can obscure important effects for sub-groups.

This study [5] found that the Strengthening Medicare reforms reduced OOP costs on average for women. However, the magnitude of the average OOP cost reduction was relatively small compared to the cost to government. The incentives were targeted to concession cardholders and rural residents, and both these groups benefited more; that is, they experienced higher than average reductions in OOPs. Unexpectedly, OOP costs increased for most non-cardholders in the sample following the implementation of the new incentives. For these patients, the reforms were associated with an increase in GP fees that was higher than the increase in the Medicare rebate. This suggests that the reform has led to different pricing strategies among GPs, whereby they are more likely to charge lower fees to cardholders and higher fees to non-cardholders.

The impact of such price strategies needs further investigation to determine the longer term consequences on health care utilisation, downstream costs and health outcomes.

DISCUSSION

The bulk billing incentives were successful in increasing bulk billing for cardholders, the group that was targeted by the policy, from 51% of consultations to 68.5%. However, the incentive payment rewarded those providers already bulk billing, so a large amount of government expenditure simply increased incomes for GPs who did not change their billing behaviour. This provides an illustration of the bluntness of many policy instruments and the difficulty of selective targeting.

The increased rebate (taking the rebate for GP attendances from 85% to 100% of the scheduled fee) could have had different effects depending on how GPs responded. GPs could increase their fees so that patients' OOPs remained the same, so that the rebate increase all went to doctor incomes; GPs could pass on the rebate increase to patients, so that patient OOPs decreased; or somewhere between so that the extra government expenditure on rebates was shared between doctors and patients. What appeared to happen was a mix of these reactions. Among non-cardholders, those women facing relatively high OOPs (average $18) experienced a fall ($3.25) but less than the rebate increase of $4.80. However, those facing lower OOPs found an increase in doctors' fees and non-cardholders were less likely to be bulk billed.

The heterogeneity in the response to these incentives is difficult to disentangle without more information about practice characteristics. For example, the change in practice income depends on the relative proportions of cardholders and non-cardholders in the practice population. We know from previous research that bulk billing rates are related to the socioeconomic status of the local area and the level of competition. These data are not readily available. For policy advisors' better understanding of the likely impact of financial incentives will require more information about business conditions and business models.

One outcome of these financial incentives is that concession card status became a stronger predictor of bulk billing and OOPs. Bulk billing has consistently been associated with lower household income, and doctors have argued that they are best placed to determine appropriate charges given their personal knowledge of the patient. Our finding suggests that this argument is misplaced. Alternatively their changed behaviour was a response to the signal of the bulk billing incentive that bulk billing was intended for a particular sub-group of the community as part of the social safety net.

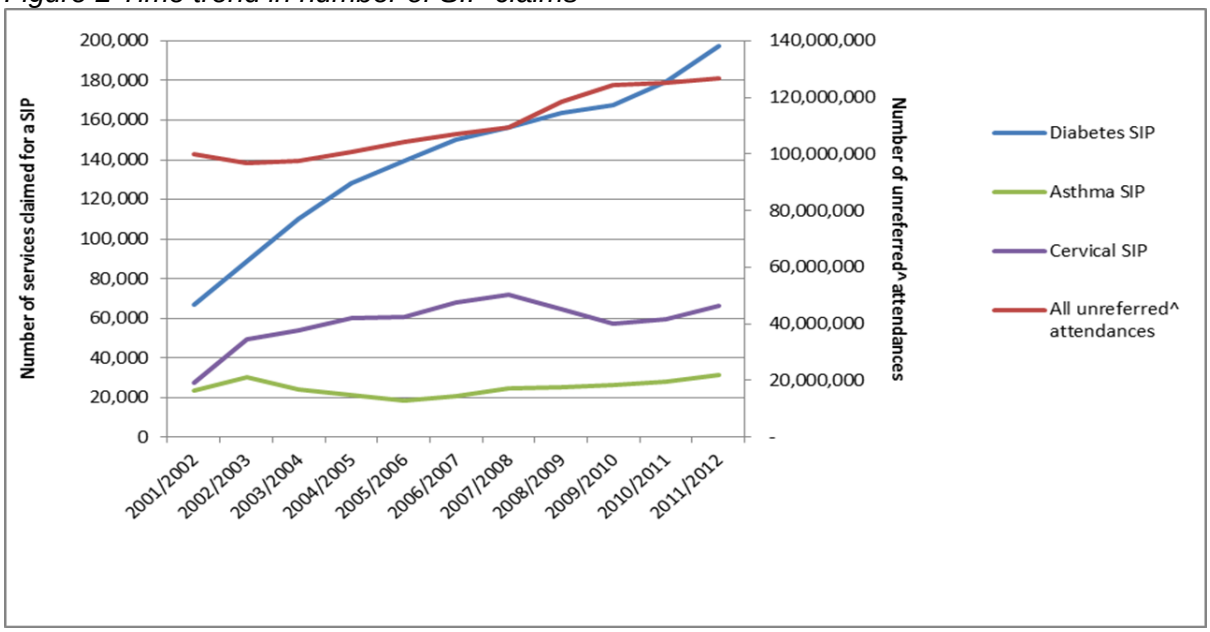
What this study also illustrates is the importance of considering unintended consequences. The health system is complex; reducing expenditure in one sector or area will rarely translate into an equal saving. The result is often to transfer costs from one payer to another such as shifting from government outlays to private costs, and to increase expenditure in another area.

Service Incentive Payments

CONTEXT

Service Incentive Payments (SIPs) were introduced for diabetes and asthma in 2001. Both specify a cycle of care which over a period of 11-13 months for patients with established diabetes mellitus, and at least two asthma-related consultations over 12 months. The uptake of the two programs has been remarkably different as shown in Figure 2. One possible explanation is that most diabetes patients are older and more frequently consult their GPs which makes it easier to include the cycle of care, whereas asthma patients are younger and when their asthma is well controlled may perceive a request to return for additional GP visits as an attempt by GPs to generate extra income. Asthma has been a national focus since the first National Asthma Campaign in 1990, whereas diabetes, particularly adult onset, came to prominence somewhat later.

Figure 2 Time trend in number of SIP claims



Although there are several studies examining the use of these financial incentives, most are descriptive in nature. The two studies that use quantitative data and econometric methods to evaluate the impact of the incentive program in Australia, have differing results. Scott et al. [6] use GP level data from the BEACH survey to analyse the impact of the diabetes SIP on the quality of care in diabetes, as measured by the probability of ordering an HbA1c test. Their results reveal a large positive effect of the incentive – a 20% increase in the probability an HbA1c test being ordered among the entire population, and an even higher increase (35%) among patients of Aboriginal and Torres Strait Islander descent. On the other hand, Greene [7] uses a panel dataset of GPs followed from 2000 to 2009 to evaluate the impact of participating in the incentive program on the number of HbA1c tests being ordered. Fixed-effects regression models reveal no within-GP impact of changing program participation. There are several potential explanations for the differing results of the two Australian studies. Most importantly, the Scott study relies on proxy measures for program participation while Greene fails to control for selection into the incentive program. Our first aim was to determine whether the use of survey data linked to health care utilisation data could provide richer insights on the impact of SIPs.

METHOD AND RESULTS

Our overall aim is to understand what impact the asthma and diabetes SIPs have had on patients' health, health care utilisation and the associated costs.

The Sax Institute's 45 and Up Study covers approximately 250,000 non-institutionalised people aged 45 and over in the state of New South Wales (NSW). The study collects a rich set of survey data and is linked to administrative health service data, including Medicare claims data from the Medical Benefits Schedule (MBS), and the Pharmaceutical Benefits Schedule (PBS), as well as the NSW Admitted Patient Data Collection (APDC), and Emergency Department Data Collection (EDDC), covering the period between 2006 and 2011. The MBS dataset covers the services funded by Medicare, Australia's publicly funded universal health care system for medical services, which includes number of visits to GPs, and specialists, and other medical practitioners, as well as diagnostic tests and procedures and hospital treatment as a private patient.

Notwithstanding the richness of this data set, there are a number of shortcomings and constraints.

The baseline survey was conducted between 2006 and 2009. Results from the second survey were not available so change in health outcomes could not be observed.

The SIPs program was introduced several years before the time period covered by the health service utilisation data. We cannot compare a period pre-intervention with post-intervention.

We can identify study participants who complete a cycle of care in the period covered by the data, but we do not know whether this is a first cycle of care, or whether they have received several cycles of care.

There are many challenges in addressing the impact of SIPs. Ultimately, the policy's intended effect is to improve health outcomes for selected patients through providing more appropriate care while reducing or at least not increasing the costs of care. There are few data sets which provide direct measures of patient outcome, so many studies have to rely on proxy measures such as increased routine testing or reduced hospital admissions. Selection effects are pervasive; GPs decide whether or not to participate in the program, then they decide which patients to include, patients decide which GP to visit regularly and whether to comply with the program. For example, GPs may decide to participate because they already have good outcomes for their target patients. Given the limitations of the data available, we first analysed the take-up of the Service Incentive Payment for Diabetes and Asthma with the aims of 1) explaining who is most likely to have had at least one SIP, and 2) what influences the number of cycle completions.

Diabetes

Individuals were identified as having diabetes in any one of the following ways: 1) reporting having diabetes in the survey; 2) an MBS claim for 2 or more HbA1c tests undertaken in any calendar year; 3) a PBS record of at least 3 months of treatment of insulin or an oral antidiabetic; and 4) a hospital admission related to diabetes. Around 12% (33,135) of 45 And Up Study participants were diabetics. Around 42% (14,127) of these individuals had completed at least one SIP cycle. The diabetics who had claimed SIP are more likely to belong to lower income households, hold a concession card, be older, live outside major cities, born in Australia, and have more chronic conditions compared with the group that had no SIP claims. There is no discernible difference between the groups in the remaining socio-demographic factors.

Once an individual has received one SIP, the average number of SIP claims is around 2. Higher socio economic status was associated with a lower number of SIP cycles completed, as evidenced by employment status, concession card status and household income. Worse

health is also associated with more SIP cycle completions. Those born in Australia and those who live in inner regional areas are more likely to have a higher number of SIP cycles.

Asthma

Asthma SIPs are targeted to patients with moderate to severe asthma. Individuals were identified as asthmatics if they had 1) a hospital admission for asthma or 2) an emergency department attendance for asthma 3) two or more prescriptions in a year for preventer medication (inhaled corticosteroids, cromones or leukotreine receptor antagonist). In addition they had to report asthma in the survey or have asthma identified as a comorbid condition in at least one hospital admission. Our definition identified around 7% (19,181) participants in the 45 and Up Study as having moderate to severe asthma, of whom 1,423 (7.4%) had a claim for at least one SIP. We found that older people with comorbidity were less likely to claim a SIP relative to younger people without comorbidity. People living in remote and very remote areas were more likely to have had a SIP than those living in major cities. Unlike the diabetes SIP analysis, we did not find significant effects for socioeconomic status. The likelihood of a SIP claim increased substantially as the frequency of GP visits increased; but we do not know whether this group of people were already higher users of GP services, or GP visits increased due to the SIPs. The results also showed that people who saw many different GPs (more than five in a year) had a lower likelihood of having a SIP claim.

DISCUSSION

This study showed quite a different immediate impact between the diabetes and asthma SIPs in terms of the take up and the group of patients most likely to have claims. Although asthma SIPS were more likely to be claimed on behalf of younger patients, the penetration into the target group was very low. However, the take up of SIPs will be influenced by the characteristics of the doctors and the styles of their practices. This data set does not provide information which would enable further investigation but it could be that this is at least as important as patient characteristics and possibly more so; the practice needs to be able to set up a new charging item and ensure the appropriate follow up. Our results showed that patients visiting several GPs were less likely to have a claim; another interpretation is that practices with a highly mobile population are less likely to find it worthwhile to set up the follow up required to claim SIPs.

The first conclusion to be drawn from this project is that financial incentives work differently, and this does not provide generalisable findings about the impact of financial incentives. This underscores why the literature on financial incentives is so inconclusive. Funders can establish new payments but they will not be used equally by all providers or by all patients. These selection effects (patients choose their GP; GPs decide whether to participate in the pay for performance scheme) are a major challenge to rigorous evaluation. The textbook approach to evaluation aims to abstract from selection effects, and determine whether the intervention works, on average, for everyone.

In contrast, the implementation of policy has to work with selection, that is, some doctors/practices will participate while others will not. What is important for policy development is to understand and forecast the level of participation, and the impact on those patients who are covered. It may be more effective to move from one policy which is applied to all to better targeting policies where they will be most cost effective.

Rural practice – addressing the maldistribution of GPs

CONTEXT

Doctors' preference to live and practise in urban areas is well established, over time and over many different countries. As a result, rural and remote area residents face greater problems of access to care which may lead to poorer health outcomes. While specialist services by their very nature may require more centralisation and proximity to specialised facilities, this is not the case for primary care. This is particularly germane to Australia, for several reasons. Most of the population is urbanised, so rural and remote area residents represent a small population group spread across a vast land mass. Medicare is a national system which aims to provide equitable access to care for all Australians. Increases in the numbers of doctors trained over the last three to four decades have redressed the maldistribution.

There have been a number of strategies employed to encourage rural practice. The strongest factor predicting rural practice is having grown up in a rural area. This has been the basis for a policy under which rural residents are given priority entry to medical schools. Medical training has been redesigned to include rural placements, thus giving students exposure to rural life and practice. There have also been several financial incentives aimed at increasing the attractiveness of rural practice.

METHOD AND RESULTS

This study used the MABEL panel, Medicine in Australia - Balancing Employment and Life (MABEL) survey of medical practitioners in Australia, which started in 2008. This gives a sample of approximately 2,500 GPs with sufficient data on earnings and hours worked. The information on government incentive payments was limited to one question on the percentage of gross earnings from government incentive grants and grants in the last year. MABEL also provides a rich set of demographic data and work characteristics as well as attitudes and preferences assessed through a Discrete Choice Experiment. This allows a much richer modelling approach, adjusting for many factors that in other data sets are simply unobserved.

The results show that higher rural subsidies attract more GPs, thus improving the GP-to-population ratio. Male GPs respond more, perhaps reflecting that female GPs are more likely to be constrained by partner work choices. The modelling also investigated the effect on hours worked as supply and therefore access to primary care depends on both numbers of GPs and the hours worked. The results were very small but with higher earnings male GPs tended to work longer hours, while female GPs worked slightly less.

DISCUSSION

Unfortunately, the question on the use of government incentives as asked in MABEL is imprecise. We are not able to distinguish which types of incentives work and for whom. Earnings though are a significant factor in addressing the maldistribution of GPs across rural/remote and urban areas of Australia. This data set does not allow exploration of the issues of risk and the certainty of earnings, which might also affect willingness to work in rural and remote locations.

This adds to the body of evidence on the effectiveness of financial incentives. We also conclude that this should be carefully designed and be aligned with non-financial incentives.

After hours care

CONTEXT

There has been an increasing reluctance of GPs to provide after hours care in Australia as in other countries. The reduced availability of after hours care has potential effects on continuity of care, of increased use of Emergency Departments, or of people forgoing appropriate care. There may be several reasons for this trend. One argument has been that the remuneration provided for after hours care has been too low to compensate for the impost of working unsociable hours. Another is that increasing female workforce participation has changed the availability of both men and women for paid work.

There have been several grants and funding schemes to promote more access to after hours care, aimed at increasing the number of services. These have included encouraging medical deputising services, grants to Medicare Locals to provide services, and new MBS items for after hours non urgent attendances and increased rebates for urgent attendances. Grants to practices to increase after hours care have been made under the Practice Incentives Payments, with new payments introduced in July 2015.

METHOD AND RESULTS

We examined the incentives set by the price signals set by Medicare. Medicare rebates set a floor price, in that this is a minimum price guaranteed by government. However, Australian GPs are free to charge above that and the extent to which they do will be influenced by market conditions, that is the extent of competition and the responsiveness of patients to higher prices. As we would expect, areas with higher numbers of GPs have higher rates of bulk billing (lower prices), areas with higher socioeconomic indicators are associated with lower bulk billing rates (higher prices).

Introducing a higher rebate for out of hours care could either encourage or discourage the provision of out of hours care. As the remuneration for out of hours care is higher, doctors face a higher opportunity cost of not working and so are induced to increase their supply. Alternatively, as their earnings increase, doctors have higher incomes and this allows them to choose to work less.

Higher prices can also have an unexpected effect on consumer behaviour, that is, by encouraging rather than reducing demand. The classic example is from child care. A childcare centre facing increasing staff dissatisfaction as they were required to work overtime waiting for parents, introduced higher penalties for late collection of children. Instead of less late collections, there were more. It seemed parents no longer considered their lateness an imposition on the childcare staff, but rather a service for which they were being paid.

The market has responded by increasing supply through the development of Medical Deputising Services which exploit a market niche, underpinned by MBS rebates. The rapid and pervasive growth of this may impact on the conditions more traditional general practices face, just as the advent of walk-in bulk billing clinics did in the 1980s.

DISCUSSION

Government policy and financial incentives combined with decreasing supply of after hours care from traditional sources, that is GPs providing their own after hours cover, created a set of market conditions which encouraged a new business development. Health care is seen as a business opportunity with growth driven by a population with increasing expectations, which is ageing and in some groups rising disposable incomes which they are prepared to spend on health care. This means that it is important for policy advisors to understand the market conditions and business models of providers and would-be providers.

The corporatisation of general practice is another aspect of this. While it is easy to think of GPs as self-employed, and to design incentives around the traditional form of practice, corporatisation means that GPs are now in various employment relationships with corporate practices. Practice managers are commonplace and corporate chains are likely to develop quite different business models.

We can predict, given the price signals set by Medicare and the market conditions that corporate health care providers will seek to

- Increase fees to those willing and able to pay, and this includes pressure on government to increase rebates
- Increase volume of services.

Both of these will increase revenues and profit. We can also expect vertical integration to capture a greater share of profit; that is to see corporates expand into diagnostic imaging and pathology. Ownership of retail pharmacies should be attractive but is infeasible under current Australian law. Certainly this is reflected in recent corporate developments.

Models for integrated care

CONTEXT

The fee-for-service model of Australian general practice rewards volume. Historically, GPs worked in solo practice or in small partnerships; as self-employed professionals they were business managers as well as the service provider. They built capital through goodwill in the practice which made the practice saleable. Patients relied on one GP for all their care including after hours and emergencies. Most illnesses were acute and self-limiting. Fee-for-service in that context rewarded GP effort.

Things have changed. There has been a strong move into larger and often corporatised practices which can provide stronger management and financial and administrative support, allowing doctors to focus on medical care. Younger practitioners value some job mobility and reduced and predictable working hours. Practice goodwill is non-existent. Patients are prepared to use multiple providers, to meet their needs for convenience and to take advantage of specialisation within general practice. Most importantly, the burden of disease and illness has moved from acute episodes to ongoing management. This requires a more integrated approach to managing care which is not well supported by fee-for-service. Yet there is some resistance among Australian consumers.

METHOD AND RESULTS

We have reviewed previous experience in developing integrated models of care to identify what can be learnt about designing a structure which will facilitate integrated care. We have used analysis of the 45 And Up Study and Medicare Statistics for further insight.

The first Australian Co-ordinated Care Trials were conducted over the period1997-2000 with a well-planned evaluation. This was an early adoption of integrated care and attracted international attention. There were 13 pilot programs. While there were some improvements in co-ordination of services for some patients, the programs also identified a range of unmet needs. Consequently, the anticipated savings were not realised. A second round of five pilots ran over the period 2001-05, attempting to better target the group most likely to benefit. Again the results were disappointing, with a general conclusion that this would not be financially viable. Further pilots have followed with the most recent to report being the Diabetes Care Project which ran 2011-14 and cost $33m. The results showed a decrease in hospitalisations but no cost savings. There are a number of other pilots in progress, including the Gold Coast Integrated Care program, the NSW Health Integrated Care demonstration projects, and several services supported by Primary Health Networks and hospitals. This has the potential to add to the complexity of the health care system rather than reduce it. Indeed, one care co-ordinator told us her job was now helping the patient co-ordinate all her co-ordinators.

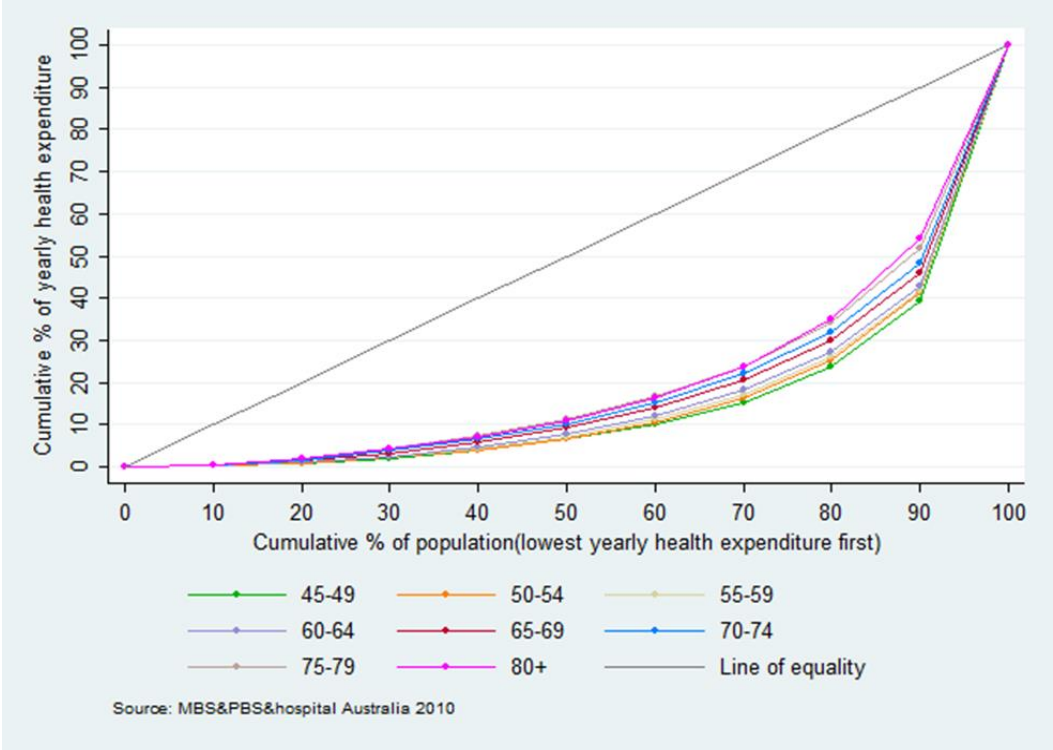
International experience supports the Australian findings that designing integrated care is challenging. Simply adding a co-ordinator is not enough. Other barriers include,

- Lack of a shared national and local vision for integrated care
- Organisational and financial divides between health care sectors
- Governance structures that are poorly aligned with integrated care
- Incentives for quality outcomes, not just activities within sectors
- Sufficient scale and support for primary care to be at the centre of care for patients and providers
- Information technology to improve care coordination, evidence-based practice, reduce waste and performance management

- Lack of process for continuous improvement through innovation, evaluation and implementation.

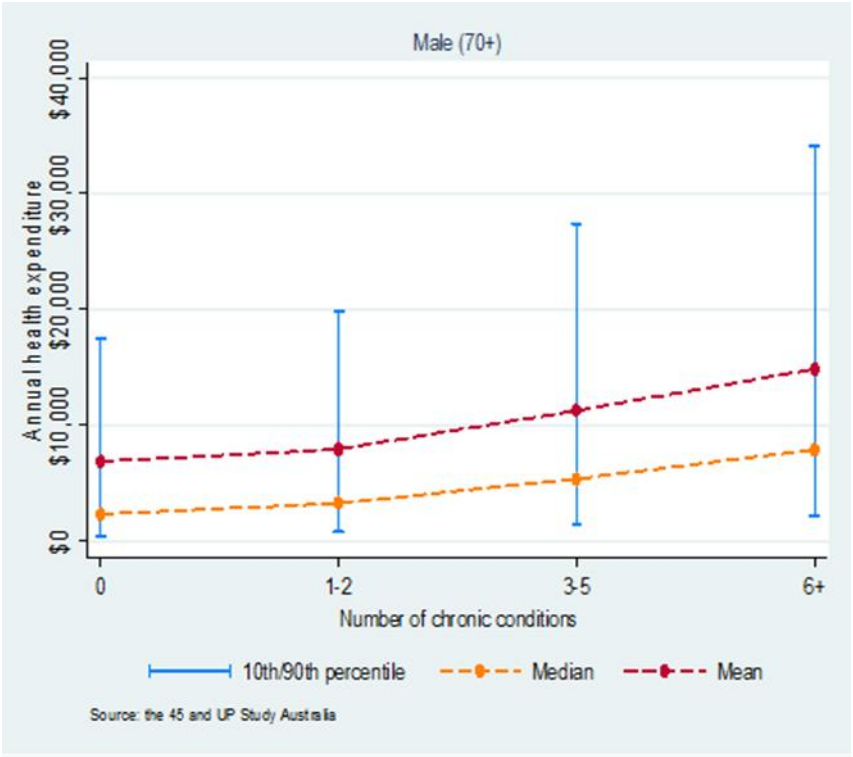
The rationale for integrated care, or at least part of it, is to focus on the relatively small proportion of the population which accounts for the greatest part of health care expenditure.

Figure 3. Concentration of health care expenditure in different age groups



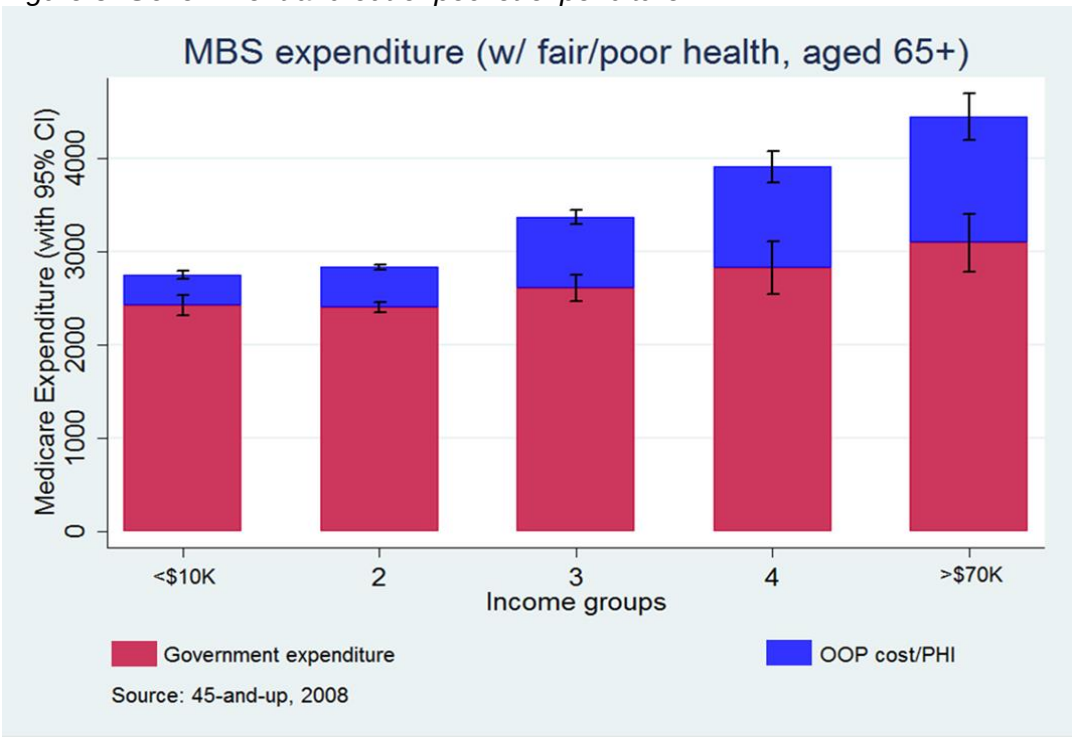
Further analysis shows that while the number of chronic conditions explains some of the concentration, these factors do not explain all of it. There is still wide variation in the expenditure on apparently similar patients. Figure 4 shows the results for males, results for females are similar.

Figure 4. Mean vs median expenditure by no of chronic conditions, males aged 70 plus



It could be that there are differences across the patient group for which we have not accounted. Given Australian Medicare aims of equal access to appropriate care irrespective of income, one of the factors that should not be influential is income. Our findings show that is. The health care expenditure for older Australians in poor or fair health in the NSW 45 And Up Study is shown in Figure 5. The wealthier group spend more OOP than the low income group, but the former also attract a higher level of Medicare spending.

Figure 5. Government and out of pocket expenditure



Simply, if high co-payments deter the poorer groups from using care, the part-subsidies will in practice flow to those groups paying the co-payments who are better off.

It is also plausible that these differences are due to different behaviours by providers, generated by different approaches to the business of health care.

DISCUSSION

There is now widespread agreement that fee for service primary care is no longer suitable as a funding mechanism. This support includes the medical profession and represents a big shift in attitudes over the last decade. Hence the general backing for the development of health care homes.

Experience here and internationally has shown that simply agreeing that a more integrated approach is appropriate and designating a co-ordinator is not enough. Successful integrated care requires major redesign of the organisational structures, funding mechanisms, communication strategies, and in addition targeting those patients who will benefit most.

Funding mechanisms must also recognise the market context and the business models of providers. Financial rewards must be sufficient to generate business changes, whether that be in the approaches of existing providers or in the creation of new provider models. For example, at the practice level, integrated care could require taking on new staff, developing and learning new IT, developing and implementing a process to identify patients, and then establishing more integrated service pathways. The costs of that spread over 5% of the patient population vs spread over 50% of the patient population are very different business propositions. But to be successful integrated care must offer a rewarding business opportunity.

Health care is an important economic sector, accounting for almost 10% of gross domestic product (GDP) in Australia. The ageing of the population, many with high wealth which they are prepared to spend on their own quality of life, and the support of government programs, means that the health sector presents an interesting investment opportunity. New approaches to paying for health care must not be based solely on small practices with doctors as principals but also take account of entrepreneurial entrants to the health sector.

Conclusions and policy implications

The way that health care is paid for does make a difference to what is provided, and financial incentives do work in changing behaviour. The evidence on how effective and for whom is mixed; this is not surprising given the differences in health system organisation, type and size of financial rewards and penalties, the type of behaviour targeted and the recipient of the reward. It is important to note also that what is paid for is often what gets counted, and this imposes limitations in understanding what care is provided.

Our research has demonstrated that financial incentives can become less effective over time, though whether as a result of provider attention moving on to other initiatives, or the size of the reward decreasing relative to the costs and burden of making claims is not clear. We have also shown that larger and more organised practices are better able to claim new financial incentives. An extreme situation is where a new organisation emerges in response to new incentives, such as has been seen with the recent growth of Medical Deputising Services. We have also shown financial incentives can have broad consequences and their effect is much wider than the service or process targeted, such as the bulk billing incentives.

Our research has also raised a number of issues that need to be considered in developing financial incentives. It is important that financial incentives are aligned with organisational structures and approaches that equip providers to respond to change positively. Financial incentives rely on extrinsic motivation; yet intrinsic motivation is also important though often overlooked in this literature. In particular, policy advisers should recognise that extrinsic motivation can crowd out intrinsic motivation and lead to unintended consequences.

Australian Governments have been increasingly concerned by the growing cost of Medicare, even more so as economic conditions have changed leading to rising government budget deficits. There are various aspects of sustainability. One aspect is the capacity of the economy to support additional health care expenditure. Another is the capacity of government revenue to match expected outgoings. Another is to ensure that expenditure is efficient and effective. Finally equity remains important as a key objective of Medicare and the Australian health system both in ensuring access to care and raising the finance for that care.

A simple comparison of Australian total health expenditure with other OECD countries shows that the Australian economy could support higher spending on health. Australia is a low tax country with moderate health expenditure. Increased health spending could be financed through higher taxes or through increasing reliance on out of pocket payments. The Australian system already has a high reliance on out of pocket payments. High out of pocket charges have distorting effects beyond introducing barriers to access; they change the type of services provided, and affect the distribution of government benefits.

Financing through income taxes care is generally considered equitable, as it results in a redistribution of health service purchasing power from high income healthier groups to low income groups with poorer health. This is the primary tax base in Australia. However, one of the consequences of an ageing population is a greater proportion of the population not participating in the workforce and therefore contributing less to the tax base. The cross-subsidy from the working age population to the elderly is not a large impost when the relative size of the elderly population is small. But as the dependency ratio falls it becomes significant. Australian baby boomers may become income poor but are generally asset rich, particularly those who have benefited from rapidly rising house prices and generous superannuation concessions. There is an inter-generational equity argument for extending the contribution to national health care funding by this group. The argument for increasing the GST would ensure a higher tax contribution form the non-working population but this does not take account of their relative means. For this older age group, a wealth tax rather than an income tax reflects more accurately an equitable contribution.

Sustainability also requires improving productivity. This presents particular challenges in the primary care sector. Even the definition of productivity is not straightforward. An attendance or service is a poor proxy for output but in primary care episodes of care are ill defined, particularly in the management of chronic diseases. Health outcomes are important but often distant and primary care is only one factor. Costs are not known and collection of cost data for reimbursement and pricing will introduce an incentive to increase costs

We conclude from our research and analysis that new payment mechanisms should be designed to ensure appropriate incentives for efficiency rather than managing inputs and specifying processes. The idea of not paying for ineffective care or low value items sounds appealing, but the robustness of the evidence and the fact that what is effective depends on characteristics of the patient, their condition, and the alternative treatment are major challenges making the identification of low value care a complex and costly undertaking. For those at low risk of becoming high cost users, bundling care into episodes may be more effective than respecifying fees for a series of inputs.

A more integrated approach is needed for high cost, highly complex patients. Experience in Australia and elsewhere has shown that a series of piecemeal payments is not enough. Developing payments for health care homes should consider the changes that need to be made at the practice level, recognizing that there are different types of practice. Primary care providers are in business and need viable business models. An early consideration is the extent to which specialist providers of chronic disease management programs are to be encouraged.

Finally, equity of access remains a challenge in Australia despite the universality of Medicare. New attempts to improve efficiency or reduce costs must be monitored for any unintended effects on equity.

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Appendix

Table 1: Overview of international experience with primary care payment systems

Country	Payment System	Findings
Canada – National[8]	Comparison of FFS, salaried and blended systems.	Research based on a national survey of primary care physicians. Regardless of physician type, those paid by fee-for-service (FFS) saw more patients per week than if paid by other mechanisms. FFS physicians saw double the number than salaried physicians.
Australia – National[9]	Medicare - FFS	Research based on a combination of review of professional literature and focus group interviews. There was a perception that "GPs should be left to organise their own work lives", and that the national public system - Medicare - was about cost-containment and not health. Bulk billing (whereby physicians did not charge patients, but billed the government directly) was perceived by GPs as a limit on income which resulted in an increase in work load (patients demanding care because it is "free"). As a result of limited incomes, GPs were changing practice structures (eg forming groups) to attempt to streamline business arrangements; or asking patients to prioritise what would be addressed in a consultation; or rationing through use of fees or shorter consult times.
Canada – Nova Scotia[10]	Comparison of FFS, salaried and blended systems.	Using database of primary care services provided in Nova Scotia, assessed link between service volume, payment type (FFS, salaried and blended) and physician working hours. Physicians paid via salaried and blended payments work shorter hours and performed fewer services (53% fewer in the case of salaried physicians) than FFS physicians.
France – National[11]	Regulated and unregulated fees.	Testing the impact of regulation of fees on the leisure-consultation time trade-off for physicians. Find that in services where the fees were regulated, GPs traded leisure time for consultation time (longer consultations led to less leisure time). However, where physicians are able to increase fees to compensate for longer consultations (an unregulated fee), leisure time was not affected by consultation length; physicians merely increased fees to compensate for the longer consultation. The analyses controlled for covariates such as practice characteristics (free and home consultations, internet connection, rurality) and patient characteristics (the proportion with free services, age).
New Zealand – National[12]	Capitation with patient top-ups	Assessed the introduction of Primary Health Organisations in New Zealand: a capitation funding model, with patient payment top-ups. Noted that fees paid per patient decreased, but the service utilisation increased compared with the previous FFS system.
Netherlands – pilot program[13]	Blended/bundled payment systems	Assessment of bundled payment pilot programs for diabetes care. Found that there was improved collaboration by health care providers, improved

Country	Payment System	Findings
		protocol adherence and improved transparency with respect to care. Payments were for care provided by a range of providers. Provision of care was dominated by GPs. Across the country there were large variations in costs that were only partially explained by differences in the type of care. The program was administratively complex and burdensome.
Canada – National[14]	FFS, salaried and bundled.	Data from 2004, National Physician Survey were used to report a clear difference for FFS physicians in terms of the number of services (more), time per patient (less), gender (male), and practice type (non-collaborative) compared with salaried/non-FFS. Using a regression analysis approach, the authors find evidence of: 1. a positive selection effect – physicians who choose to work under non-FFS are those who would otherwise have seen more patients per week regardless of payment mechanism 2. a negative incentive effect once selection effect is controlled for i.e. FFS encourages those physicians to see more patients per week than would otherwise occur relative to non-FFS. The suggestion therefore is that controlling for patient type, physicians under salary have a propensity to see more patients than those under FFS, but don't do so because they spend more time with them and perhaps because cases are more complex. Therefore shifting all to FFS wouldn't increase number of cases.
Canada – British Columbia[15]	Pay for performance	The research presents an analysis of how payment of incentives for specific chronic health conditions (e.g. diabetes and congestive heart failure) has improved outcomes (reduced hospitalisations). It is claimed this is through fostering increased attachment for patients with GPs.
USA[16]	FFS and capitation	Investigating the impact of primary care physician payment systems on subsequent surgery rates. Finds that in the absence of referral restrictions, shifting from FFS to capitation payments for primary care leads to a 35% increase in surgery rates (due to primary care acting as a net substitute for specialists). Where referral restrictions exist, there is no significant relationship between payments to primary care physicians and surgery rates.
Norway – National[17]	Salaried and FFS (under contract)	Key results of a survey of 1639 Norwegian physicians (47% of all primary care physicians in Norway in 1998), in which contract physicians were paid on a FFS basis: Salaried physicians have fewer consultations, more contacts than contract clinicians. Contract physicians have lower referral rates (to hospitals) than salaried. No evidence of SID in terms of visits per capita.

Country	Payment System	Findings
		Ordering of laboratory tests did not differ based on remuneration type. Consultation time can be used as a measure of quality, particularly if cross-referenced with patient satisfaction measure. The authors construct a modelled analysis of choice of contract based on physician demographics, what they prioritise (family/leisure/income/medical duties), whether contracts are centralised, if they specialise, and the number of years of practice. Model is based on revealed, not stated preferences. Positive factors for choice of FFS: age, seniority, specialisation, centralisation. They suggest that in the short term, observed higher throughput for FFS clinicians due to both selection and incentive effect, but overtime the selection effect fades and it is due to the incentive effect (as physicians change preferences).
Canada[18]	FFS, salaried and capitation	Presents results from interviews with 39 individuals across the Canadian health care system regarding payment systems, incentives and their effects. Key messages: 1. FFS most appropriate to increase quantity of care, but can lead to excessive/unnecessary care and reduce collaboration. 2. Capitation increases collaboration, use of preventive health/health promotion, and reduces unnecessary care, but is skewed towards low-risk patients. 3. Salaried payments increases care in low density areas (such as rural/remote), and increase collaboration; treatment skewed to low-risk patients. Suggest combining salaries and capitation to achieve desired goals in rural/remote areas. Blended payments eg capitation with FFS for specific beyond "basket" services might be preferred in some situations.

Two Cochrane reviews of the impact of financial incentives and payment systems on the outcomes of primary care were also identified. The first, Flodgren et al (2011) focused on reviews of the impact of incentives/payment mechanisms on physician behaviour and outcomes. [19] This was based on four reviews encompassing 32 studies and concluded that in terms of their impact on outcomes: payment for working for a specified period of time was ineffective; payments to target specific groups or conditions were considered effective; payments for process changes or quality of care were generally effective. In terms of improving the process of care, payment type had a mixed effect on consultation/visit rates, they improved referrals and admissions, were ineffective in terms of compliance with guidelines, but were generally effective in improving prescribing costs outcomes. [19]

The second review by Scott et al (2011) focused on the impact of payment systems/incentives on the quality of care. This review was based on seven studies across various payment mechanisms, evaluated across numerous indications and in different

manners. Six of the studies found some effect of incentives on the quality of care, the other found no effect. However, none accounted for the ability of physicians to self-select into or out of the incentive schemes (which would potentially bias the results observed). [20]