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An exploration of the inverse care law and market forces in Australian primary health care

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ABSTRACT

This paper examines the implications of the second sentence in Tudor Harts statement about inverse care – that its operation was strongest when exposed to market forces. In the Australian context, we briefly review some available evidence for inverse care in three groups – Aboriginal and Torres Strait Islander people and those living in remote and socioeconomically disadvantaged areas. We then discuss the extent to which these examples can be attributed to the operation of supply-and-demand within Australia's hybrid fee-for-service system in general practice. Our analysis suggests disparities in workforce supply and the ability of disadvantaged groups to seek preventive and proactive care are critical factors. These, in turn, suggest the need to fund general practice to be responsible for proactive and preventive care of disadvantaged population groups alongside broader structural reforms in workforce, education and taxation.

Keywords: accessibility, equity, health services, healthcare reform, indigenous, market forces, primary care, rural and remote, socio-economic disadvantage, workforce.

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Introduction

'The availability of good medical care tends to vary inversely with the need for it in the population served. This inverse care law operates more completely where medical care is most exposed to market forces and less so when such exposure is reduced' (Hart 1971). Box 1 provides definitions for some the terms.

Tudor Hart was a GP working in a deprived mining area in Wales in the 1960s. His 1971 proposition was based on decades of experience in primary health care in one community. He also recognised that health was influenced by the social, economic and political environment in which people live, which was subsequently substantiated in the Solid Facts by WHO Europe in 1998 (Wilkinson *et al.* 1998).

There is evidence for systematic differences in the health of Australians. Table 1, from Australia's Health 2020, compares the self-reported prevalence, rates of hospitalisation and death, and the burden of chronic disease on Aboriginal and Torres Strait Islander people, people living in remote areas and those living in areas with the lowest socioeconomic status. All three groups exhibit high rates of use of hospital services and worse health outcomes, and higher use of hospital health service outcomes (Australian Institute of Health and Welfare 2020).

The way health care is distributed and provided can also either reduce or contribute to these differences. In Australia, it is difficult to determine the extent of this contribution because of a lack of systematically collected information about differences in access and because of difficulties in attributing the impact that reduced access has on health. Table 2 compares some of the available data on the provision and use of health services across the same groups. There were similar disparities in relation to workforce availability and uptake of preventive care (cancer screening) across the three groups compared to other Australians. Ratios for use of general practice and co-payments differed with lower co-payments and higher levels of use of general practice by Aboriginal and Torres Strait Islander people and low socioeconomic areas compared to other Australians, whereas the pattern was reversed in remote areas. In urban low socioeconomic areas, although the level of use of GPs was higher,

Box 1. What we interpret Tudor Hart's terms to mean

- *Availability*: Care that is able to be used or obtained in a location or time. In this context, we interpret to mean the provision of health care in a way that can be readily accessed by all independently of their culture, language, social status or income.
- *Good medical care*: This includes quality of care. In this context, we interpret it to mean comprehensive primary health care that addresses patient needs and priorities.
- *Need*: Something that is essential or important for the health of the individual and population.
- *Population served* (implied): All the people who are potentially provided with health services – which may be defined by location and/or population characteristics (e.g. Aboriginal and Torres Strait Islander people).
- *Market forces*: The forces of supply-and-demand that influence the price and availability of goods and services in a competitive market.

Table 1. All is not equal: From the Australian Institute of Health and Welfare (2020). Australia's health 2020: in brief. Australia's health series no. 17 Cat. no. AUS 232. Canberra: AIHW.

Comparing age-standardised rates for:	Aboriginal and Torres Strait Islander/ non-Aboriginal and Torres Strait Islander	Remote and very remote/ major cites	Lowest/highest socioeconomic areas
Coronary heart disease (CHD)			
Have CHD	2.0×	0.9×	1.6×
Be hospitalised for CHD	2.1×	1.5×	1.3×
Die from CHD	2.0×	1.5×	1.6×
Burden of disease (DALYs)	3.1×	2.0×	1.8×
Stroke			
Have stroke	n.a.	1.2×	2.3×
Be hospitalised for stroke	1.6×	1.4×	1.4×
Die from stroke	1.3×	1.0×	1.3×
Burden of disease (DALYs)	2.3×	1.2×	1.4×
Chronic kidney disease (CKD)			
Have CKD	2.1×	n.a.	1.6×
Be hospitalised for CKD	4.9×	2.7×	2.2×
Die from CKD	3.6×	1.9×	1.8×
Burden of disease (DALYs)	7.3×	3.7×	2.3×
Diabetes			
Have diabetes	2.9×	1.2×	2.0×
Be hospitalised for diabetes	3.9×	2.3×	2.0×
Die from diabetes	4.0×	2.1×	2.3×
Burden of disease (DALYs)	5.6×	1.8×	2.2×

n.a., not available.

GPs provided shorter consultations to cope with their workload. In remote areas, GPs used co-payments to reduce demand. All three groups had higher rates of potentially preventable hospitalisations than the rest of the population, suggesting a level of unmet need for primary and preventive care.

Inverse care and market forces

In his second sentence, Tudor Hart relates the occurrence of inverse care to exposure to *market forces*. Here, he contrasted the fairness of the healthcare systems that are funded from taxes and planned based on an assessment of the need with the unfairness of those that are distributed based on supply by private providers and demand by consumers within a market economy (Hart 2010). This reflects the contest of ideas at the time over contrasting economic models of the UK National Health Service (NHS) compared with market-oriented systems such as in the USA (Mooney 1992). Since that time, the UK has moved to introduce market reforms into the NHS by separating purchasers (GP commissioning groups) and providers of public health services, and allowing a greater

Table 2. Provision and use of health care in the community (from Furler *et al.* 2002; Turrell *et al.* 2004; Bradbury *et al.* 2017; Callander *et al.* 2019*a*; Australian Bureau of Statistics 2019; Australian Institute of Health and Welfare 2021*a*, 2021*b*, 2021*c*).

Comparing age-standardised rates for:	Aboriginal and Torres Strait Islander/ non-Aboriginal and Torres Strait Islander people	Remote and very remote/major cities	Lowest/highest socioeconomic areas
Health and medical workforce availability/ accommodation	Lower proportion of Aboriginal and Torres Strait Islander people in the health workforce	Lower availability	Lower availability
Use of general practice	Slightly higher	Lower	Higher (but shorter consultations)
Co-payments	Lower	Higher	Lower
Cancer screening (Cervical, Breast, Bowel)	Lower	Lower	Lower
Potentially preventable hospitalisations	2.7-fold higher	2.6-fold higher	1.7-fold higher

degree of consumer choice while possibly increasing some inequities (Roland and Rosen 2011).

Australia has a hybrid market system. GPs are employed largely in private practice and funded largely based on the services they provide to consumers who can choose where they seek care. However, most GP income comes from Medicare (Wong *et al.* 2017). Primary health networks (PHNs) have been established to purchase a limited range of services where the Medicare system is perceived to have not provided care equitably or efficiently (such as in the care of some patients with mental illness and drug and alcohol problems) (Booth *et al.* 2016).

This system has failed to ensure a sufficient supply of the health workforce in primary health care and especially in remote and low socioeconomic areas (RACGP 2022). General practitioners (GPs) require lengthy training, and accreditation processes slow the workforce's responsiveness to changes in need. There are high rates of turnover and retirement from general practice (Brett *et al.* 2009; Bardoel *et al.* 2020). Although demand for, and use of, services is high in these areas, payments do not provide a sufficient financial incentive to attract the (under-supplied) workforce (given the workload and other barriers). State governments provide substitutes for some services, and PHNs have also commissioned some community-managed organisations to provide some limited services; however, these have not been sufficient to address the problem.

In rural and remote areas, co-payments have been used by GPs to moderate their workloads (Duckett *et al.* 2014). This has created a selective barrier to low-income groups accessing preventive and pro-active primary health care. In urban low socioeconomic areas, GPs have used shorter consultation times to cope with the demand and help maintain practice incomes (Furler *et al.* 2002). In both cases, this has led to disparities in preventive and pro-active care, poor health status and higher rates of preventable hospitalisation, as outlined above.

Shortages in, and the maldistribution of, the health workforce are major causes of disparities in the provision of primary health care in Australia. This has been exacerbated in Australia's fee-for-service system, which relies on consumers seeking appropriate care. The difficulties that consumers have in making such choices is not new (Arrow 1963). However, the rise of chronic conditions and the increasing complexity of healthcare systems place high demands on the ability of patients from low socioeconomic backgrounds to do this. In both rural and low socio-economic status areas, these have been compounded by demand factors, including health-seeking behaviours, which prioritise reactive rather than proactive preventive health care (Jayasinghe *et al.* 2016). Although they tend to have lower co-payments, Aboriginal and Torres Strait Islander people are more likely to forgo or delay treatment because of cost than non-Aboriginal and Torres Strait Islander people (Callander *et al.* 2019*b*). They are under-represented in the health workforce, and this may reduce the acceptability of health services and their ability to accommodate their needs.

Government policy

Governments have the potential to influence inequities in the workforce distribution through taxation, regulation, and education, as well as through direct spending. Recruiting local students from rural and underserved communities has been shown to have some effect (Strasser and Strasser 2020). Early exposure of students to disadvantaged communities and engaging students and young health professionals in the communities influences workforce intentions about where to practice (Dubé *et al.* 2019). These are long-term strategies and need to be combined with interventions that provide incentives and reduce the costs to providers working with Aboriginal and Torres Strait Islander communities or in remote or low socioeconomic areas. Given the overall workforce supply problems, there is a risk that simply increasing fee-for-service funding for primary health care through Medicare may, in the short term, worsen the undersupply in these rural and disadvantaged areas.

There are structural problems within the Australian health system that make tackling these disparities difficult. The split in responsibility between the Commonwealth and States means that some of the consequences of inequities in access

to primary health care, such as increased demand on hospitals, are not directly born by the level of government that funds general practice. The other structural problem with private fee-for-service general practice and allied health is that service providers are not accountable for providing care for a population. Tudor Hart identified population accountability as a major strategy for rational planning to prevent market forces leading to inverse care (Hart 2010).

What would population-based, needs-based high-quality primary health care services look like? What would create the conditions to deliver them? At their inception in 2014, PHNs held the promise of providing a way to better meet population needs. This has influenced the commissioning strategies of PHNs, especially for mental health and drug and alcohol services. However, PHNs have not been funded to directly address the workforce supply or to improve access to general practice itself by disadvantaged groups. Providing capitated funding to support primary health care (including Aboriginal Community Controlled Health Organisations) to be responsible for the health care of disadvantaged populations would allow them to take a more active role in preventing inverse care.

Access to health services and the factors that influence it are better understood today than it was in the 1970s (Levesque *et al.* 2013). Practical actions that can be taken to address both the demand as well as the supply side factors influencing access to primary health care in Australia are illustrated in Table 3; this is adapted from the access model of Levesque *et al.* (2013) and a framework for low-income countries by Jacobs *et al.* (2012). Some of these can involve monetary incentives for patients or providers. Others require new programs or changes to existing service models. These interventions operate at the individual level to build health literacy and trust between providers and patients, and/or at the organisational level through incentives or new service models, such as outreach or navigation support.

Discussion

In Australia, universal funding for primary health care through Medicare and the PBS, in addition to commissioning and direct provision of primary health care through the PHNs and state health, are part of the social contract between government and the population. Despite this, there is evidence of inverse care associated with workforce supply and demand for health services.

Private primary healthcare services in low socioeconomic communities find it less profitable and have less workforce capacity to provide comprehensive proactive care. This is because fee-for-service funding has not kept pace with average weekly earnings, and the supply of the primary healthcare workforce is less in these areas. At the same time, demand for reactive care is high. As a result, many providers have responded by providing shorter consultations, more reactive care and/or asking patients to make co-payments (to help fund the service and/or to regulate demand). The actions of suppliers and consumers in Australia's mixed health market of public and private providers funded by the Commonwealth, State, and consumers contribute to this. Poor payment design provides greater incentives for low-value care (such as shorter consultations). This represents a policy failure – both in planning workforce supply and distribution and funding primary health care. Other measures are available, including a shift to capitated funding of primary health care to enable

Table 3. Demand and supply side interventions that address access to Australian primary care (adapted from Levesque *et al.* 2013 and Jacobs *et al.* 2012).

	Monetary	Non-monetary
Demand side (consumers)		
Ability to perceive		Build trust and education to improve health literacy
Ability to seek	Incentives for seeking preventive care	Provide information about health services
Ability to reach	Reduce or reimburse transport/parking and other costs	Support with transport. Reduce barriers (physical and social stigma)
Ability to pay		
Ability to engage		Support self-management and shared decision-making
Supply side (services)		
Approachability		Outreach/mobile services, continuity of care; Employment of local health navigators
Acceptability		Selection of health workers from disadvantaged communities
Availability and accommodation	Reduce tax and incentives for health workers in disadvantaged communities	Bilingual health workers, interpreters, extension of roles, telehealth
Affordability	Provide free care for disadvantaged patients	Provide information about costs of referral services
Appropriate-ness		Cultural sensitivity training for staff; access to allied health

it to take responsibility for disadvantaged populations as well as structural changes to education and taxation.

This analysis of the contribution of market forces to the inverse care law in Australian primary health care was limited by the availability of recent data on access to primary health care in Australia. Better data are essential to plan strategies to address inequities in access and to monitor if they are successful. As in the UK 50 years ago, there is today a contest of ideas about the optimal economic model for primary health care in Australia. There is recognition that although the current model may enhance consumer choice and provider independence, there is evidence that some disadvantaged groups receive less care than they need, and that this is contributing to health disparities.

References

Arrow KJ (1963) Uncertainty and the Welfare Economics of Medical Care. *The American Economic Review* **53**(5), 941–973.

Australian Bureau of Statistics (2019) National Aboriginal and Torres Strait Islander Health Survey 2018/19. Available at https://www.abs.gov.au/statistics/people/aboriginal-and-torres-strait-islander-peoples/national-aboriginal-and-torres-strait-islander-health-survey/latest-release

Australian Institute of Health and Welfare (2020) All is not equal (from Australia's health 2020, in brief. Australia's Health Series No 17 Cat No AUS232), AIHW, Canberra.

Australian Institute of Health and Welfare (2021*a*) 'Cancer in Australia 2021.' (AIHW). Available at https://www.aihw.gov.au/reports/cancer/cancer-in-australia-2021/summary

Australian Institute of Health and Welfare (2021*b*) 'Cancer screening.' (AIHW). Available at https://www.aihw.gov.au/reports/australias-health/cancer-screening-and-treatment

Australian Institute of Health and Welfare (2021*c*) Disparities in potentially preventable hospitalisations across Australia, 2012–13 to 2017–18. Available at https://www.aihw.gov.au/reports/primary-health-care/disparities-in-potentially-preventable-hospitalisations-australia/summary

Bardoel EA, Russell G, Advocat J, Mayson S, Kay M (2020) Turnover among Australian general practitioners: a longitudinal gender analysis. *Human Resources for Health* **18**(1), 99. doi:10.1186/s12960-020-00525-4

Booth M, Hill G, Moore MJ, Dalla D, Moore MG, Messenger A (2016) The new Australian Primary Health Networks: how will they integrate public health and primary care. *Public Health Research and Practice* **26**(1), e2611603. doi:10.17061/phrp2611603

Bradbury J, Nancarrow S, Avila C, Pit S, Potts R, Doran F, Freed GL (2017) Actual availability of appointments at general practices in regional New South Wales, Australia. *Australian Family Physician* **46**(5), 321–325.

Brett TD, Arnold-Reed DE, Hince DA, Wood IK, Moorhead RG (2009) Retirement intentions of general practitioners aged 45–65 years. *Medical Journal of Australia* **191**(2), 75–77. doi:10.5694/j.1326-5377.2009.tb02696.x

Callander E, Bates N, Lindsay D, Larkins S, Preston R, Topp SM, Cunningham J, Garvey G (2019*a*) The patient co-payment and opportunity costs of accessing healthcare for Indigenous Australians with cancer: a whole of population data linkage study. *Asia-Pacific Journal of Clinical Oncology* **15**(6), 309–315. doi:10.1111/ajco.13180

Callander E, Bates N, Lindsay D, Larkins S, Topp SM, Cunningham J, Sabesan S, Garvey G (2019*b*) Long-term out of pocket expenditure of people with cancer: comparing health service cost and use for indigenous and non-indigenous people with cancer in Australia. *International Journal for Equity in Health* **18**(1), 32. doi:10.1186/s12939-019-0931-4

Dubé T, Schinke R, Strasser R (2019) It takes a community to train a future physician: social support experienced by medical students during a community-engaged longitudinal integrated clerkship. *Canadian Medical Education Journal* **10**(3), e5–e16. doi:10.36834/cmej.43460

Duckett S, Breadon P, Farmer J (2014) Out of Pocket costs: Hitting the most vulnerable hardest. Grattan Institute.

Furler JS, Harris E, Chondros P, Powell Davies PG, Harris MF, Young DY (2002) The inverse care law revisited: impact of disadvantaged location on accessing longer GP consultation times. *Medical Journal of Australia* **177**(2), 80–83. doi:10.5694/j.1326-5377.2002.tb04673.x

Hart JT (1971) The inverse care law. *The Lancet* **297**(7696), 405–412. doi:10.1016/S0140-6736(71)92410-X

Hart JT (2010) The political economy of health care: Where the NHS came from and where it could lead. Policy Press.

Jacobs B, Ir P, Bigdeli M, Annear PL, Van Damme W (2012) Addressing access barriers to health services: an analytical framework for selecting appropriate interventions in low-income Asian countries. *Health Policy and Planning* **27**(4), 288–300. doi:10.1093/heapol/czr038

Jayasinghe UW, Harris MF, Parker SM, Litt J, van Driel M, Mazza D, Del Mar C, Lloyd J, Smith J, Zwar N, Taylor R, Preventive Evidence into Practice (PEP) Partnership Group (2016) The impact of health literacy and life style risk factors on health-related quality of life of Australian patients. *Health and Quality of Life Outcomes* **14**(1), 68. doi:10.1186/s12955-016-0471-1

Levesque J-F, Harris MF, Russell G (2013) Patient-centred access to health care: conceptualising access at the interface of health systems and populations. *International Journal for Equity in Health* **12**(1), 18. doi:10.1186/1475-9276-12-18.

Mooney GH (1992) 'Economics, medicine and health care.' (Harvester Wheatsheaf)

RACGP (2022) General Practice: Health of the Nation 2022. RACGP.

Roland M, Rosen R (2011) English NHS embarks on controversial and risky market-style reforms in health care. *New England Journal of Medicine* **364**(14), 1360–1366.

Strasser R, Strasser S (2020) Reimagining primary health care workforce in rural and underserved settings. Available at https://hdl.handle.net/10289/14072

Turrell G, Oldenburg BF, Harris E, Jolley D (2004) Social inequality: utilisation of general practitioner services by socio-economic disadvantage and geographic remoteness. *Australian and New Zealand Journal of Public Health* **28**(2), 152–158. doi:10.1111/j.1467-842X.2004.tb00929.x

Wilkinson RG, Marmot M, World Health Organization (1998) The solid facts: social determinants of health. WHO Regional Office for Europe: Copenhagen. Available at https://apps.who.int/iris/handle/10665/108082

Wong CY, Greene J, Dolja-Gore X, van Gool K (2017) The rise and fall in out-of-pocket costs in Australia: an analysis of the strengthening medicare reforms. *Health Economics* **26**(8), 962–979. doi:10.1002/hec.3376

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