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Submission to the state planning process for Hunter City.

Public Health Academics

University of Newcastle

School of Medicine and Public Health

Feb 2016,

Introduction

As a group of public health academics conducting research and teaching at the University of Newcastle we are interested in the contribution of town planning and urban design to the current and future health of the Newcastle population. We note that when health gets a mention in the Draft Plan for Growing Hunter City it is generally about health services, or healthy natural environments, but hardly ever about the profound effect that the built urban environment can have on the fundamental determinants of health. This ignores the history of town planning that had health concerns at its core when the first planners in the 19th century separated residential from industrial areas, and initiated the grand schemes for water supply, sanitation and building codes that have led to profound health improvements and the decline of infectious diseases. We now face a different set of challenges with cardiovascular disease, diabetes and cancers but there is still an important role for town planning and a growing research base to inform how future cities can be designed to create a healthy population.

Attempts from within the health sector to prevent the chronic diseases due to a sedentary existence have met with only limited success. Obesity and diabetes have increased markedly, and while heart disease has declined due to the reductions in smoking this trend may be reversed as the obese generations move into older age. Extended periods of time spent sitting at work, at play and during travel is becoming a threat to health. The best efforts of doctors, dieticians and exercise physiologists to change diet and exercise patterns have only small impacts that frequently do not last. The recent public health media campaign to ''make healthy normal'' is on the right track, aiming to shift personal and cultural norms towards food and activity choices that will maintain health over the long term. On the physical activity side of the equation there is a powerful role that town planning and urban design can play in assisting or inhibiting the efforts to make adequate activity a normal part of everyday life. The research literature shows that this occurs through three main pathways: mixed use urban design that reduces sprawl and reduces the need to travel long distances, provision of cycling and walking facilities to boost active transport, and maintaining access to greenspace.

Recommendations

1. New residential growth areas should be located close to the nine identified strategic centres, and not allowed to spread across distant areas that require long travel times.
2. There should be a target to reduce vkt/p (vehicle kilometres travelled per person) progressively over time, with the intention of using modern urban design principles to assist people to access their important locations such as work, school and shops within a reduced travel distance. This should be reported against each two years.
3. Rapidly construct a cycling network at a high standard of safety, so that cycling becomes a safe transport option for adult and child urban trips up to 10 Km distance. The initial target should be a cycling mode share of 5% for adults and 20% for school children, with a regular reporting mechanism assessing progress against this target.
4. Urban planning should specifically include provision of several levels of affordable housing, to reduce the burden of homelessness.

5. Urgent steps should be taken to reduce existing urban areas exposure to particulate air pollution, ensuring these areas are safe locations for increasing population. Measures such as introducing strict emissions standards for ships and locomotives that are currently unregulated, covering coal wagons and washing them after unloading, and covering coal stockpiles are all technically feasible and are standard practice in developed countries around the world.
6. Diversity of employment away from the coal industry is an urgent priority and should be at the core of regional planning, to avoid the unemployment harm of chaotic collapse and the burden of stranded assets.

Commuting time and health.

The amount of time adults spend sitting down is associated with obesity, markers of poor metabolic health such as reduced insulin sensitivity, and increased cardiovascular risk.(1) These associations are significant even after adjustment for leisure time physical activity, so playing sport on the weekend or going for an evening walk does not fully remove the adverse impact of an eight hour day sitting at work. Long commute distances come on top of other sitting time through the day. Research conducted over the last decade has documented a pernicious effect of commuting travel time on obesity and other health markers. The effect of commuting on health has been shown to be true for adults in multiple locations including Atlanta USA(2), and Sydney(3). In Texas adults commuting 25 to 32 Km had 52% increased chance of obesity and 33% reduced chance of meeting the standard for cardio-respiratory fitness compared to those commuting 0-8 Km after adjustment for confounders(4). Similar results have been shown for children in a range of locations. These associations persist after adjustment for socioeconomic status so it is not just that poorer people have to drive further to reach residences they can afford. Whether the outcome is BMI, Fat mass, or cardiorespiratory fitness there is an adverse association with increased commuting time among drivers. The NSW household travel survey 2010 shows average trip to work time in the Hunter of 25 minutes, which is better than the 34 minutes for Sydney. Pushing it lower would still yield benefits. This is a compelling reason for regional planning to adopt a goal to reduce commuting distances, and to monitor vehicle Kilometres per person per year with the target to bring this lower over time. While the health outcomes justify this objective, there would be economic and environmental co-benefits. In practical terms this means locating the 60,000 new dwellings within 3 km of the nine strategic centres (Broadmeadow, Maitland, Charlestown, Glendale, Metford, JHH, Newcastle, Raymond Terrace, & the University) mentioned at Direction 1.1, rather than expanding Medowie or Lochinvar.

Active travel

Weekly gross energy expenditure of 4Mj is recommended to reduce all cause and cardiovascular mortality. This can be achieved by walking 1.9Km in 22 minutes twice a day, or cycling at 16Km/hr for 11 minutes twice a day, for 5 days a week. Cohort studies in European cities have documented a 28% reduction in all cause mortality in adult commuter cyclists compared to non cyclists over 20 years follow up, even after adjusting for confounders including leisure time physical activity.(5) This can be interpreted that while all exercise is good exercise, people's sports and leisure activity will

wax and wane but their commuting behaviour is likely to continue for decades. A 28% reduction in all cause mortality is better than any medical treatment ever devised.

The travel patterns of school children are of particular interest given the rising trend of childhood obesity.

Active travel as documented in the NSW Household Travel Survey 2012 currently comprises mode share of 11.9% for walking and 1.6% for cycling. across Newcastle, so it is not making a substantial contribution to community health. This can change however when the environmental conditions are right. Wickham is well served by a safe off road cycleway, and at the 2011 census showed a mode share for trips to work of 5.5% for cycling. The neighbourhood environmental factors associated with adoption of cycling have been studied in people moving to new residential suburbs of Perth, WA. The RESIDE study examined transport activity in 1427 people before and after relocation, and showed that of the 1289 non cyclists 5% started riding for transport. Uptake of transport cycling was associated with increased residential density, and the number of recreational destinations within a 1.6 Km network buffer(6). Substantial mode shift to cycling is possible over time, but safety is the paramount barrier and improvement to safety by provision of separated road space is a precondition. Respondents to the Newcastle City Council's Newcastle Voice survey show that 67% of non cyclists would like to ride more but are held back by not feeling safe on the road.

The travel habits of school children are especially important. Children who cycle to school have been shown to have better cardiovascular risk markers(7, 8), and childhood travel behaviours track through to adulthood (9) so measures to get children cycling to school will have health dividends far into the future. In 2002 Merom studied families with children aged 5 to 12 by telephone interview of a random NSW sample(10). She showed that only 22% of children used active transport for all 10 school trips per week, and 37% of children made at least 5 active trips per week. Active transport was associated with shorter trip distance, older age, male sex, and parental active transport to work. It was inhibited by perception of an unsafe road environment. That the active travel of children was associated with active travel by parents is important, as an adult who has accompanied children to school on foot or bicycle is much more likely to proceed to their work the same way. While the design of school networks and broader suburban cycling networks are different, this finding supports tackling child and adult cycling needs simultaneously to exploit available synergies.

In 2014 community members launched an ambitious plan known as the CycleSafe Network to build cycleways linking all areas of Newcastle and the northern part of Lake Macquarie LGAs(11). This plan incorporates understanding of the international literature on building successful cycling infrastructure that optimises community uptake and subsequent health benefits. The design principles are

- Building continuous links at a uniform standard of safety, taking direct routes.
- A network from everywhere to everywhere, not just to specific cycling destinations. This allows people to adopt cycling as their normal mode of transport.
- Cycleways safe enough that primary school aged children can use them unaccompanied. As well as facilitating trips to school this level of safety is welcoming to novice adult riders.
- Legibility: Signage and intersection design that makes the network easy to follow.

Section 2.2.3 of the draft plan mentions walking and cycling but misses the opportunity to identify the important design work already done by community members on the CycleSafe Network, which would link six of the nine strategic centres. Building safe facilities for cycling is an ideal opportunity for government to assist the process of making healthy normal.

Greenspace

There is a substantial association between health and access to public open space or "green space" that has been documented in many locations around the world. The association is both with physical and mental health, and is not all mediated by physical activity. Having access to parks not only helps people be more active, but it helps them feel better psychologically. Importantly it has been shown in the UK that access to greenspace reduces the socioeconomic gradient in cardiovascular disease, so while being poor is bad for heart health, being poor in an area with good parkland is less of a burden(12). This effect was not all due to better air, as it remained statistically significant after adjusting for air quality.

Australian research backs up these findings. In Adelaide people who perceived their neighbourhood as highly green had 1.37 times higher odds of good physical health, and 1.60 times the odds of better mental health, after adjustment for sociodemographic variables(13). In Perth it was shown that although proximate parks encouraged use generally, having good access to larger public open space is associated with higher levels of walking, and this was enhanced by parks that had attractive features such as trees, water areas and birdlife(14).

The Hunter city plan notes that (direction 1.4) the majority of Hunter residents live within 800m of greenspace. This makes an important contribution to health, and if the evidence from the UK applies here, greenspace availability may assist in reducing the socioeconomic gradient in health that is so resistant to efforts of the healthcare system. As well as proximity, the quality of urban greenspace enhances its use. It is therefore alarming to see that many of the regions State Forests are subject to mineral exploration licenses. Allowing coal or gas mining on these lands risks loss of these health advantages.

We note that the CycleSafe Network proposal is mentioned in the Hunter City plan, but believe it belongs in direction 1.3 to enhance city wide transport rather than with the parks and gardens section of the plan.

Employment and future industries

The existing draft plan has a glaring omission in that a plan for Newcastle and the Hunter is not complete without considering the unsustainable nature of the coal industry. Australia has committed to policies that limit global warming to less than 2 degrees, and this implies leaving 80% of known fossil carbon reserves in the ground. Even warming of two degrees will have widespread adverse health consequences through heat waves, droughts, food insecurity and severe weather events.

Stable employment makes a significant contribution to health, and the current susceptibility of the local economy to the coal industry makes Newcastle and the Hunter vulnerable to market shocks such as the collapse of coal prices. The region has the opportunity to plan for transition out of the coal industry, just as Newcastle transitioned successfully away from steel making in the 1990s. An

orderly transition is much better than a chaotic collapse, and the development of a regional plan is the ideal process to get this started. Rather than building ever more facilities to accelerate coal exports the plan should be focussed on industries that will continue after coal is finished.

Air Quality

Newcastle's air quality has been of concern to residents who live near the coal transport corridor, and this is confirmed by EPA monitoring showing that fine particulate levels have been higher than the Australian standards in many recent years. The monitor at Wallsend, away from coal operations, shows consistently cleaner air. Since exposure to particulate air pollution contributes to the burden of cardiovascular and respiratory diseases it makes sense to use the opportunity of large scale urban planning to ensure a reduction in pollution exposure. While a first response to this issue might be to locate new residential areas well away from the coal corridor, this would produce an undesirable degree of urban sprawl requiring long travel distances which as we have argued is a poor outcome.

When considering possible locations for future residential growth, proximity to the existing rail lines has the benefit of allowing fast and efficient public transport, so just as has been done in Sydney the rail lines should be the focus of new higher density residential areas. To avoid increasing population exposure to harmful air pollution it is technically feasible to clean up the current dirty industries. This is already required to reduce harm to existing suburbs. Measures such as introducing strict emissions standards for ships and locomotives that are currently unregulated, covering coal wagons and washing them after unloading, and covering coal stockpiles are all technically feasible and are standard practice in developed countries around the world.

While urban design decisions shape the landscape for 50 or 100 years, the coal industry is going to have to be wound up in the next 20 or 30 years due to carbon constraints, so in the big picture it is a temporary problem.

Housing for health

Homelessness is a severe risk to health and urban design can assist or hinder housing stability for those at risk of homelessness. Age adjusted mortality for homeless men has been measured at 2 to 8 times higher than the general population(15). The causation runs both ways; some homelessness is caused by health problems, but being homeless makes the health problems more severe and more difficult to manage. Ensuring that there is a supply of affordable housing should be a goal of urban design. Characteristics of affordable housing are that it is small, cheap to run, and located where it is not necessary to own a car. It can still be well designed and provide people the dignity of a fixed address and a safe place to live. Research by the Samaritans in 2013 showed a severe lack of affordable rental housing in Newcastle, with only 32 of 516 rental properties being affordable to someone on the minimum wage (17). There was none at all that were affordable for a couple with two children trying to live on Newstart income support.

The community savings of expense by the health and justice systems by addressing homelessness can be considerable. A study in 2012 by Prof Baldry of UNSW showed life course institutional costs per person of between $900,000 and $5.5 million for a group of homeless people with mental health or cognitive disability diagnoses who had been in contact with the criminal justice system(16). While

such people obviously have multiple problems, stable housing would make the other problems easier to manage.

References

1. Owen N, Healey G, Howard B, Dunstan D. Too much sitting: Health risks from sedentary behaviour and opportunities for change. Presidents council on fitness, sport and nutrition, 2012.
2. Frank L, Andresen M, Schmid T. Obesity realtionships with community design, physical activity, and time spent in cars. Am J Prev Med 2004;27(2):87–96). 2004;27(2):87-96.
3. Garden F, Jalaludin BB. Impact of urban sprawl on overweight, obesity and physical activity in Sydney, Australia. Journal of urban health: Bulletin of the Ney York Academy of Medicine. 2008;86(1):19.
4. Hoehner C, Barlow C, Allen P, Schootman M. Commuting Distance, Cardiorespiratory Fitness, and Metabolic Risk. American Journal of Preventive Medicine. 2012;42(6):571-78.
5. Andersen L, Schnohr P, Schroll M, Hein H. All-cause mortality associated with physical activity during leisure time, work, sports, and cycling to work. . Arch Int Medicine. 2000;160:1621-28.
6. Beenackers M, Foster S, Giles-Corti B. Taking up cycling after residential relocation. Built environment factors. Am J Prev Med 2012;42(6):610-15.
7. Andersen L, Wedderkopp N, Kristensen P, Cooper A. Cycling to school and cardiovascular risk factors: a longitudinal study. Journal of physical activity and health. 2011;8:1025-33.
8. Voss C, Sandercock G. Aerobic fitness and mode of travel to school in English schoolchildren. Medicine and Science in Sport and Exercise. 2010;42(2):281-7.
9. Yang X, Telama R, Hirvensalo M, Tammelin T, Viikari JSA, Raitakari OT. Active commuting from youth to adulthood and as a predictor of physical activity in early midlife: The Young Finns Study. Preventive Medicine. 2014;59(0):5-11.
10. Merom D, Tudor-Locke C, Bauman A, Rissell C. Active commuting to school among NSW primary school children: implications for public health. Health & Place. 2006;12(4):678-87.
11. committee CNo. CycleSafe Network Proposal for Newcastle Newcastle NSW2014 [1-2-16]. Available from: http://csn.org.au/.
12. Mitchell R, Popham F. Effect of exposure to natural environment on health inequalities: an observational population study. Lancet. 2008;372:1655-60.
13. Sugiyama T, Leslie E, Giles-Corti B, Owen N. Associations of neighbourhood greenness with physical and mental health: do walking, social coherence and social interaction explain the relationships? J Epidemiol Community Health. 2008;62(e9):1-6.
14. Giles-Corti B, Broomhall M, Knuiman M. Increasing walking: How important is distance to, size, and attractiveness of public open space? Am J Prev Med. 2005;28(2s2):169-76.
15. Turnbull J, Muckle W, Masters C. Poverty and human development: Homelessness and health CMAJ. 2007;177:1065-66.
16. Baldry E, Dowse L, McCausland R, Clarence M. Lifecourse institutional costs of homelessness for vulnerable groups. Sydney NSW: University of NSW, 2012.
17. http://www.samaritans.org.au/cms/wp-content/uploads/2013/05/Media_Rental-Affordability-Snapshot2013.pdf