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Learning Objectives

Readers of this chapter will:

- Develop a brief understanding of population and public health.
- Consider why it is important for medical managers to have an understanding of the field of public health.
- Appreciate that a medical manager's work may require consideration of its public health impact.
- Recognise a range of traditional and more recent public health initiatives in Australia, including targeting of communicable diseases, as well as tobacco, alcohol and drugs.
- Gain an understanding of particular population health issues, including chronic disease health management, regional and rural health, and Indigenous health.

in acute care brings diminishing returns and is simply not sustainable, and an increased focus on upstream interventions is required to keep the population healthier. It is also due to recognition that problems in the last century tackled by public health actions have provided ongoing benefits.

The most recently published *Public health expenditure in Australia* report from the Australian Institute of Health and Welfare in 2011 suggested that Australia spends 2.1% of the total health expenditure on public health [1]. Questions will arise as to whether this is sufficient in the longer term.

The role of public health is to contribute to the health of the public through assessment of health and health needs, policy formulation, and assurance of the availability of services. Public health practitioners are constantly required to relearn old ways of tackling newer patterns of diseases, in order to face traditional and newer challenges that threaten the public's health.

While they are not trained as public health physicians in the strictest sense, medical managers will often find that their work overlaps with public health practitioners. Medical managers make their largest contributions through the development of health systems, which include personal health care, public health services, and other inter-sectoral initiatives. It is important that medical managers take a balanced approach in developing a health system, which contributes to a fair and healthy society.

10.1 Introduction

There has been a renewal of interest in public health since the turn of the century, in disease prevention, communicable diseases, health protection and health promotions. This is partly due to the realisation that continued investment

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A broad range of skills is required to practice successfully as a medical manager who is involved in public and population health. In the same way as performing a root cause analysis, the process starts off with understanding and analysing the actual issues, questions and challenges, before too much effort is spent on solving the wrong problem. There are often conflicting priorities for improving the health of populations, and it is ever more important that solutions are not only viable, but cost effective too.

In the end, decisions always need to be made, and these are usually difficult, but important, choices. By using evidence and quality data, decisions may eventually become more apparent. The subsequent implementation of any policies that arise from these decisions will require other interpersonal and organisational skills such as influencing, communicating and collaborating, which are key skills of a competent medical manager.

It is impossible to describe all facets of public health in one textbook, let alone a chapter. This chapter then seeks to identify the challenges a medical manager would commonly come across in his or her daily practice, and aims to be a reminder that it is important to consider what is happening beyond the four walls of one's immediate organisation; that to be a good health service manager, one often needs to be a competent population health manager.

10.2 Definition of Public Health

A widely adopted definition is that Public Health “*is the science and art of preventing disease, prolonging life, and promoting health through the organized efforts of society*” [2].

Roger Detels in 2003 defined the goals of public health as: *The biologic, physical, and mental well-being of all members of society regardless of gender, wealth, ethnicity, sexual orientation, country, or political views* [3].

This is very similar to the World Health Organization's definition of Health as: “*a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity*” [4].

What is immediately obvious is that public health involves achieving health goals from not just an individual but also the collective efforts of society, and this is more than merely the elimination of disease.

Conceptually, public health can take a population health approach, in order to identify, measure and monitor community health needs through surveillance of disease and risk factors. In other words, it is concerned with threats to the overall health of a community based on population analysis. Public health interventions are then aimed at prevention of diseases, or improving the overall health of society.

10.3 Definition of Population Health

In the last decade or so, there has been significant debate about the definition of Population Health. Population health has been variously defined, including “the study of health and disease in a population as specified by geographical, cultural or political guidelines [5]”, or “the health outcomes of a group of individuals, *including the distribution of such outcomes within the group* [6]” (*concept of health, informed by the study of its determinants and including subsequent interventions*). While it is difficult to determine which is normatively right or wrong, in this chapter, the latter definition is used.

Examples of populations include regional and rural populations, sufferers of chronic disease, Indigenous populations, or refugees.

10.4 Demographics

To understand public health and population health, it is important to understand some key demographics in Australia. These demographics provide the basis for identifying health issues, developing health policies, as well as providing an insight into limitations of interventions.

Australia is a country with a population of approximately 25 million. The land size of the country is large however, and at 7.7 million

square kilometres of land, it represents about 5% of the world’s total land area. Australia is subsequently one of the least densely populated countries on Earth.

With 89% of the population living in urban areas, Australia is one of the most urbanised countries. Most of the population is congregated in the eastern coastal capital cities, with the exception of Perth on the west coast. Migration policies are such that there has been a net influx of migrants, with the most significant reported countries of birth being the United Kingdom, New Zealand, China and India according to the Australian Bureau of Statistics [7] (ABS).

Australia has an Indigenous population of over 500,000, located mainly in regional and rural areas of New South Wales, Queensland, and the Northern Territory. While the Northern Territory has an Indigenous population of approximately 70,000, this represents about 30% of its total population. This Indigenous population unfortunately suffers from significantly poorer health outcomes, and will be covered later in the chapter.

10.4.1 Ageing Population

According to the Australian Institute of Health and Welfare (AIHW), average life expectancy of Australians at birth in 2012 is 82.1 years, with boys born in 2011–2013 being 80.1 years, and 84.3 years for girls [8]. This puts Australia’s life expectancy at one of the highest levels in the world, which also has health policy and management implications as the population ages (Fig. 10.1).

10.4.2 Population Structure

The structure of Australia’s population has changed significantly over the past few decades, and will continue to do so over the next 40 years. The relative portion of population aged 65 and over is growing, indicating a decrease in the proportion that signifies the traditional working age, between 15 and 64 years.

Previous depictions of the population pyramid with the younger population forming a large

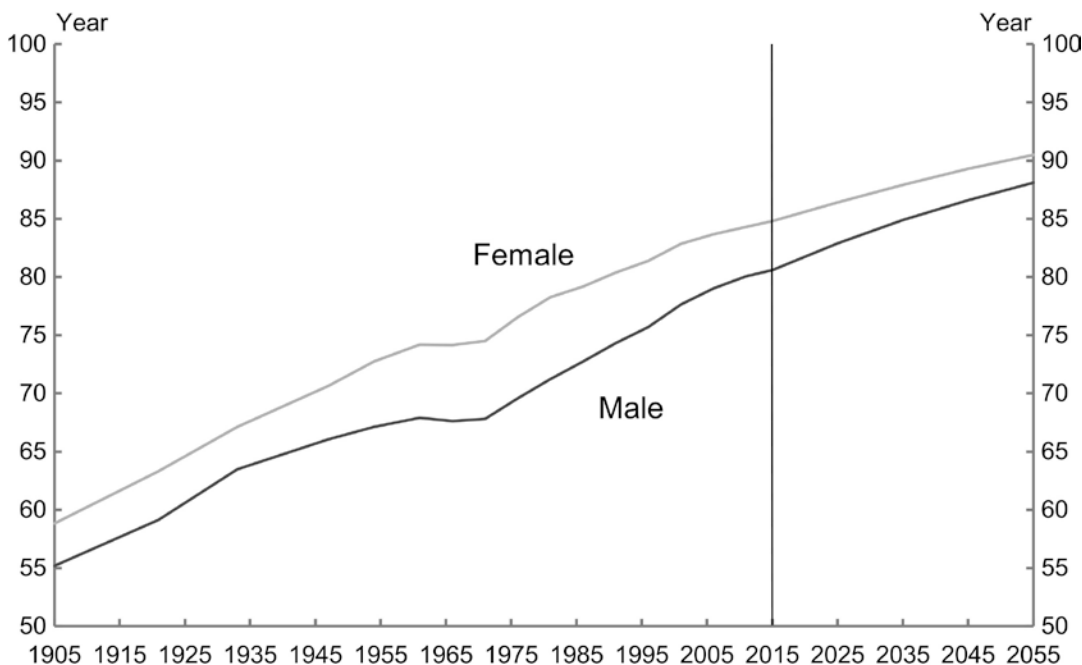


Fig. 10.1 Male and female life expectancy, 1905 to 2055. (From 2015 Intergenerational Report, Australia in 2055, The Commonwealth of Australia, with permission)

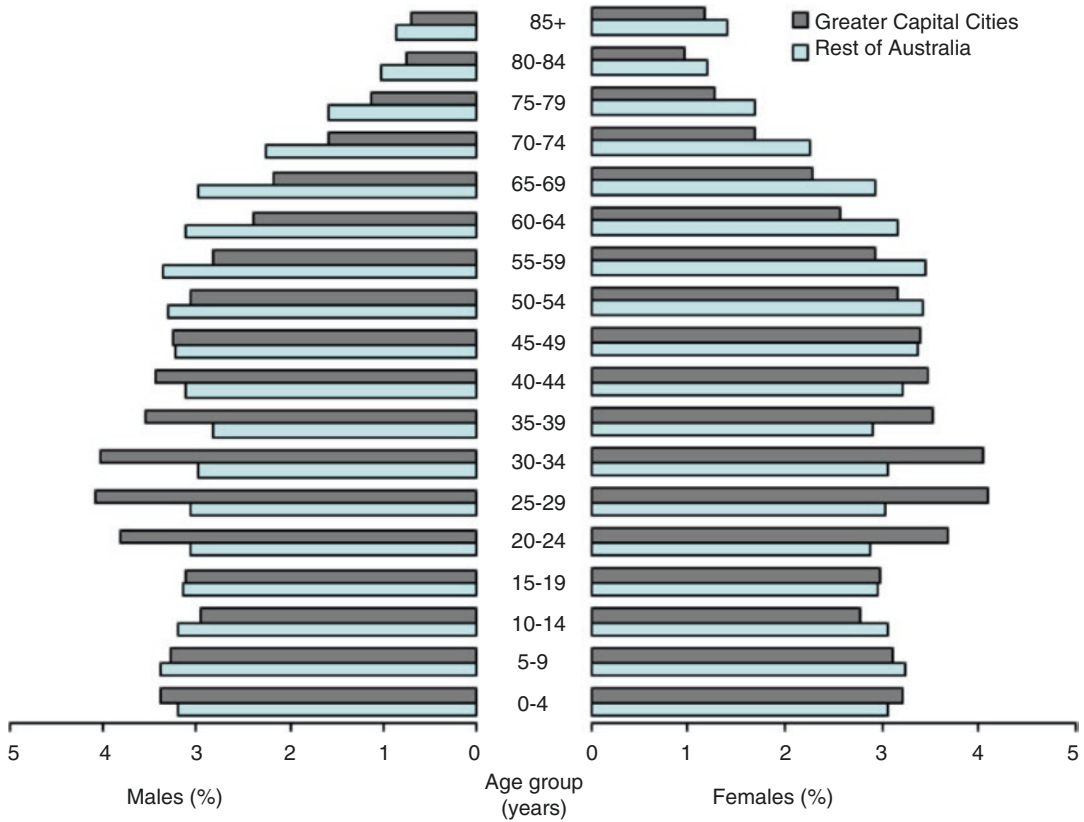


Fig. 10.2 Age and sex distribution (%), Greater capital cities and rest of Australia—30 June 2016. (From Cat 3235.0 - Population by Age and Sex, Regions of Australia,

2016, from the Australian Bureau of Statistics, <http://www.abs.gov.au/> with permission)

base and narrowing towards the top, representing the elderly, are thus changing, with the structure looking more cylindrical than before (Fig. 10.2).

This is significant for the health workforce, as it means that there will likely be a growing demand from diseases of the elderly, with relatively less workforce to support it.

10.4.3 Socio-economic Disadvantage

The social gradient of health is a phenomenon that suggests that in general, the higher the person’s income and education, the healthier they are. Daily smoking rates are a clear example, as the higher the socio-economic status (SES) group, the less likely it is for the person to be a daily smoker. In the lowest SES group, the rate in 2011–2012 was 23% as compared with 10% in the highest.

Difference in harmful levels of alcohol consumption is also evident, with 22% in the lowest SES groups compared to 17% in high SES groups. Other examples include sufficient physical activity (34–52%), women and children overweight and obesity (64% and 48%, respectively, for women, 33% and 19% for children) [9].

There are other health measures and risk factors with known social gradients, which include life expectancy, self-assessed health status, oral health, end-stage kidney disease, and mortality and 5-year relative survival from all cancers.

10.5 Why Is Public Health Important for Medical Managers?

Infrastructure for public health is provided by state and local government departments and

agencies and is closely aligned to housing and environments policy and services also provided by government.

Public health provision is also supported by other agencies such as health service providers and academic health science institutions, where medical managers are often employed. Having an understanding of the overall picture and issues across these sectors is important to provide context to the management of the individual person or individual organisation.

One might ask why are the housing and environmental sectors involved in health care? This is because the concept of health is much more far-reaching than the usual health services that medical managers are accustomed to.

It is not difficult to conceptualise that clean water, good sanitation, education or even employment contribute to better health for an individual. These are the social determinants of health, and it is important to understand that public health is intricately linked to them.

The scenario below is an example of social factors affecting the daily management of a health service.

A 42-year-old man with a mental health history is brought to the emergency department with suspected drug overdose and acute psychosis. He had recently been evicted from his home for repeated violent behaviour towards his neighbours and damaging the rented property. He has no known family and is unemployed.

You can imagine that while the doctors and nurses can potentially treat the patient back to pre-event health status, it is clear that the social issues such as his accommodation and social supports need to be considered early on in the admission, because they impact on the longer term outcomes for the patient. Otherwise one might come across the familiar situation where the patient is medically fit for discharge, but the care team, however, will flag post-discharge concerns that should have been addressed earlier in the treatment process.

Failing to identify these issues may potentially lead to suboptimal utilisation of acute beds while they are being addressed, or discharging a patient who is at high risk of being readmitted. A health service manager may need to consider working

closely with the housing sector in the situation above, to prevent downstream issues adversely impacting on the health service's operations.

10.6 Public Health

From a historically restrictive mandate of ensuring public sanitation, clean water and food supply, public health has evolved to include services for personal protection, such as immunisation or contraception, or health promotion (mainly health education such as physical activity or nutrition). Legislation and social policies have been influenced by public health interventions, and this is evidenced in areas such as tobacco legislation or the need for seatbelts.

It is thus noticeable the mandate of public health has expanded from providing the essential hygienic services, to disease prevention and personal protection, and now to a range of social engineering efforts. This clearly cannot be achieved by health service organisations alone, and requires the coordination of a range of different sectors.

Taking a trip down memory lane, it is easy to identify various public health interventions that have made significant impacts on populations over the years, and then discuss some of the recent efforts by governments.

The oldest form of public health would likely be the provision of clean water and sanitation. The development of the smallpox vaccine also holds an important place in public health history. By the mid-twentieth century, the automotive industry has gifted us with seatbelts, and by 1970, Victoria was the first place in the world that passed compulsory seat belt laws, lowering the incidence of injury or death for drivers and front seat passengers.

More recently, efforts in public health can be witnessed in the following areas, which have received significant media attention.

- Fluoridation of drinking water
- Child immunisations
- Anti-smoking legislation
- Encouraging physical activity and obesity prevention

Each area has received its fair share of publicity as different interest groups lobby for different outcomes. Any intervention, in particular legislative or policy changes, is usually perceived to negatively impact on certain groups, often industry.

To understand the challenges that public health interventions face, one only has to look at the significant amounts of resources tobacco companies invested in fighting the recent legislation in Australia requiring cigarettes to have plain packaging and unsightly health warnings on them [10].

As a medical manager you may be required to work with your colleagues to advocate for and champion important public and population health issues, possibly support the clinical case with an equally potent business or economic position.

10.6.1 Communicable Diseases

A medical manager is often confronted with challenges associated with communicable diseases. These range from routine in-hospital practices of infection prevention, to the involvement in planning and response to epidemic outbreaks at the health service level.

In the last two decades, prominent emerging infectious diseases that spring to mind are the outbreaks of the Severe Acute Respiratory Syndrome (SARS), Influenza A virus subtype H5N1 “avian influenza”, or the Influenza A virus subtype H1N1 “swine flu” pandemic.

These influenza outbreaks originating from Asia were highly contagious and claimed many lives, especially in the at-risk populations such as the elderly or pregnant women. Australia was not significantly affected by SARS and H5N1 as compared to the rest of the world; however, the swine flu pandemic in 2009 saw over 37,000 reported cases in Australia, claiming 191 lives. It was fortunate that comparatively the fatality rates in Australia were low.

More recently, the 2014 outbreak of Ebola Virus Disease (EVD) from West Africa also caused significant consternation, as the disease reported very high mortality rates of between

30% and 70% amongst those infected. The personal protective equipment required for health care workers was significantly more comprehensive than normally required, including full body suits.

In these situations, the medical manager often plays a significant leadership role in coordinating the responses within their health service, as well as being involved with emergency planning and preparation work such as training exercises. Working parties are convened with representation from relevant parts of the organisation, usually including infection control and infectious disease specialists, intensive care and emergency physicians, nursing, occupational health and safety staff, and potentially media and communication representatives.

Escalation procedures will need to be in place to support staff on the ground, with considerations for separate triaging and treatment areas including negative pressure rooms, vaccinations for staff, and dogged use of personal protective equipment. It is important to have good communication channels with the State Health Department to ensure appropriate notification, escalation and mobilisation of resources. It is also pertinent to have a clear media strategy with the community as well, in order to ensure that fear is managed and simple prevention messages communicated.

While not prevalent in Australia, another communicable infectious disease that has been on the watch-list recently include the Middle East Respiratory Syndrome Coronavirus, which has spread through to parts of Asia, with South Korea the most adversely affected.

10.6.2 Infection Prevention and Management

A simple way of preventing infections is through good hygiene practices, and in health services, the most effective and simple way is to have good hand hygiene practices. Policies, procedures and guidelines should be developed and in place to ensure staff are aware of what is expected of them, both for the protection of the patients and themselves.

With *Preventing and Controlling Healthcare Associated Infections* being one of the National Safety and Quality Health Service Standards (Standard 3), control measures applied in the hospital setting include establishing hospital infection control committees, providing isolation areas, use of personal protective equipment, regular cleaning and sterilising requirements, or restriction of activities, such as working while infectious. Hand hygiene compliance requirements are more in the spotlight, and medical managers should be leading the charge for it by mobilising support and driving the agenda.

Related is the all-important function of antimicrobial stewardship. Increasingly bacteria are developing resistance to antibiotics, and multi-resistant organisms such as Methicillin-resistant *Staphylococcus aureus* (MRSA), Vancomycin-Resistant Enterococci (VRE), or the deadly Carbapenem-resistant Enterobacteriaceae (CRE) are increasingly found in the community. While this has been attributed to overuse of antibiotics in the community, hospitals are often found lacking in adherence to antibiotic best practices. Leading health services are now actively tackling this issue with antimicrobial stewardship programmes.

Although such programmes are usually managed by infectious diseases teams, it is important that the medical manager provides visible support for this. Many doctors see the approval process of antibiotics as cumbersome, but compliance has been shown to be beneficial for the community in the longer term. Standard 3 makes mention of the need for an antimicrobial stewardship programme, and in a similar way to mandatory hand hygiene compliance key performance indicators, medical managers could use this argument to facilitate adherence to the antimicrobial stewardship programme within their health service.

Staff vaccinations are also an important way to prevent the spread of infections to health care workers and in between patients. The vaccination process not only provides an active immunisation benefit to the individual, it also creates passive herd immunity benefits to the community, which provides relative protection of the population group by reducing or breaking the chains of

transmission of an infectious agent because most of the population is resistant to the infection.

Often being in key leadership positions, medical managers play an important role in promoting the importance of immunisations.

10.6.3 One Health

The concept of One Health is worth noting, and that the movement to link physicians, veterinarians, and other scientific-health and environmentally related disciplines is gaining momentum. One Health is particularly important when we consider communicable diseases, as there are more connections between human health, animal health and the environment than was initially perceived.

Examples of these include transmission of zoonotic diseases from animal to human beings like EVD, or the indirect ingestion of antibiotics through animals that have been injected with antibiotics to increase growth and subsequent development of antibiotic resistance. With increasing globalisation, it is worth acknowledging that an environmental issue affecting livestock in Central and South America, Europe or Asia could affect Australians who have unwittingly consumed it.

10.6.4 Tobacco, Alcohol and Illicit Drugs

In medical school, students would have been taught the physiological harm that tobacco, alcohol and drugs cause to the individual, such as lung cancer, liver cirrhosis or brain damage. In fact, these substances can cause harm much further beyond the individual, as they often affect the relatives and friends around them, as well as causing a unique set of challenges for health care professionals.

For decades now, governments have spent significant efforts trying to reduce smoking rates. This has led to the rates of daily smokers in adults essentially halving between 1993 and 2013, from 26.1% to 13.3% [11].

Tobacco is not only hazardous to the smokers, but also to those around them through the inha-

lation of second hand smoke. Smoke-free environments are becoming increasingly popular and legislatively required, including restaurants, bars and all indoor areas. These policies are important from more than one perspective because they protect non-smokers to the exposure of tobacco smoke, reduce smoker's consumption of cigarettes, and even induce some smokers to quit [12].

Australia's low smoking rate is the result of sustained, concerted and comprehensive public policy efforts from all levels of government and action from public health organisations. Since 1973, when health warnings were first mandated on all cigarette packs, a combination of further restrictions and bans on advertising and smoking in restaurants and increases in taxes have been progressively introduced [13]. A look at the

Australian Department of Health's website will show that it has taken significant effort and time to achieve current rates (Table 10.1).

It is important that this effort is sustained, as each year smoking kills an estimated 15,000 Australians, and although over 75% of the cost of tobacco for the consumer is in taxes, the social and economic costs of \$31.5 billion for Australia outstrips tobacco sales of \$3.4 billion by ninefold.

There have been significant public health efforts in reducing the harm caused by alcohol, particularly associated with binge drinking, driving under its influence, and alcohol-related violence.

Alcohol as a public health issue is challenging, not least because drinking is largely seen as

Table 10.1 Tobacco Control Timeline

• 1973—Health warnings first mandated on all cigarette packs in Australia.
• 1976—Bans on all cigarette advertising on radio and television in Australia.
• 1986 to 2006—Phased in bans on smoking in workplaces and public places.
• 1990—Bans on advertising of tobacco products in newspapers and magazines published in Australia.
• 1992—Increase in the tobacco excise.
• 1993— <i>Tobacco Advertising Prohibition Act 1992</i> prohibited broadcasting and publication of tobacco advertisements.
• From 1994 to 2003—Bans on smoking in restaurants.
• 1995—Nationally consistent text-only health warnings required.
• 1998 to 2006—Bans on point-of-sale tobacco advertising across Australia.
• 2006—Graphic health warnings required on packaging of most tobacco products.
• 2010—25% increase in the tobacco excise.
• 2011—First complete state or territory ban on point-of-sale tobacco product displays.
• 2012—Offence for any person to publish tobacco advertising on the internet or other electronic media.
• 2012—Introduction of tobacco plain packaging, and updated and expanded graphic health warnings
• 2012—Reduction in the duty free allowance from 250 cigarettes or 250 g of cigars or tobacco products to 50 cigarettes or 50 g of cigars or tobacco products from 1 September 2012.
• 2013—First 12.5% tobacco excise increase on 1 December.
• 2014—Change from bi-annual indexation based on the Consumer Price Index (CPI) to bi-annual indexation based on average weekly ordinary time earnings (AWOTE).
• 2014—12.5% excise increase on 1 September.
• 2015—12.5% excise increase on 1 September.
• 2016—Release of the Post Implementation Review of Tobacco Plain Packaging.
• 2016—12.5% excise increase will be implemented on 1 September.
• 2017—Additional four annual 12.5% tobacco excise increases implemented on 1 September each year from 2017 to 2020 inclusive.
• 2017—Reduction in duty free tobacco allowance, 25 g of duty free tobacco (cigarette, loose leaf, etc.), plus one open packet; equivalent to approximately 25 cigarettes.
• 2017—Harmonisation of the taxation of roll-your-own tobacco and other products such as cigars, with manufactured cigarettes.

From Australian Government Department of Health, with permission; <http://www.health.gov.au/internet/publications/publishing.nsf/Content/tobacco-control-toc~timeline>

a social activity, and the rates of alcohol-related problems tend to rise and fall with changes in the level of consumption of the population. Thus controls on the availability of alcohol, including taxes, affect the level of consumption and subsequently rates of alcohol-related problems [14].

The development of the National Alcohol Strategy 2016–2021 is being undertaken currently, and it is common to see police conducting random breath testing weekends and public holidays in all States and Territories. Advertising campaigns aimed at both educating the general public and highlighting policing efforts are common. Recently alcohol-related violence has also received significant media attention, as there have been a number of high-profile deaths caused by unprovoked single acts of violence.

At the same time, sporting clubs are encouraged to promote a culture of safe drinking, and to reduce their affiliations with alcoholic beverage sponsors in an effort to change behaviour and attitudes around alcohol consumption [15].

Most would have read of the recent challenges posed by crystalloid methamphetamines, colloquially termed by the media as the “ice epidemic”. While the total rate of methamphetamine use has remained steady recently, the use of its crystalloid form, known as ice, has developed into a significant health issue. Users of the drug are prone to experiencing hallucinations and can be particularly agitated and violent.

Communities in regional Australia are twice as likely to use methamphetamine than those in major cities, along with smoking daily and drinking excessively [11].

This is particularly challenging for health care professionals in emergency departments who treat them following an overdose, as they not only have to treat the physiological sequelae but also the violence and aggression that often accompany them. Within 3 years from 2010, ice has grown to be the illicit drug thought to be of most concern for the general community, and in 2013 became the second highest cause of death from illicit drugs [11]. However, it still lags behind heroin as the single largest cause of illicit drug deaths.

The significant problems associated with the use of ice is not an issue that law enforcement agencies can police or arrest its way out of. It requires a coordinated effort from multiple sectors including health care, education, as well as law enforcement, in order to be able to stem its growing abuse and harm.

10.7 Occupational Health

Occupational health deals with the interaction between health and work. It encompasses:

- The prevention of occupationally related illness or injury resulting from exposure to workplace hazards
- Ensuring workers with pre-existing illnesses or disability are able to continue working without undue risk to their health or third parties
- Promoting general health and safe working practices in the workplace

When one considers the total proportion of people who go to work, it is clear that even a small percentage of this large number can be an important public health consideration, and maintenance of their health is important to the well-being of their colleagues, family, employer and consumers.

The medical manager’s approach should include identifying hazards in the work setting, determining at-risk populations and assessing the risks associated with exposure to the risk, and then taking appropriate preventive actions such as elimination, substitution or containment of the hazard, and limiting exposure. It is also important to periodically evaluate the effectiveness of the preventive measures.

Promoting general health in the workplace include advice and information on alcohol intake, smoking, diet, physical activity or safe driving. Health promotion activities in the workplace can include measures such as serving healthy food products in cafeterias, having a no-smoking policy, or providing subsidies to join sports and exercise facilities.

10.8 Chronic Diseases

Chronic diseases have become the most common cause of death in high-income countries such as Australia, overtaking communicable diseases, which are still the leading causes of death in low-income countries [16]. Indeed, 68% of global deaths were caused by non-communicable diseases (NCD) in 2012, an increase from 60% in 2000. Communicable, maternal, neonatal, and nutritional conditions accounted for 23%, while injuries caused 9% of all deaths. In high-income countries, the proportion of deaths caused by NCD is even higher at 87%, as compared to 37% in low-income countries.

In Australia, eight out of the nine National Health Priority Areas, which are diseases and conditions that Australian governments have chosen for focused attention, are chronic in nature. These include:

1. Cancer control
2. Cardiovascular health
3. Mental health
4. Diabetes mellitus
5. Asthma
6. Arthritis and musculoskeletal conditions
7. Obesity
8. Dementia

The other priority area is injury prevention and control.

Chronic diseases impose an increasing burden to health care systems, and health services have needed to focus on the management of patients who suffer from chronic diseases through intense care coordination programmes such as the Hospital Admission Risk Program in Victoria. Important components of chronic disease management programmes are the proactive upstream care that improves quality of life, as well as reducing the risk of the patient's condition deteriorating to the extent where they require an acute admission.

There are many variations of how this is provided to the patient, and innovative health services have incorporated approaches such as using mobile technology, graded escalation protocols, and inten-

sive self-care education into their programmes. Because the aim is to keep the patient well in the community, often the patients' GPs play highly important roles in managing their conditions.

A well-designed and executed chronic disease management programme achieves the following outcomes:

1. A net financial benefit to the health care system through fewer acute admissions
2. Improvement in the patient's quality of life
3. Better management of disease markers
4. Co-decision, improved buy-in and adherence to agreed therapies

Chronic disease management requires a population management approach [17]. The segmentation of population groups by many health systems are variations of the Kaiser Pyramid (Fig. 10.3).

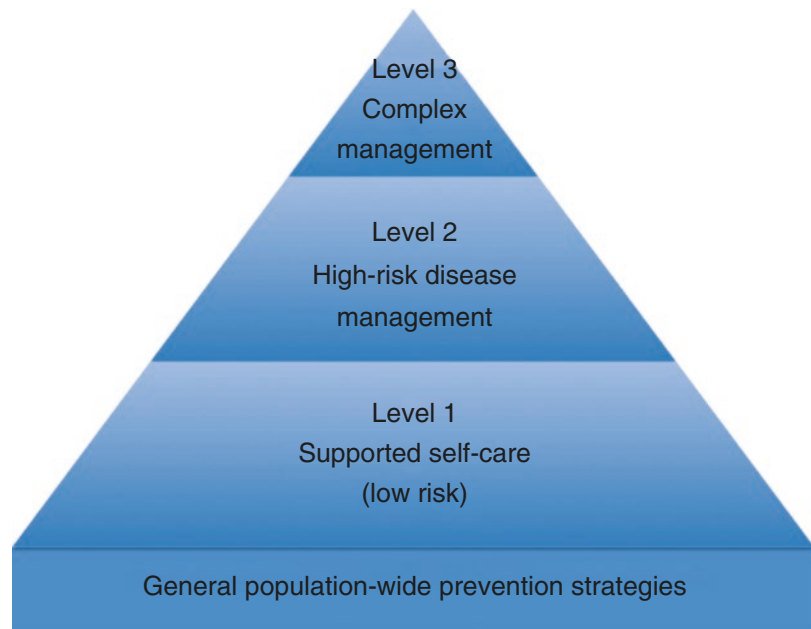
Level 1 are those patients who make up 70–80%. Intervention seeks to encourage patients to be activated. Active participants in their own care, learn to live with their conditions and manage it. This aims to help them prevent complications and slow down deterioration.

Level 2 are patients who are considered to be high risk, and their condition has progressed to a stage where active care management is required. This usually involves a multidisciplinary team that provides high-quality evidence-based care to the individuals through following agreed protocols and pathways.

The highly complex patients are designated Level 3, where they have developed multiple co-morbidities, and their care becomes disproportionately complex for them as well as the health system. A case worker is often required to actively manage the patient's health and help navigate through multiple health, social and community systems.

There are many who would argue that another level should be added to the Kaiser Pyramid, and this is at the level of health promotion for the general public, to prevent the whole of population even getting to Level 1. These sort of primary preventions include aiming to increase physical activity, reduce smoking rates, having a healthy diet, or increasing uptake of immunisations.

Fig. 10.3 Variation on the Kaiser pyramid



The components of disease management include:

- Population identification processes, including the increasing use of predictive modelling and pattern recognition
- Evidence-based practice guidelines
- Collaborative practice models that include physicians and support service providers
- Patient self-management education
- Process and outcomes measurement, evaluation and management

It is important to ensure that disease management programmes are put in place not just to manage costs considerations, but just as importantly quality of care, otherwise they will have a high risk of failing.

10.9 Regional and Rural Health

Australia, with its vast land and low population density, creates some interesting challenges that are quite unique to health care. There are often challenges that medical managers face, which are different from those encountered while working in metropolitan areas.

It is recognised that the overall health status of populations in regional and rural Australia is poorer than their metropolitan city counterparts. Health outcomes, as seen with higher death rates, tend to be poorer outside major cities [18]. This is most likely due to a multitude of reasons, including higher concentration of the socio-economically disadvantaged, lack of infrastructure, challenges with access to timely medical care, and the difficulty of attracting high-quality health care staff to the region.

According to AIHW, compared to major city dwellers, people in outer regional and remote areas are more likely to:

- Be a daily smoker (22% compared with 15%)
- Be overweight or obese (70% compared with 60%)
- Be insufficiently active (60% compared with 54%)
- Drink alcohol at levels that place them at risk of harm over their lifetime (24% compared with 19%)
- Have high blood cholesterol (37% compared with 31%)

There are clear differences that exist in health service usage between areas, for example, lower rates of some hospital surgical procedures or GP

consultations, but higher rates of hospital admissions. There are differences in risk factors, such as the population in regional and remote areas being more likely to engage in harmful activities such as smoking or drinking alcohol in harmful or hazardous quantities. Environmental risks also play a part, such as having more physically dangerous occupations, or factors associated with driving long distances or at speed.

Being in regional and rural areas means that health services are unlikely to be able to provide high complexity services such as neurosurgery or cardiac surgery due to a lack of scale. The decision for health services to provide these services is not taken lightly even if they could physically and financially afford to do so, as the low number of procedures means that the risk of poorer outcomes for patients is much higher. This invariably creates access difficulties for the communities, but could be mitigated to a certain degree by establishing strong partnerships with referral hospitals to facilitate access when required.

A significant challenge medical managers face in regional and rural areas is the difficulty of recruiting specialist medical staff. Often this can be costly, both in terms of one-off recruitment costs and remuneration. Many health services still offer fee-for-service remuneration models, and medical managers need to be aware of the risks associated with such models, such as over-servicing and performing unnecessary procedures, or trading safety for perceived efficiency.

Doctors who move to the region will also need to be supported in a variety of ways. Initially this may be in the form of relocation assistance, but will also include ensuring that there is sufficient peer support, opportunities for ongoing professional development and ability to participate in clinical reviews and audits.

While residents of more inaccessible areas of Australia are generally disadvantaged in their access to goods and services, educational and employment opportunities and income, a unique characteristic of regional and rural populations is that they often have a very strong sense of belonging within the community, and if this community spirit can be harnessed, it can often contribute to the betterment of the region's health services.

10.10 Indigenous Health

While historically it has been challenging to get accurate data to identify the extent of the problem, there has been significant progress in the availability and quality of statistical information on Aboriginal and Torres Strait Islander (ATSI) peoples over the last decade in Australia through the Census. Specific surveys of ATSI peoples have been conducted regularly to address gaps in health and welfare information to allow for monitoring changes over time.

What is clear, however, is that health and social outcomes for the Indigenous population are much poorer than the rest of Australia's populations.

An Indigenous boy born between 2010 and 2012 can expect to live more than 10 years less than a non-Indigenous boy (69.1 years compared with 79.7 years), and an Indigenous girl about 9 years less (73.7 years compared to 83.1). Across all age groups, the Indigenous population has higher death rates than non-Indigenous Australians.

In addition to poorer life expectancy, there are other measures of health in which Indigenous Australians fare much worse when compared to the non-Indigenous population. This is referred to as the health gap. Some examples are listed below, where Indigenous Australians, after adjusting for differences in age structure [19]:

- Had incidence rates of end-stage kidney disease 7 times that of non-Indigenous Australians in 2007–2010.
- Had 3.3 times the rate of diabetes/high sugar levels of non-Indigenous Australians.
- Had 3 times the hospitalisations for respiratory conditions and more than twice as many hospitalisations for mental and behavioural disorders as non-Indigenous Australians.
- Had an obesity rate 1.5 times that of non-Indigenous Australians.
- Were 1.5 times as likely to die from cancer in 2007–2011 as non-Indigenous Australians.
- Had higher youth suicide rates than non-indigenous Australians.
- Death rate in the 35–44 age groups is 5 times that of non-Indigenous Australians, and within the 0–4 aged groups death rate is more than double.

It is important to acknowledge that social determinants such as unemployment, lack of education, or increased behavioural risk factors contribute to this health gap, and there are also complex interactions between social determinants and risk factors. Of the social determinants, household income, highest level of schooling completed and employment status have the largest estimated impact on the gap.

Australian Governments have acknowledged this issue, through the Close the Gap Statement of Intent signed by the Prime Minister in 2008, and at the December 2007 COAG meeting at which the Australian governments committed to:

- Closing the life expectancy gap within a generation.
- Halving the mortality gap between ATSI and non-Indigenous children under 5-years of age.
- Halving the gap in reading, writing and numeracy within a decade.

While progress has been slow [20], it is important to remember that the Closing the Gap Strategy was only operationalised in July 2009, and the latest progress and priorities report (2015) only had data from 2012 to 2013 [21]. The magnitude of the goals will require time and a larger focus on access to appropriate primary health care services to detect, treat and manage treatable and preventable chronic conditions.

10.11 Gaps in Health

While health is the final common outcome desired, its achievement is contingent on the good functioning of many other processes and sectors. Historically, there has been an implicit assumption that through the implementation of narrow disease-specific interventions, broader health systems will be strengthened more generally. However, evidence of benefit for these selective health system interventions have been mixed [22]. Systems that are weak and fragmented may be further compromised by the over-concentration of resources in specific vertical programmes, leaving other areas under-resourced.

In Australia, the fragmentation of the health system with different governments funding different health programmes can lead to duplication of work processes, service disruptions in existing programmes, and distraction from core work activities.

It is also important to recognise the importance of sound governance, leadership and political will in order to improve the health of communities, whether from a national, state, or organisational perspective. Governments and organisations need to bridge the gaps between policies and their implementation, and address deeper sources of policy failure that can undermine health development.

Enlightened policy-making brings coherence to the delivery of health services and outcomes. It is important that the health of populations features as the principal concern of all health managers. Through inter-sectoral engagement, a platform must be created for coordination and consensus building across mutually reliant sectors. Such engagement will need to address multi-sectoral issues such as social determinants of health, macroeconomic policy, or health-related human rights.

10.12 Reflection

Many medical managers may not consciously realise that they work in public health, directly or indirectly. However, irrespective of whether one works in the public health unit of their local health department, or a private hospital, the work they are involved in often has a direct impact on public and population health. While governments have spent considerable efforts improving public health, legislation will always have a significant lag time behind accepted knowledge and quality initiatives, and it is essential that medical managers have an understanding of the challenges of contemporary public health issues, so that the solutions to problems that they implement take a more systemic approach, and benefits not only their health service but also the wider community.

10.13 Ready Reckoner

- Public and population health concerns itself with preventing disease, prolonging life, and promoting health through the organised efforts of society. Vulnerable populations often require a more specific focus.
- Medical managers need to be aware of what challenges the general public are at risk of, and the public and population health policies implemented in response to them. These policies affect health services and health care systems, and medical managers often play a significant role in moulding these policies and implementing them effectively.
- Australia has an ageing population, with associated increases in chronic diseases. It also has an ageing health workforce with implications for the supply of care in the future.
- Historical public health interventions include public sanitation, clean water and food supplies, and immunisation programmes. Recent efforts can be seen through tobacco and seat-belt legislation.
- The spread of communicable diseases can overwhelm health services quickly and the management requires a structured approach with good command procedures and clear communication channels in place. Medical managers also play a critical role in ensuring best practice infection control processes developed in health services including antimicrobial stewardship programmes, increasing hand hygiene compliance rates, and encouraging staff vaccinations.
- There has been significant effort by governments to reduce smoking rates, mainly through taxation and legislation, and improvements are starting to be seen. Attempts to promote a safe drinking culture are still ongoing, but one of the largest challenges the health system is facing is the abuse of illicit drugs, and in particular methamphetamines recently. It will require a coordinated approach from relevant sectors to change this tide.
- Chronic diseases pose a significant burden to Australia and other developed countries. It requires novel ways of managing these

patients, including use of risk stratification, predictive analytics, encouraging self-care and case management.

- Regional and rural populations have a different set of challenges compared to metropolitan populations due health conditions associated with lower socio-economic status and access to general and specialist care.
- The Indigenous population in Australia have much poorer health outcomes than their non-Indigenous counterparts. This has much to do with social determinants of health, and lack of access to early identification and interventions.

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