

DOWNLOAD PDF 6. LIFE STAGES, HEALTH AND DISEASE IN RURAL AUSTRALIA DENNIS PASHEN, ET AL

Chapter 1 : The new rural health / edited by David Wilkinson and Ian Blue | National Library of Australia

Life Stages, Health and Disease in Rural Australia / Dennis Pashen, et al Health of Indigenous Australians: a rural perspective / Ian Anderson and Neil Thomson -- 8. Remote Health / John Wakerman and Sue Lenthall -- 9.

Lyme disease-carrying ticks are now in half of all U. A new study shows just how rapidly. Over the past 20 years, the two species known to spread the disease to humans have together advanced into half of all the counties in the United States. Lyme disease cases have tripled in the United States over the last 2 decades, making it the most commonly reported vector-borne disease in the Northern Hemisphere. The disease now affects around 300,000 Americans each year. If diagnosed early—a rash commonly appears around the site of the tick bite—Lyme can be effectively treated with antibiotics, but longer term infections can produce more serious symptoms, including joint stiffness, brain inflammation, and nerve pain. To get a comprehensive map of where the two species—the blacklegged tick *Ixodes scapularis* and the western blacklegged tick *I. dentatus*. Centers for Disease Control and Prevention CDC in Fort Collins, Colorado, combined data from published papers with state and county tick surveillance data going back to 1980. They counted reports of tick sightings in each of the 48 continental U. Their results, published in the *Journal of Medical Entomology*, show that the blacklegged tick has undergone a population explosion, doubling its established range in less than 2 decades. It is now reported in 37 states across the eastern United States. The rarer western blacklegged tick, restricted to just six states, has shown only modest increases in established populations, from 3 to 10 states. Combined, these two Lyme disease vectors are now found in half of all U. The distribution of tick sightings across the United States between 1980 and 2000 is shown in the figure below. Top to bottom: Parasitologist Isis Arsnoe from Michigan State University in East Lansing and colleagues found that populations of blacklegged ticks behave differently in the north and the south of the United States. Nymphs of the blacklegged tick in the north are bolder and more active in seeking out hosts, a behavior known as questing. Avoiding areas of thick vegetation, using a strong repellent, and bathing after hiking are usually enough to avoid contact, CDC says. Eisen says that the most important thing now will be to carefully monitor the spread of the blacklegged tick, so that that people can educate themselves about the potential disease vectors in their area and take steps to protect themselves.

DOWNLOAD PDF 6. LIFE STAGES, HEALTH AND DISEASE IN RURAL AUSTRALIA DENNIS PASHEN, ET AL

Chapter 2 : GPs call for radical rethink of health funding in Tasmania to ease pressure on state's hospitals

Life Stages, Health and Disease in Rural Australia / Dennis Pashen, et al 7. Health of Indigenous Australians: a rural perspective / Ian Anderson and Neil Thomson.

Do you have a story? On the west coast, access to healthcare means people are often presenting sicker and later, with avoidable deaths the end result. Lianne Anderssen, another west coast resident, has her own story to tell. Her stepson has a mental illness and because of a lack of services on the west coast, is receiving psychiatric care in Burnie. Lianne Anderssen says a lack of mental health services causes patients even more stress. Henry Zwartz The mining town has been gradually stripped of its health services in recent decades. This is in a state that has the second-lowest life expectancy in the country behind the Northern Territory. The West Coast Regional Hospital has a small emergency department, and visiting services like physiotherapy and a diabetes clinic. For anything more serious, patients are transported two hours away to Burnie, even further to Launceston General Hospital or do the four-hour trip to Hobart. Queenstown has three permanent GP locums, including a registrar and intern, who work across the local hospital and the GP clinic. Two locum psychiatrists work one to two days each week in Queenstown and Zeehan. Do you know more about this story? Contact us at tasinddepth@abc.com.au. The simple answer is no," he said, adding the west coast is three doctors short at the moment. Trainee doctor Chris Etherington says he will probably have to leave the state to get a job. Henry Zwartz The west and east coasts of Tasmania rely heavily on permanent locums like Dr Pashen, who spends most of his working year in Queenstown. Dr Pashen said the Queensland trainee program, which he helped establish, has transformed rural medicine in that state. The Derwent Park clinic sees about 21, patients a year. Most people in the queue have turned up because they cannot get an appointment with their regular GP. Ross Morgan was one of those who turned up early. GP Annette Douglas co-owns the after-hours clinic and a telephone triage service. She said the way Medicare operates, with a fee-for-service model, stops GPs from being able to do something like monitor a child with asthma. GP Annette Douglas said hour short-stay units would help relieve pressures. Time for radical overhaul: There are 43 GP vacancies in the state but the number could be much higher because not every job is advertised on the Federal Government-funded agency HR Plus. The state also has the highest number of GPs per capita after the Northern Territory. Not all of the doctors work fulltime though, and there is no data on how many GP practices are too busy to accept new patients, or how long people have to wait to get an appointment. Like the rest of Australia, attracting doctors to regional and remote parts of the state is extremely difficult. Although funding GP visits is a federal responsibility, it is increasingly becoming a state problem. He said Victoria and Queensland were already leading the way. In a statement, Health Minister Michael Ferguson said the government worked collaboratively with a range of key stakeholders to maximise coverage and service availability. In a statement, the Federal Minister for Health Greg Hunt said Medicare spending was guaranteed and would continue to increase. The RACGP maintains that the indexation rates continue to not reflect the genuine value of general practice.

Chapter 3 : Epidemiology of Alzheimer Disease

Life Stages, Health and Disease in Rural Australia / Dennis Pashen, et al -- 7. Health of Indigenous Australians: a rural perspective / Ian Anderson and Neil Thomson -- 8. Remote Health / John Wakerman and Sue Lenthall -- 9.

On the west coast, access to healthcare means people are often presenting sicker and later, with avoidable deaths the end result. Lianne Anderssen, another west coast resident, has her own story to tell. Her stepson has a mental illness and because of a lack of services on the west coast, is receiving psychiatric care in Burnie. This is in a state that has the second-lowest life expectancy in the country behind the Northern Territory. The West Coast Regional Hospital has a small emergency department, and visiting services like physiotherapy and a diabetes clinic. For anything more serious, patients are transported two hours away to Burnie, even further to Launceston General Hospital or do the four-hour trip to Hobart. Queenstown has three permanent GP locums, including a registrar and intern, who work across the local hospital and the GP clinic. Two locum psychiatrists work one to two days each week in Queenstown and Zeehan. The simple answer is no," he said, adding the west coast is three doctors short at the moment. Dr Pashen said the Queensland trainee program, which he helped establish, has transformed rural medicine in that state. The Derwent Park clinic sees about 21, patients a year. Most people in the queue have turned up because they cannot get an appointment with their regular GP. Ross Morgan was one of those who turned up early. GP Annette Douglas co-owns the after-hours clinic and a telephone triage service. She said the way Medicare operates, with a fee-for-service model, stops GPs from being able to do something like monitor a child with asthma. Time for radical overhaul: There are 43 GP vacancies in the state but the number could be much higher because not every job is advertised on the Federal Government-funded agency HR Plus. The state also has the highest number of GPs per capita after the Northern Territory. Not all of the doctors work fulltime though, and there is no data on how many GP practices are too busy to accept new patients, or how long people have to wait to get an appointment. Like the rest of Australia, attracting doctors to regional and remote parts of the state is extremely difficult. Although funding GP visits is a federal responsibility, it is increasingly becoming a state problem. He said Victoria and Queensland were already leading the way. In a statement, Health Minister Michael Ferguson said the government worked collaboratively with a range of key stakeholders to maximise coverage and service availability. In a statement, the Federal Minister for Health Greg Hunt said Medicare spending was guaranteed and would continue to increase. The RACGP maintains that the indexation rates continue to not reflect the genuine value of general practice.

Chapter 4 : Queenstown General Practice

This particular review is looking at the decline and subsequent emergent role of the "rural generalist" in the context of Australian rural and remote health.

Equity of access to primary health care PHC services is a fundamental goal of rural health policies and planning. This article investigates how best to ascertain the costs of delivering high quality PHC services across different geographical locations through reporting the research findings from a pilot study. The aim of the study was to ascertain whether it is possible to estimate the total, per capita and per consultation costs of providing high quality PHC services in rural locations of different population sizes, and to describe the methodological issues associated with such an exercise. A retrospective, top-down approach was used. A sample of high performing primary care practices in rural communities was identified using data from the Australian Primary Care Collaborative APCC program. The researchers selected practices in rural communities Australian Standard Geographical Classification remoteness areas 2 and 3 and assigned a population count using Australian Bureau of Statistics census data urban centre locality. Four population groups of different sizes were chosen: A data collection tool was developed to capture information describing annual operating costs both capital and recurring , human resources, PHC services provided and reflections from practice principals on issues related to provision of sustainable high quality primary care in a changing environment. Practices were visited between March and July Seven primary care practices agreed to participate. The data exhibited wide variation in total recurrent costs, capital and depreciation costs. There was a weak association between total annual costs and costs of practices grouped by the size of the local community. A stronger association was evident when the size of current patients registered with the practice was considered. The cost per person registered with the practice declines as the number of patients registered increases. There was some evidence of an association between cost per consultation and the number of registered patients, with unit cost falling as the size of the registered patient population increased. This research highlights several significant issues that need to be addressed in seeking to benchmark rural PHC services: Existing national health data sets should be more accessible to researchers for the purpose of benchmarking sustainable, high performing rural PHC services. National rural health and related professional peak bodies should investigate the potential to combine resources to undertake a national survey of the costs of providing high quality PHC across rural Australia. Introduction Across the western world, equity of access to primary health care PHC services is a fundamental goal of rural health policies and planning 1. In Australia, national and state strategic plans and frameworks are committed to providing equitable access to PHC, regardless of where people live 2. At the same time, faced with a growing demand for health care, governments and health authorities also seek to maximise service efficiency and effectiveness. The need to balance these three requirements of equity, efficiency and effectiveness is a complex task, nowhere more so than in non-metropolitan areas, where delivery costs are high and health needs are great. This variation reflects the nature of PHC services required by different communities, the costs of providing them, and specific barriers to their delivery, with both community size and geographical remoteness among the key determinants. Therefore, governments and health service providers continue to seek ways to improve equity of access to PHC. Three important questions underpin the formulation of appropriate health policies to guide the equitable, efficient and effective provision of PHC services in rural and remote regions of Australia: What core PHC services should be available to all Australians, regardless of geographical location? How might these core PHC services be provided in a manner appropriate to different geographical contexts? What are the costs associated with delivering high quality core PHC services across different geographical locations? To date, rigorous empirical research has been undertaken into the first two questions In contrast, empirical evidence relating to the cost of delivering high quality PHC efficiently and effectively and the extent to which these costs vary geographically is virtually non-existent. This article investigates how best to ascertain the costs of

DOWNLOAD PDF 6. LIFE STAGES, HEALTH AND DISEASE IN RURAL AUSTRALIA DENNIS PASHEN, ET AL

delivering high quality core PHC services across different geographical locations through reporting the research findings from a pilot study seeking to redress this knowledge gap. The specific aim of the study was to ascertain whether it is possible to estimate the total, per capita and per consultation costs of providing high quality PHC services in rural locations of different population sizes, and to describe the methodological issues associated with such an exercise. As these estimates are derived from high quality services, they can potentially be used as benchmarks against which other services can be compared. This was a complex exploratory study and it is important to understand the contextual issues related to costing of rural PHC services. The introduction summarises the current macro-scale policy used by the Australian Government to ensure equitable funding for provision of PHC services across states and territories, relevant literature pertaining to the meso-scale task of PHC resource allocation and different costing methods, and availability of existing national data sets relating to expenditure, utilisation and performance. Improving equity through fiscal equalisation In Australia, significant geographical variation exists in both primary care and acute care expenditure. Costs of services increase with distance from capital cities⁹, the use of hospital services increases and the use of Medicare-funded PHC services decreases. For example, in , residents of rural and very remote areas received approximately only three-quarters and one-half of the expenditure of major city residents respectively. For many years, several adjustments, including for geographical remoteness and indigeneity, have been incorporated into government policies of fiscal equalisation¹¹ and the associated resource allocation weightings. Underpinning fiscal equalisation, the Commonwealth Grants Commission CGC recommends how revenue raised from the Goods and Services Tax GST should be distributed to Australian states and territories in order to provide these governments with the capacity to provide comparable services for their populations regardless of where they live. Factors the Commission considers include indigeneity, population dispersion, socioeconomic status and diseconomies of scale. A cost gradient in service provision is recognised, which accounts for higher costs for providing equivalent services in rural and remote areas compared with capital cities due to higher wages, greater costs for freight, communication and housing. The calculations on which these adjustments are based reflect current patterns of service delivery and hence are unlikely to fully account for the relative cost of achieving truly equitable access to PHC. Although the current system of horizontal fiscal equalisation implemented by the CGC is a mystery to almost the entire Australian community¹⁴, arguably without it larger disparities than currently exist would arise. Funding arrangements and resource allocation formulae designed to improve equity of access to PHC services would be strengthened by empirical evidence on the costs associated with achieving high performing PHC services in rural and remote settings. This evidence could underpin funding and workforce benchmarks that could be used to monitor improvements in equity. For example, workforce and related funding benchmarks could facilitate improved workforce recruitment and retention programs and underpin more efficient resource allocation necessary to improve equity in the provision of PHC services. Moreover, PHC service benchmarks would assist in monitoring and evaluating variation in health outcomes, and facilitate the comparison of service performance across jurisdictions after taking account of population size, location and need. Benchmarking for service equity Benchmarking usually refers to an ongoing, systematic evaluation of organisational products, services and processes, most commonly associated with organisations attempting to improve their performance in order to emulate best practice. Through yielding a standard by which something can be systematically measured or judged, benchmarking provides an opportunity to better determine the inputs and processes required to achieve performance goals. Benchmarking is used in acute health services and for some clinical processes in primary care¹⁷. The use of benchmarking for PHC services at a national level is arguably more complex and challenging than its application within a narrower area of service provision, largely because the parameters under examination vary widely in how they are defined, are often highly interrelated, and are less easily measured. In view of this, relevant literature pertaining to PHC resource allocation and different costing methods was examined, together with existing national data relating to PHC service expenditure, utilisation and performance. Lessons from the literature: In healthcare literature, equity is

often defined in terms of achieving an allocation of resources across groups including geographic regions that reflects the relative needs of those groups. Equity can be defined across several dimensions such as equity in inputs, equity in access, equity in service provision and equity in outcomes¹⁹. Achievement of equity in any one of these dimensions may be important for the achievement of equity in another. However, in some instances achievement of an equity goal may imply a very different allocation of resources to another. By their nature equity objectives involve a manifestation of values. Mooney et al describe the concept of claims or reasons why one group should be allocated more resources than another. This approach includes a degree of self-assessed health and reflects community views. Allocation of resources may differ within, between and across communities, adding a layer of complexity in the process. A key component of equity of access to health care is needs-based funding. Needs-adjusted capitation formulae have been adopted in many systems to guide the allocation of resources to local health providers or services, reflecting assessment of population need rather than current utilisation. Factors considered in these formulae may include indicators of the relative need for health services and cost of service provision. For example, the former resource distribution formula in the health system of the state of New South Wales used standardised mortality ratios, socioeconomic variables, age, gender and indigeneity as indicators of relative need^{22, 23}, and a dispersion cost factor to recognise the higher cost of providing state-supported PHC and community health services in rural areas. Although reliable data timely and accurate are required to ensure accuracy and evaluation of health outcomes, even rudimentary population data can be used. This joint initiative of the NT and Australian Government aimed to expand PHC services and improve health infrastructure housing, clinics and communication systems. Funds were allocated according to need, and a per capita funding benchmark was established for each local health service delivery area. Methodological issues to be considered include the study perspective, uncertainty, validity, generalisability and availability of data. In measuring costs directly, the bottom-up approach, also referred to as micro-costing, is seen to be more reliable and therefore a preferred approach. Clinical services are broken down into steps, each requiring detailed resource utilisation measurements. However, this method is time consuming, expensive and may be impractical. In addition, it may lead to an inaccurate estimate of costs at a more global level. The complexity and resource intensiveness of this approach were confirmed in a previous pilot examining the cost of providing services for two chronic diseases. In contrast, a top-down approach is a useful and reasonably accurate method, breaking services down into larger components. It is simple, cheaper and faster, may be able to tackle regional variability, and generally leads to more accurate estimates at the global level. It may be less accurate as large resource units are measured. The literature provides little guidance in several issues. No matter which method is adopted, costs should be measured in the same way using transparent methods. Many studies make an assumption that services being compared will have similar health benefits and that the cost objects are the same or similar. The potential study biases including those related to scale, case mix and site selection need to be addressed or acknowledged. There is little guidance on how to deal with missing data and variations in input processes. Misleading or absent data can lead to unfair comparison and flawed policy choice. In short, the decision on how best to measure the costs of providing equitable health care is complex, and very much dependent on the availability of good data. PHC in Australia is complex, fragmented and often uncoordinated. Failure to adopt a national single patient identifier has slowed the development of a system-wide approach, linking clinical and financial information and development of more robust adjustment methods and modelling of health resource allocation, which would contribute to more efficient and effective allocation of funds for populations. Other sources of data include population health surveys, health registers and surveillance systems. Each data source is not without its problems. If available, there is invariably a delay in accessing timely information from these sources. Moreover, data can only provide information about service users, not about those with poor access to PHC. Frequently, these data cannot be easily linked and do not include the wide range of PHC services provided by other health workers. National expenditure data describing government funded community health services are not available. Private sector data from general practitioners and private health insurers are often inaccessible at

DOWNLOAD PDF 6. LIFE STAGES, HEALTH AND DISEASE IN RURAL AUSTRALIA DENNIS PASHEN, ET AL

a national level. Because relevant national data were not available, and given the resource intensiveness of a bottom-up approach ²⁶, the present study focused on applying a largely top-down costing approach to a sample of similar high performing rural PHC services located in different geographical settings, with a view to costing the inputs necessary to provide a comprehensive suite of core PHC services, and ascertaining how these costs might vary according to geographical location and community size. The researchers chose measures that described the management of diabetes and coronary heart disease, where all practices operating from a high base received an overall score indicating whether the practice had improved, declined or remained the same in regard to meeting evidence based targets for registered patients over a month period. The researchers excluded practices that were in close proximity to metropolitan areas, those that formed regional centres such as the Sunshine Coast in Queensland, the Central Coast and the Illawarra in New South Wales and those with a population greater than 10,000. Four different sized population groups were chosen based on previous research ⁷: Lists of all practices that met these criteria were validated by rural PHC experts in each jurisdiction as well as the principal clinical advisor of the Improvement Foundation Australia, which provided the APCC data.

Chapter 5 : JAMA “ The Latest Medical Research, Reviews, and Guidelines

Mildenhall D, Chater A, Mara P, Maxfield N, Owens C, Rosenthal D, et al. Viable models of rural and remote practice: stage 1 and stage 2 reports. Kingston, ACT: Rural Doctors Association of Australia,

Received Mar 12; Accepted May This article has been cited by other articles in PMC. Abstract Background Poor access to doctors at times of need remains a significant impediment to achieving good health for many rural residents. The two-step floating catchment area 2SFCA method has emerged as a key tool for measuring healthcare access in rural areas. However, the choice of catchment size, a key component of the 2SFCA method, is problematic because little is known about the distance tolerance of rural residents for health-related travel. Our study sought new evidence to test the hypothesis that residents of sparsely settled rural areas are prepared to travel further than residents of closely settled rural areas when accessing primary health care at times of need. Methods A questionnaire survey of residents in five small rural communities of Victoria and New South Wales in Australia was used. The two outcome measures were current travel time to visit their usual doctor and maximum time prepared to travel to visit a doctor, both for non-emergency care. Kaplan-Meier charts were used to compare the association between increased distance and decreased travel propensity for closely-settled and sparsely-settled areas, and ordinal multivariate regression models tested significance after controlling for health-related travel moderating factors and town clustering. Results A total of questionnaires were completed with from residents in closely-settled locations and from residents in sparsely-settled areas. Differences were more apparent in terms of maximum time prepared to travel. Differences of maximum time remained significant after controlling for demographic and other constraints to access, such as transport availability or difficulties getting doctor appointments, as well as after controlling for town clustering and current travel times. Conclusions Improved geographical access remains a key issue underpinning health policies designed to improve the provision of rural primary health care services. This study provides empirical evidence that travel behaviour should not be implicitly assumed constant amongst rural populations when modelling access through methods like the 2SFCA. Doctors, Access, Rural residents, Primary health care, Travel behaviour, Distance Background In accord with the declaration of Alma Ata, ensuring adequate access to primary health care PHC services is vitally important for governments and health authorities of most countries [1 , 2]. Good access increases timely utilisation of health services [3 “ 5]. In contrast, populations without adequate access exhibit poorer health outcomes [6 “ 9]. While access is a complex concept [10 , 11], for health care consumers living in rural areas a key component of good access to health services is minimising the geographical barriers of distance and isolation, particularly when rural residents are required to travel outside of their immediate town to access health care. Many small rural towns lack adequate resident health services, including doctors [12]. Despite numerous incentive policies offered by governments of many countries for some time, the recruitment and retention of doctors in small, often isolated, rural communities remains difficult [13 “ 15]. There exists a vast literature on access barriers to health and medical care in rural areas, with geographical isolation and distance foremost. Moreover, research has demonstrated associations between increased geographical barriers and decreased utilisation of inpatient, screening, outpatient and other community-based services [20 “ 24]. Whilst many studies suggest that individuals in more remote setting accept increased travel as a routine part of their lives [25 , 26], few have specifically investigated the travel behaviour of rural residents in relation to geographic barriers when accessing their usual PHC service [27 “ 29]. We hypothesise that residents of sparsely settled rural areas are prepared to travel further than residents of closely settled rural areas given a need to access PHC services. This empirical investigation of health-related travel behaviour of rural residents is very important for both health policy and service planning. Recently, the two-step floating catchment area 2SFCA method has emerged as a key tool for service planners to identify rural access differences of PHC or define PHC shortage areas [31 “ 34]. Critically, access models such as the 2SFCA method are dependent on the choice of

catchment size s and related decisions on distance-decay functions [2 , 35]. There is little information to guide which is the most appropriate function, such that Wang recently synthesised six different distance-decay functions to be effective [36]. Moreover, it is not known whether the same distance behaviour that is, function homogeneity applies equally to all rural populations, or whether residents of more sparsely-populated rural areas behave differently from those residents in more closely-settled regions. Two communities were in closely-settled regions " that is, where the population density was 4"8 per square kilometre and three communities were in sparsely-settled regions " that is, where population density was only 0. For cost and methodological reasons, this study did not cover the two remote categories. Each of the five communities was selected on the basis of the following common characteristics: Three of the communities had populations between and and two had populations between and The data were obtained via a mailed reply-paid questionnaire survey undertaken in August-September The questionnaire was distributed to every household in each community using the Australia Post unaddressed mail service [39]. One member of each household aged 18 or more was invited to participate in the survey. To maximise response rates, extensive community publicity was undertaken via media outlets radio and newspapers , community forums, health and community services, school newsletters, and retail outlets in each locality prior to the questionnaire distribution. Three weeks after the initial mail out, a reminder letter was sent to all households [40]. Extremely high costs of face-to-face or telephone interviews across these widely-dispersed populations precluded our use of these methods. Similar to the study undertaken by Shannon in [27], two specific questions related to travel behaviour were employed. Our questionnaire additionally included questions relating to other potential explanatory factors of travel behaviour including demographic characteristics and other potential predisposing factors such as poorer mobility or availability. Means, percentiles and Kaplan-Meier survival functions were used to measure the relationship between increased distance and decreased travel propensity that is, distance-decay. Significant differences by study group closely- or sparsely-settled were calculated using the logrank test. Most participants rounded their responses to the nearest 5"10 min or kilometres. Additionally, respondents indicated whether they had experienced a recent delay in accessing the doctor because of difficulty in getting an appointment, or more generally if access was ever a problem. All regression models were adjusted for clustering by town, where observations within the five collection towns may not be independent. Though this rate was disappointing, our sample captures the behaviour of those residents most concerned with, or likely to need, the services of a GP. Of the responses, were from residents in closely-settled areas and were from residents in sparsely-settled areas. Notably, there were no differences in the observable characteristics of the two study groups across all enabling and need factors age, gender, paid employment, self-reported health and last utilisation time , thus concerns of low response rates are minimised for the purpose of this study. The current travel behaviour for almost half of the residents of both sparsely- and closely-settled communities is nearly identical since similar proportions do not travel outside of their town.

DOWNLOAD PDF 6. LIFE STAGES, HEALTH AND DISEASE IN RURAL AUSTRALIA DENNIS PASHEN, ET AL

Chapter 6 : Lyme disease—“carrying ticks are now in half of all U.S. counties | Science | AAAS

Context: People living in rural areas have poorer health than their urban counterparts with higher morbidity and mortality rates and lower life expectancy. Challenges attracting health professionals to work in rural locations in Australia and elsewhere have been well- documented.

Abstract The global prevalence of dementia has been estimated to be as high as 24 million, and is predicted to double every 20 years until at least As the population worldwide continues to age, the number of individuals at risk will also increase, particularly among the very old. Alzheimer disease is the leading cause of dementia beginning with impaired memory. The neuropathological hallmarks of Alzheimer disease include diffuse and neuritic extracellular amyloid plaques in brain that are frequently surrounded by dystrophic neurites and intraneuronal neurofibrillary tangles. The etiology of Alzheimer disease remains unclear, but it is likely to be the result of both genetic and environmental factors. In this review we discuss the prevalence and incidence rates, the established environmental risk factors, and the protective factors, and briefly review genetic variants predisposing to disease. Alzheimer disease is characterized by progressive cognitive decline usually beginning with impairment in the ability to form recent memories, but inevitably affecting all intellectual functions and leading to complete dependence for basic functions of daily life, and premature death. The pathological manifestations of Alzheimer disease include diffuse and neuritic extracellular amyloid plaques and intracellular neurofibrillary tangles accompanied by reactive microgliosis, dystrophic neurites, and loss of neurons and synapses see Serrano-Pozo et al. The underlying causes of these multifaceted changes remain unknown, but advancing age, and genetic and nongenetic antecedent factors are thought to play important roles. Alzheimer disease is the most frequent cause of dementia in Western societies. In the US, approximately 5. Given that both established and developing nations are rapidly aging, the frequency is expected to double every 20 years until The magnitude of the impending rise owing to societal aging is considerable and will be a costly public health burden in the years to come. They included aspects of medical history, clinical examination, neuropsychological testing, and laboratory assessments McKhann et al. These criteria have been remarkably reliable and valid for the diagnosis of AD over the past three decades Galasko et al. The criteria were developed with the intent of accurately associating the clinical symptoms with the neuropathological manifestations after death. Levels of certainty were established that were labeled as definite for autopsy-confirmed disease, probable for the typical clinical syndrome without intervening issues and possible for diagnoses complicated by disorders that might contribute to the dementia. The criteria facilitated estimates of the prevalence and incidence rates of clinically diagnosed probable and possible AD. With major advances in neuropsychological assessment, brain imaging and the neuropathological, biochemical and genetic understanding of this disease, revisions were considered a necessity. The breadth of the AD phenotype in society is greater than was previously thought. For example, neuropathological changes may precede clinical dementia by a decade or more. The growing use of brain imaging and cerebrospinal fluid biomarkers see below may yield both higher specificity and sensitivity in the diagnosis and thus are considered in the updated diagnostic criteria, especially when used for clinical research. It has become increasingly clear that cerebrovascular disease can coexist with AD to a greatly varying extent, further contributing to the cognitive and physical dysfunction. A set of newly proposed criteria are similar to, but distinct from, those in the NINCDS-ADRDA criteria, with updates that include the recognition of both amnesic and nonamnesic symptom onset and alterations in numerous other cognitive domains. Further, cerebrovascular disease is now recognized as a contributor to dementia, defined by a history of a stroke temporally related to the onset or worsening of cognitive impairment, the presence of multiple or extensive infarcts, or severe burden of hyperintense white matter lesions by MRI. Accordingly, the presence of substantial cerebrovascular pathology reduces the certainty of a clinical diagnosis of AD to possible. Hallucinations, delusions, Parkinson-like motor manifestations and related findings can suggest dementia with Lewy bodies or other forms of dementia see

DOWNLOAD PDF 6. LIFE STAGES, HEALTH AND DISEASE IN RURAL AUSTRALIA DENNIS PASHEN, ET AL

Tarawneh and Holtzman ; Weintraub et al. In this chapter, we will discuss the prevalence and incidence rates of AD disease in developed and developing countries and summarize the evidence for numerous antecedent risk factors, protective factors and genetic risk factors. The results suggested that North America and Western Europe have at age 60 the highest prevalence of dementia 6. The annual incidence rates per for these countries were estimated at The prevalence rates for AD also rise exponentially with age, increasing markedly after 65 years. There is almost a fold increase in the prevalence of dementia, predominately Alzheimer disease, between the ages of 60 and 85 years Evans et al. Compared with Africa, Asia and Europe, the prevalence of AD appears to be much higher in the US, which may relate to methods of ascertainment. The prevalence may be higher among African-American and Hispanic populations living in the US, but lower for Africans in their homelands, for reasons that remain uncertain Ogunniyi et al.