Public Health Issue: Foetal Alcohol Spectrum Disorder

Word count 581

Introduction

The Ministry of Health (MoH) statement that Foetal Alcohol Spectrum Disorder (FASD) is 100% preventable is out of alignment with evidence; a new approach is needed. FASD is an umbrella term for the spectrum of harms associated with foetal alcohol exposure, including birth defects, cognitive and developmental problems[1]. Alcohol is known to be highly toxic to the foetus and all health care practitioners are required**Error! Bookmark not defined.** to advise complete abstinence from alcohol during pregnancy.

Epidemiology

MoH cites that 570 births per year are affected by FASD but does not provide data to support this figure[2]. In another estimate, 1% of the NZ population is affected by FAS[3]. The social normality of alcohol consumption (79% of the New Zealand population consume alcohol[4]) results in a clinically significant level of foetal alcohol exposure[5].

Literature

While most women cease drinking during pregnancy, a proportion do not[6]. For these women, advice to cease is insufficient. The NZ MoH "Discussion Document: Foetal Alcohol Syndrome"[7] states that the problem is entirely preventable; however no suggestions are made as to how this will be achieved. Evidence-based interventions[8] [9] include provision of comprehensive care for the mother, and early referral of the at-risk child for developmental assessment. Despite treatment, the foetal exposure to alcohol for the current pregnancy may not be amenable to change, but there will be benefit from comprehensive care, social support and planning for subsequent pregnancies.

Potential Approaches

In addition to clinical care, creation of a healthier environment [10] requires a social change away from normalised alcohol use. The health education message will require expertise and a budget sufficient to compete effectively with alcohol marketing groups.

Reduction in the rates of Foetal Alcohol Syndrome cannot be achieved without polices limiting the widespread harmful levels of alcohol consumption. The free market economy requires legislative protection to ensure that alcohol is not treated as an ordinary commodity[11] [12].

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Public Health Issue: Hepatitis C in New Zealand

Word count 593

Introduction

This public health issue is one of continued transmission in addition to current and future burden of disease, with a large, aging undiagnosed cohort.

Over the last three years in New Zealand, direct-acting antiviral treatment for Genotype-1 has been available. 3200 clients were treated, with a 96% cure rate in both primary and specialist care. The cost appears to have been above $40 000 per person, based on Pharmac data[12].

The World Health Organisation set a target of elimination of viral hepatitis as a public health threat (defined as a 90% reduction in incidence) by 2030[12]; New Zealand is a signatory to this target but is not on track to meet the target. As of 1st February 2019, a pangenotypic regime is available in New Zealand, and a public health strategy[12] is required to ensure effective use.

Epidemiology

Local Opioid Treatment Service data on Hepatitis C infection rates shows that over half of new admissions have been exposed to the virus, 80% progressing to chronic infection. New Zealand statistics[12] point towards 50 000 people or 2% of our population being infected, up to half of these being unaware of it. This is approximately equal to the global average infection rate[12] [12]. An estimated 25% of chronically infected clients will progress to cirrhosis, and of these the rate of hepatocellular carcinoma is up to 5% per annum.

Literature

Local and international data indicates that the burden of disease and cost associated is rising and will rise further if cohort treatment is delayed[12]. Conversely, where curative treatment is available, total healthcare costs fall. Rates of decompensated cirrhosis and liver transplants related to Hepatitis C have fallen within a few years of the availability of direct-acting antiviral treatment overseas. Thus treatment though expensive, is cost-effective.

Literature identifies two cohorts of clients who require diagnosis and treatment. The first are current injecting drug users who can be difficult to engage in traditional health care pathways. They are at risk of transmitting the disease and perpetuating the epidemic[12] [12] [12]. The other relevant cohort is

the unaware population who may have contracted the infection many years ago. They are neither connected with harm-reduction services nor perceived by health professionals as being at-risk.

Nations such as Mongolia and Egypt, where a course of generic treatment is fully funded are amongst only 12 nations who are on track to meet the 2030 target. Fair pricing of medicines remains an issue[12] [12] [12] [12].

Potential Approaches

I am participating in the National HCV Action Plan Working Group, developing a strategy for prevention, testing and treatment, attention to equity of outcome, funding and implementation of the plan, and evaluation of efficacy.

Targeted testing is becoming less effective as the strategy does not reach the unaware population, and targets stigmatising risk factors. As the clearly high-risk population is exhausted, positives become less frequent and repeat tests add costs. Overseas, cohort screening has been found less effective overseas than a single episode of screening for entire populations[12]. Unless there is a central registry tests will be duplicated and become cost-ineffective.

The National Action Plan will include education of Primary Care Providers, associated with CME points. Treatment pathways have been simplified with reduced need for lab tests, simple regimes, few drug-interactions and few contra-indications.

Harm reduction services require extension[12] to include point-of-care testing and supported access to treatment in addition to increased availability of free-to-user injecting equipment.

A public awareness campaign has commenced in a manner intended to target the older cohort of undiagnosed who do not wish to identify with stigmatising risk factors.

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Public Health Issue: Prescription Opioid Dependence

Word count 575

Introduction

Opioid prescribing can result in harm within the pain management population and contributes to the pool of available illicit opioids. It is a challenge to provide opioids in a manner which takes into account both individual symptom control and the risk of wider harms.

The issue was raised in the context of increasing numbers of clients presenting to the Opioid Treatment Service with dependence upon prescribed opioids.

Epidemiology

Up to 12.5% of New Zealanders are affected by Chronic Pain[12]. The number of people in New Zealand communities who were given a potent opioid at least once in a year has gone up, from 63,000 people in 2011 to 77,000 people in 2016[12]. The fact that opioid prescribing rates vary greatly between geographical regions and according to demographic factors such as client gender, age and race suggests that patterns of opioid prescribing are influenced by prescriber factors.

The opioid epidemic is affected by geopolitical boundaries; while the USA experience must be noted[12], New Zealand epidemiology is influenced by different geography, policy, prescribing patterns and different illicit availability with consequent differences in harms.

Literature

Opioid prescribing results in a myriad of harms[12], which may be hidden from the medical consultation due to occurring after a delay, as a result of diversion or due multiple prescribers with incomplete information.

A significant proportion of those prescribed opioids experience adverse effects including lack of therapeutic efficacy, tolerance, hyperalgesia, withdrawal phenomena, side effects, long term risks[12] (including cardiovascular co-morbidities, endocrine and immune effects), inadvertent overdose, performance impairment or substance use disorder. Most pain management guidelines support only limited use of opioids within the context of a wider multi-disciplinary treatment plan**Error! Bookmark not defined.**. There are only 12 full-time equivalent Pain Specialists in New Zealand. This

is less than a third of the number needed to be in line with UK provision[12]. Access to Primary Care in New Zealand is neither universal nor free[12].

Potential Approaches

Opioid prescribing requires the navigation of all the above issues in a context of constrained resources and aggressive marketing tactics by pharmaceutical companies.

Embedding simple tools such as Douglas Gourlay's Universal Precautions in Pain Prescribing[12] in Primary Care prescribing systems will be more effective than mere education of staff. Flagging of prescribing outside of guidelines and provision of care pathways with access to Specialist consultation would be useful.

Mainstream media are beginning to refute the messages of pharmaceutical advertising[12]. Adequate funding of educational messages is useful.

Of critical importance will be the development of a centralised electronic prescribing and dispensing system with data collection and feedback. This has been implemented overseas[12] [12]. Automated flagging of prescribing concerns to central monitoring agencies is possible. Real-time feedback to prescribers and pharmacies has been shown to change prescribing patterns before the threshold for intervention by external agencies is reached. This would contribute hugely to a safer environment[12]. Data collected could support development of better controls on the prescribing of controlled drugs including a pathway to specialist review for all clients being prescribed outside of usual parameters, and education of these prescribers.

Development of language free from stigma, addressing the "silo-ing" in healthcare and use of tools which allow long-term opioid provision to be looked at in a paradigm of safety and efficacy will allow for improved outcomes for clients regardless of whether dependence or chronic pain are the primary issue, as both these client groups seek the outcome of autonomy and quality of life.

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Public Health Issue: Drug Law Reform: Whakawātea te Huarahi

Word count 571

Introduction

Drug policy which emphasises enforcement may not align with public health priorities. This is of particular concern when the outcome is increased health inequity and failure to uphold Treaty pf Waitangi[12] obligations.

Epidemiology

New Zealand's imprisonment rate is the seventh-highest in the OECD[12], with Māori males heavily over-represented[12]. Direct drug-related crimes account for only around 12%**Error! Bookmark not defined.** of sentences each year, but up to 70% of prisoners have problems with substance use[12].

Literature

Substance use disorder is associated with a high burden of disease[12] [12]. In 2013 the Department of Corrections set out to address substance use amongst prisoners, targeting a reduction in recidivism of 25% in 4 years[12]. In late 2017 the Corrections Minister admitted that after spending $190m on rehabilitation, a reduction of only 4.4% had been achieved[12]. The cost of imprisonment is NZ$90,000 per person per year[12].

Prohibition of substance use has a history of being ineffective, of note the prohibition of Opium consumption in China in 1729 was followed by a steady rise[12] in consumption for the subsequent 200 years.

Potential Approaches

Public health is best served by regulation, harm reduction, evidence-based policies and equitable access to both justice and healthcare. Unregulated markets for substances with misuse potential are harmful[12]. Māori require specific attention to redress inequities in a culturally appropriate manner.

An example of modern drug law is that of Portugal[12]. Possession of substances for personal use was decriminalised with direction to treatment for minor offences. Substance use rates have remained approximately stable and treatment has increased. Thus, public health has improved alongside an increase in individual freedom.

New Zealand's Drug Foundation has proposed a Model Drug Law[12]. The title, "Whakawātea te Huarahi" means "clearing the road ahead", indicating a trajectory towards better public health and social justice.

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Public Health Issue: Changing Use and Harms of Methamphetamine Use in New Zealand.

Word count 598

Introduction

Methamphetamine use is apparently increasing, however this is difficult to measure. There is no unified treatment pathway and state approaches are seen a punitive.

Epidemiology

In 2015-20016, 1% of New Zealand adults reported use of "amphetamines" at least once in the year[12]. Analysis of New Zealand wastewater in 2017 indicated methamphetamine consumption of around 400mg per day per 1000 of population[12]. The fall in street price and increase in availability of methamphetamine is also suggestive of increased levels of use[12]. In New Zealand the 10% of users who are dependent consume 90% of total methamphetamine, and the costs associated with individual harms alone are $184,000 per user[12].

Literature

The harms of Methamphetamine include physical and mental health problems and social harms. Evidence does not support pharmacotherapy for methamphetamine use disorder[12] but focusses upon management of secondary consequences, brief intervention, harm reduction measures, motivational interviewing, managed withdrawal and relapse prevention[12].

In 2009 the Government introduced "Tackling Methamphetamine: An Action Plan"[12], with a focus upon policing, including remediation of methamphetamine-contaminated properties. The rate and harms of methamphetamine use and were not clearly defined in advance. The progress report six years later[12] cited that most goals were complete.

In 2018 the threshold for methamphetamine-contamination of homes was shown to be too low by tenfold[12]. In the 2017-17 financial year, 850 Housing New Zealand (HNZ) properties were decontaminated at an average cost of $9000 per property. Tenancies were suspended in 365 cases.

In response to an official information request after the practice was ceased, HNZ cited not health risk but criminality as the reason for tenancy suspensions[12].

Potential Approaches

Quality data collection is a prerequisite for a public health based strategy, this is difficult in a context of stigma and criminalisation. Useful outcome measures, reflective of the goals of clients and communities need to be developed. Community groups could be strengthened and upskilled,[12] with use of resources such as the "Alcohol and Drug Outcome Measure"[12], brief intervention and harm reduction tools and a pathway to specialist services. Implementing this health-based framework**Error! Bookmark not defined.** will be easier when legislation focusses on health outcomes and social inclusion.

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Public Health Issue: Harm Arising from Pharmaceutical Marketing Strategies.

Word count 589

Introduction

The commercial objectives pharmaceutical companies are at odds with public health. The example of gabapentin is reviewed here.

Epidemiology

The pathway from pharmaceutical advertising to health outcome is complex[12]. New Zealand is one of only two countries allowing direct-to-consumer advertising (DTCA)[12]. It is established that DTCA targets vulnerable clients and results in requests for medication being prioritised ahead of healthy lifestyle measures[12], and has no positive contribution on health outcome[12].

The death rate associated with gabapentin has risen over tenfold[12] [12] overseas. Concerns are rising regarding harms in New Zealand as restrictions on access to gabapentin have been lifted[12].

Literature

Gabapentin has been marketed for the treatment of anxiety despite no evidence base for efficacy, and increasing indications of harm**Error! Bookmark not defined.** [12] [12] [12]. Pfizer has twice been fined billions of dollars for marketing gabapentin for off-label indications[12].

A study comparing trends in the USA and Canada showed that DTCA led to increased requests for prescriptions and increased prescribing despite physician ambivalence[12].

Another example of aggressive marketing strategies is promotion of oxycodone by Perdue, described as a “commercial triumph, public health tragedy” [12]. Pfizer’s DTCA of celecoxib continues in New Zealand[12] despite safety concerns and the availability of safe, cheaper alternatives.

Potential Approaches

DTCA could be discontinued as there is no evidence of benefit. Universal access to affordable primary healthcare funded for the delivery of health outcomes would be beneficial. Healthy legislation should cover ability to patent, set prices, trade and advertise products.

Pharmac, the national drug purchasing agency, has a strong positive role in limiting the influence of pharmaceutical companies in marketing to health providers.

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Public Health Issue: Substance-Impaired Driving in New Zealand

Word count 598

Introduction

The relationship between legislation on substance impaired driving and road safety is complex, and attempts to improve safety require a sound scientific basis.

Epidemiology

In 2014, New Zealand's road fatality rate was the 9th highest in the OECD[12]. In 2017, alcohol or drugs were a contributing factor in 123 fatal crashes[12]. There were over 25,000 drink-driving convictions and 500 drug-driving convictions in New Zealand in 2018[12].

Literature

Alcohol has linear pharmacokinetics and is easily detectable, with risk of harm correlating to serum alcohol level[12]. In New Zealand, the Compulsory Impairment Test is still the main mechanism for detection of other impairing substances, supported by evidential blood testing.

In 2015 the UK introduced "*per se*" laws[12] in regard to driving, allowing conviction based on the presence of impairing substances even if no accident has occurred and no impairment demonstrated. The levels set are based upon a zero-tolerance approach for illegal drugs, and risk-based for medications. The law is supported by roadside saliva testing. In the first three years after the law was introduced, 25,000 motorists failed the roadside test[12], representing 43% of the total tested based. Drug-driving arrests soared by 800% in the first year, and 98% of positive tests resulted in a conviction[12]. Early statistics indicate that road fatalities rose slightly in the year following the law change[12].

Any law involving the setting of levels of tolerance for substances must avoid scientific pitfalls. Clinically relevant levels of substances often change when a different type of test is used. Changing evidence regarding the risk associated with substances must be accommodated. Emerging and novel

substances must be accounted for. Most of the substances involved have non-linear pharmacokinetics and exert a variable effects on individuals. The effects of polypharmacy, fatigue or other co-morbidities cannot be accounted for through *per se* levels. Impairment does not necessarily correlate to peak serum levels for a substance nor does it respect the difference between prescribed and illicit substances[12].

Potential Approaches

Ideally, a Public Health-informed approach would create safer roads in manner which can be fairly and sustainably policed.

The current New Zealand approach has the advantage of being risk-focussed rather than being against the use of drugs *per se,* and avoids the above pitfalls though is a weaker tool for enforcement. Access to roadside drug testing could support current enforcement and inform future legislation.

Coronial data regarding substances involved in deaths is not reported directly in New Zealand, this could inform policy and education. Social change away from driving while substance-affected could be supported by educational advertising and by the availability of adequate public transport.

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Public Health Issue: Social Inequality in New Zealand

Word count 579

Introduction

A reductionist approach to drug treatment and health in general does not take into account the multiple disadvantages faced by the impoverished. Treatment models must extend beyond silos and medicalisation[12].

The effect of social inequality on health was encountered in client H, a 26 year old Māori man who grew up in a deprived neighbourhood adjacent to the prison, where his father was detained. His mother taught him to inject at the age of eight. Although highly intelligent, he did not complete schooling and is unemployed. He has been in prison several times for drug-related offences, never able to receive community sentences due to homelessness. He has harms from poorly-healed injuries, blood-borne viruses and recurrent psychotic episodes but does not access any consistent healthcare.

Epidemiology and Literature

New Zealand is a wealthy nation and yet, many health outcomes are significantly poorer than countries of comparable wealth. These include the rates for suicide[12] [12], domestic violence, child homicide, road fatalities and imprisonment[12]. In all of these indicators, the vulnerable groups are worst affected - notably youth and Māori. Rising inequality is occurring in the context of a rising average household income and growing economy. There has been a slow, steady rise in the income gap between those on the 80th and 20th centiles of income, and this effect is amplified by the relatively higher proportional cost of housing borne by the lower decile group[12]. Children whose fathers are in prison have been shown to have increased rates of physical health problems, difficulties at school and an increased likelihood of future imprisonment**Error! Bookmark not defined.**.

Potential Approaches

Effective drug treatment approaches require addressing the “toxic mix” [12] of adversity which underlies substance use. A good public health environment[12] will identify the vulnerable and intervene early. A pro-active child welfare department should be trusted by families to give support. The recent re-structuring of the former Child Youth and Family Service as “Oranga Tamariki” is intended to re-emphasise the provision of comprehensive care[12].

Healthy communities require social inclusion and employment opportunities in addition to accessible primary healthcare. The goal must be equitable outcomes not equal access. Professional skill development will come through training of not only healthcare workers but also social work and law enforcement agencies. Law enforcement could involve direction to treatment rather than punishment for groups facing inequality. In regard to the imprisonment of multiple generations of Māori men[12], there is a specific Treaty of Waitangi obligation to be met[12].

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