Community Dental Health (2013) **30,** 68–70
Received 18 January 2013; Accepted 24 March 2013

doi:10.1922/CDH_3161Jones03

Dental Public Health in Action

Advice on Methadone and Oral Health: Dental Public Health in Action

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Key words: *oral health, dental health education, dental health services, methadone, opiate substitution treatment, press reaction*

Public health competencies illustrated

1. Oral health promotion specifically targeted for marginalised groups to provide patients prescribed methadone with effective, evidence based advice on maintaining their oral and general health;
2. Written communication;
3. Multidisciplinary working;
4. Oral health inequalities.

Introduction

In Scotland during 2010-2011, there were 533,733 prescriptions dispensed for methadone (S4W-988, written question, Scottish Parliament, 14th July 2012). Figure 1 shows a steady increase in methadone prescriptions over the last 8 years. Please note that despite prevailing national media stereotyping, considerably less than 10.2% (533,733/5,254,800) of the Scottish population is actually prescribed methadone (General Register Office for Scotland, 2012). Individuals may have more than one prescription and therefore the number of dispensed items each year, is not the number of individuals on methadone treatment. Indeed the increased number of dispensed items may reflect better care of patients with opioid dependence who have entered an evidence based package of care, treatment and recovery. The increase may also be due to improved pharmacy supervision in line with good practice and the drug misuse and dependence UK guidelines on clinical management.

Of the 22,224 people receiving methadone treatment for drug misuse in Scotland, 1,093 were in the care of the Scottish Prison Service. Published estimates, which exclude prisoners, indicate that in 2004 there were 19,227 individuals receiving prescriptions for methadone in Scotland (Scottish Government, 2007). Methadone treatment in England in 2004 accounted for 1,954,700 individual items prescribed. In the UK the estimated prevalence of problem drug use is 9.35 per 1000 population aged 15–64 years (360,811 people), and that 3.2 per 1000 (123,498 people) inject drugs (NICE 2007).

Initial impetus for action

One author, (GI, then an undergraduate) in 2011, found that patients attending Dundee Dental Hospital who were prescribed methadone, reported that they had never previously received oral health advice. After discussion with local pharmacists and General Medical Practitioners, it became clear that those health professionals dispensing methadone felt uncomfortable providing oral health advice as they reported that they were unqualified to do so. After raising the issue as a vocational dental practitioner, national development and distribution of an information leaflet was chosen as the preferred method of delivering a preventive message. This was because it could be easily sent as a digital PDF file to many healthcare professionals at once, even to remote areas such as the Western Isles of Scotland, and could be easily displayed/presented in a clinical setting with other information leaflets and used as a cue to discuss dental health. The intention was not only to help to educate methadone patients, but also provide a way in which other healthcare professionals who are not dentally qualified could give sound evidence-based dental advice confidentially.

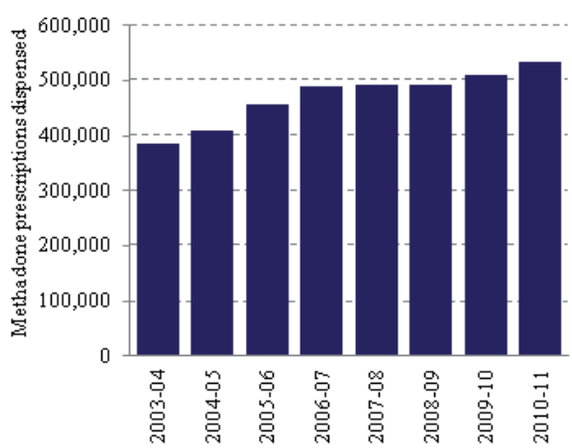

Figure 1. *Number of methadone prescriptions dispensed annually by the NHS in Scotland, 2003/04 to 2010/11*

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Methadone is very commonly prescribed in the care and treatment of people with opioid, typically heroin, dependence (British National Formulary, 2012). The successful management of opioid dependence is complex and requires medical, social and psychological care with a multidisciplinary team approach being recommended. A harm reduction approach is used with substitution of methadone for illegal and often contaminated opioids. Methadone treatment has been well researched internationally and found to be highly effective in improving the health of people with drug dependency problems (NICE, 2007). It stabilises their lives, reduces their offending behaviour, enables progress to be started on getting back into employment, creates a more stable living environment for their families and makes communities safer from drug-related crime. It has also been shown that prescribed methadone and being in drug treatment are protective factors against drug-related deaths. However, it forms only part of a holistic treatment programme which may even include accommodation and welfare help. Methadone can be the first step to full recovery and is a cost effective intervention (Farrell *et al.*, 2012; NICE, 2007).

Opioid drug users should be supported on their optimal dose of methadone and have the opportunity to reduce this dose only when they feel ready and with the support of well trained staff. Having a dentist in the multi-disciplinary team helps methadone users in rehabilitation and minimises risks to their oral health through adopting an holistic approach (Nathwani and Gallagher, 2008). The dentist must remain non-judgmental, as for any other medical condition. Therefore the treatment aims of the dental practitioner in caring for people with opioid dependence must be congruent with the aims of that multidisciplinary team and this includes adherence to the prescribed methadone regime.

Opiates such as heroin and morphine act on specific receptors in the brain, releasing dopamine. Untreated heroin dependence shows early withdrawal symptoms within 8 hours, with peak symptoms at 36–72 hours; symptoms subside substantially after 5 days. Methadone is a synthetic long-acting agonist for the receptor and is used for maintenance therapy. Methadone prevents cravings while blocking the euphoric effects of heroin, allowing abstinence from the illegal and potentially dangerous drugs.The use of methadone is a harm reduction approach and it should be recognised that methadone is itself addictive (British National Formulary, 2012).

Methadone is typically prescribed for use orally as a daily single dose in viscous syrup form to prevent intravenous use. Previous reports have blamed the use of methadone syrup containing sugar, plus reduced secretion of saliva, as the cause of extensive caries (Brondani and Park, 2011). An alternative explanation for dental caries in opioid drug users is neglect of oral hygiene with reduced or minimal use of fluoride toothpaste, an increased craving for sugary foods (Nolan and Scagnelli, 2007; Zador *et al*., 1996) and direct analgesia of dental pain by the original heroin abuse. A recent systematic review has found no evidence that sugar free methadone reduces dental caries experience (Tripathee *et al*., 2012).

Solution used

Early in 2012 a multidisciplinary group, convened by the Deputy Chief Dental Officer for Scotland, used an iterative process by e-mail to refine the messages and layout of a leaflet on oral health and methadone use. Copies of existing methadone advice leaflets were collected from across Scotland, none of which met Royal National Institute for the Blind standards (RNIB 2011). The group accepted that a more contemporary looking leaflet could be created; using up-to-date evidence, which would be distributed to all health boards instead of individual boards having to create their own leaflets. The multidisciplinary group then used an iterative process by e-mail, with tight timescales, to refine the messages and layout of the draft leaflet. Strict version control was needed to ensure success in this process. Disciplines represented included a Consultant in dental public health, general dental practitioners, special needs dentists, pharmacists, and a team specialising in leaflet design and distribution. Initial discussions took place around the evidence base for advice given in the leaflets. One matter that was stressed is that as a prescribed medication, methadone should be taken as instructed, just as patients should do with all prescribed medicines. Taking methadone once a day should not cause new dental problems. Dental problems are more likely to be side effects of having previously taken other drugs, including heroin.

Routine advice on toothbrushing with fluoride toothpaste applies to everyone with natural teeth and methadone users are no different in this respect from the remainder of the population. They were advised to brush before going to take their daily dose of methadone (if under supervision) and to drink plain water immediately after swallowing the methadone. This advice accords with the guidance to pharmacists to make sure that supervised patients drink water immediately after taking methadone. This supervised process may help prevent regurgitation of the dose of methadone, which could then be illegally sold.

Using circular or gentle scrubbing and brushing movements along the gum line was advocated and the importance of brushing again before going to bed reinforced. If bleeding of the gums occurs while brushing, the advice is not to stop brushing but go and see your dentist.

The anti-cholinergic effect of some drugs, including methadone, can induce thirst. Advice given was: drinking plain water helps with a dry mouth; it is best to avoid fizzy drinks as these may contain sugar - causing decay; and if your mouth feels dry, go and see your dentist who can help and may prescribe toothpaste with more fluoride to prevent tooth decay.

Advice to attend a dentist regularly was given with the benefits described as; addressing any dental pain, medical history confidentiality, improvements in the appearance and function of their teeth and to check their mouth for any other problems. These were identified as issues that patients may face once maintained on methadone and were stressed as part of the multidisciplinary rehabilitation for patients.

The leaflet also reminded patients that NHS dental treatment is free (in Scotland) if they are under 18 years old or in full-time education, pregnant or have a child less than 12 months old before treatment starts. It is also

free for individuals who receive a wide range of statutory benefits or whose family partners receive the same. This information was included to show that dental care may be free and therefore encourage attendance at a general dentist.

Methadone may contain sugar and the leaflet gave dietary advice aimed at encouraging eating more fruit and vegetables. Bread, potatoes and pasta were promoted to encourage a healthier diet. Trying to keep sugary foods and drinks to mealtimes was reinforced. Patients were informed that they need only use a fluoride mouthwash if their dentist so advised them and to ensure it was alcohol-free. The alcohol-free message was reinforced through further encouragement of patients to reduce their overall alcohol consumption and additionally, with regards to both patients oral and general health, a non-smoking message was strongly advocated. The number of the free confidential drug and advice line was added plus the NHS helpline for people trying to find a local dentist.

Other specific advice was reviewed which might apply to methadone users. For instance, use of sugar-free chewing gum was advised in some older leaflets, but there were no systematic reviews of this as a preventive intervention in this group. Similarly it is xylitol which is thought to have an independent caries preventive effect, but most of the leaflets mentioned only sugar-free gum (Hildebrandt and Lee, 2004). Because there was no strong evidence that sugar-free chewing gum was effective after taking methadone, this was excluded.

The final leaflet is available at www.healthscotland.com/documents/5816.aspx

Actual outcome

The leaflet was published and distributed in Autumn 2012. A first run of 25,000 copies was printed and 24,400 were distributed to selected pharmacies, dispensing GPs and dental services across Scotland. Patients have reported that the leaflet was well laid out and easy to understand.

In early 2013 a second print run of 20,000 copies was undertaken as the original stock had been exhausted within a few months owing to high demand for the leaflet from Health Boards. The leaflet was also included in routine prisoner release packs from some prisons because of the general advice on oral health and how to find a dentist.

The leaflet has been reported as successful by many healthcare professionals, but one adverse press report seemed to give an opinion that the project was financially inefficient (Daily Record, 2012). At a cost of less than three pence per leaflet, the report seems to be unsubstantiated by the facts and, thus, unreliable as a conclusive statement on the leaflet's cost-effectiveness. A press officer from NHS Health Scotland contacted the journalist seeking a correction. But to our knowledge none was ever made. No further action is planned on this issue.

Challenges addressed

1. During design of the leaflet, strict version control was required during email communications between contributors.
2. Only advice supported by robust evidence was used.
3. Clear and concise layout had to be achieved, whilst adhering to NHS printing guidelines.
4. There was one adverse tabloid press report which is discussed.

Future implications

1. Increased communication and education across professions is helpful. For example, between dentists and pharmacists.
2. National distribution of the leaflet may provide a cost-effective way of educating patients and other healthcare professionals alike.

Learning points

1. Methadone patients may require individually tailored oral health advice in light of their circumstances.
2. Cessation of methadone should only be implemented by the patient's General Medical Practitioner.
3. No evidence yet exists supporting the claim that sugar-free methadone reduces dental caries experience.

References

British National Formulary (2012): www.bnf.org/bnf/index.htm

Brondani, M. and Park, P.E. (2011): *Methadone and oral health – a brief review*. *Journal of Dental Hygiene* **85**, 92-98.

Daily Record (2012): www.dailyrecord.co.uk/news/health-news/2012/04/18/revealed-nhs-chiefs-publish-guide-telling-methadone-users-how-to-brush-their-teeth-86908-23828405

Farrell, M., Wodak, A. and Gowing, L. (2012): Maintenance drugs to treat opioid dependence. *British Medical Journal* **344**, e2823.

General Register Office for Scotland (2012): *Mid-2011 population estimates Scotland*. www.gro-scotland.gov.uk/statistics/theme/population/estimates/mid-year/2011/tables.html

Hildebrandt, G. and Lee, I.K. (2004): Xylitol containing oral products for preventing dental caries. *Cochrane Database of Systematic Reviews*, Issue 1.

Nathwani, N.S. and Gallagher, J.E. (2008): Methadone: dental risks and preventive action. *Dental Update* **35**, 542-544, 547-548.

NICE (2007): Methadone and buprenorphine for the management of opioid dependence. *TA114*. London: National Institute for Health and Clinical Excellence, 2007.

Nolan, L.J. and Scagnelli, L.M. (2007): Preference for sweet foods and higher body mass index in patients being treated in long-term methadone maintenance. *Substance Use & Misuse*, **42**, 1555–1566.

RNIB (2011): Clear print guidelines. www.rnib.org.uk/professionals/accessibleinformation/text/Pages/clear_print.aspx

Scottish Government (2007): Review of Methadone in Drug Treatment: Prescribing Information and Practice. www.scotland.gov.uk/Resource/Doc/180406/0051268.pdf

Tripathee, S., Akbar, T., Richards, D., Themessl-Huber, M. and Freeman, R. (2012): The relationship between sugar-containing methadone and dental caries: A systematic review. *Health Education Journal* published online ahead of print.

Zador, D., Lyons Wall, P.M. and Webster, I. (1996): High sugar intake in a group of women on methadone maintenance in South Western Sydney, Australia. *Addiction* **91**, 1053–1061.