

Opioid substitution treatment in Finland and other Nordic countries: Established treatment, varying practices

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Introduction¹

Substitution treatment programmes were launched in Finland in 1997 in response to the increase of HIV infections in the 1990s, related to increasing abuse of opioids and other drugs. Since then, the objectives and practices of treatment have been under continuous change in our country (Selin, Hakkarainen, Partanen, Tammi & Tigerstedt, 2013). Recent developments, such as establishing harm reduction-oriented substitution treatment as an option to rehabilitation, has raised some concern about treatment becoming routine-like administration of medication without the psychosocial rehabilitation that constitutes the foundation for substance abuse treatment (Table 1). In addition, the general pressure to improve the cost-efficiency of substance abuse services has given rise to concern, as this is considered to lead to too limited treatment practices (Perälä, Hellman, Lepo, 2013). However, knowledge of the actual developments of opioid substitution treatment is still fragmentary.

The Nordic countries have similar welfare systems, and their substance use cultures are relatively similar in an international context. Therefore, comparisons between Nordic countries may cast light on the functioning of the Finnish treatment system. In this article, we first briefly discuss the history of substitution treatment and drug abuse treatment policies in the Nordic countries. Then we picture the coverage and extent of treatment and different patient groups in these countries. Next, we describe the objectives and quality of treatment in each country, focusing on national guidelines on treatment practices. Finally, we discuss the treatment systems from the point of view of discontinuation rates and mortality rates during treatment. The comparison of treatment systems is flexibly based on the conceptual model of Babor, Stenius, and Romelsjö (2009) on treatment systems. In this model, characteristics of treatment systems (e.g. efficiency, fairness), treatment policies, structural

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Table 1. Harm reduction and rehabilitation as treatment aims in opioid substitution treatment.

The Finnish decree on the treatment of opioid dependent persons (33/2008) defines substitution treatment in terms of its aims: "aim is either rehabilitation and abstinence or harm reduction and improvement in the patient's quality of life". The usage of terms "rehabilitative substitution treatment" and "harm reduction" in the article ascend from this Finnish vocabulary, but they are also used to analyse treatment systems in other Nordic countries. This is justifiable, because the terms reflect two major approaches in international drug treatment policies: one emphasising abstinence as the ultimate treatment aim and the other improvements in the quality of life and the reduction of harms related to drug use.

resources (e.g., treatment methods) and patients' social and health status are considered to affect the treatment outcomes. Our sources include mainly studies and reports on national drug abuse policies in Nordic countries; substitution treatment regulations and treatment guidelines; surveys and reports on substitution treatment; and Nordic and international research literature relating to substitution treatment. In addition, we asked the authorities in each country, or the institutes that are responsible for nationwide collection of data, to provide such information on substitution treatment that was not available from other sources. Thus, the article also provides new information. Data was collected in 2014.

Substitution treatment in Nordic countries

Today, substitution treatment of opioid dependence is an established part of national drug abuse treatment systems in all Nordic countries. The number of patients receiving substitution treatment is significant in each country and has been continuously increasing lately, with the exception of Denmark where developments were earlier (The European Monitoring Centre for Drugs and Drug Addiction [EMCDDA],

2013a). In addition, criticism on substitution treatment has become less intense and substitution treatment has become not only a part of normal discourse in Nordic substance abuse and opioid treatment services, but more and more frequently the key topic of general discussion on substance abuse treatment (Skretting & Rosenqvist, 2010).

The expansion and establishment of substitution treatment have followed different patterns in each country, which also reflects differences in treatment policies between the countries. Moreover, there are many differences related to treatment and treatment practices. Denmark has been providing opioid treatment since the 1960s, and the treatment practices are more customer-driven compared with the other Nordic countries (Thom, Duke, Assmussen & Bjerge, 2013; Assmussen, 2006). In March 2009, Denmark initiated heroin substitution treatment, which can be considered as a radical move in the Nordic context (Sundhedsstyrelsen, 2013a).

Until recent years, Sweden and Norway have considered substitution treatment as 'an exception to the rule', with the basic rule being rehabilitation without medication. Sweden still applies strict rules to the implementation of substitution treat-

ment, and strict criteria to admission to treatment with evidence of long-term opiate abuse (Skretting & Rosenqvist, 2010). Swedish substitution treatment is like a mirror image of the Swedish drug policy, which takes a very strict approach to the drug problem and is based on the idea of total abstinence as the goal of treatment (Ekendahl, 2009). Finland and Norway both have what has been called a dual track policy (Tammi, 2007), with strict drug policy but elements of harm reduction in drug treatment.

The Finnish and Norwegian substitution treatment policy can be placed in the middle ground between Sweden and Denmark. Finland initiated substitution treatment in the 1990s, which was relatively late. It was met with strong resistance at first, and similar to Sweden and Norway, the admission criteria were then strict. In the 2000s, however, Finland has considerably eased these criteria compared with Sweden. Harm reduction in addition to rehabilitative treatment is now emphasised more strongly (Skretting & Rosenqvist, 2010).

What is common for all Nordic countries is the government's role as the financier and organiser of the treatment, as well as differences in opinions on substitution treatment between the social and health care sectors. In Finland and the other Nordic countries, the expansion of substitution treatment has led to critical discussion on the 'medicalisation' of treatment and the minor role of psycho-social care (Thom et al., 2013; Perälä et al., 2013).

Coverage of substitution treatment, number of patients and patients' sociodemographic background in Nordic countries

The reliability of estimates of the number of problem opioid users² (Table 2) varies between the Nordic countries. For example, only an estimate of the number of injecting drug users (13,000) is available from Denmark, but no estimate of the number of opioid problem users (Sundhedsstyrelsen, 2013b). For Finland, there is an estimate available that is based on data from 2012, according to which Finland has 13,000–15,000 problem opioid users (Ollgren et al., 2014). The Swedish Socialstyrelsen provides an exact figure (7,237), based on recorded opioid dependence diagnoses of clients of social and health care services and previous estimates on the number of abusers (Socialstyrelsen, 2012). The reliability of the Swedish figure may be compromised for the reason that many problem drug users, in fear of stigmatisation, do not seek treatment at all or conceal their drug abuse when using social and health care services (EMCDDA, 2012a). In the Nordic countries, the estimated number of problem opioid users (particularly users of opiates, such as heroin) is thus highest in Finland, Denmark, and Norway and lowest in Sweden and Iceland. What is specific for Finland is that the most abused opioid is buprenorphine (Forsell & Nurmi, 2013).

The number of patients in substitution treatment varies greatly (Table 2). In Denmark, the number of patients has fallen from 7,850 in the peak year 2010 to 7,600 patients in 2011 (EMCDDA, 2013a). It seems that Denmark is going in a different direction than the other Nordic countries,

Table 2. Number of opioid substitution treatment patients, problem opioid users, and coverage of treatment.

Variable	Finland ¹	Sweden ²	Norway ³	Denmark ⁴	Iceland ⁵
Number of patients	2,439	5,252	7,038	7,600	90–100
Units	161	114	n.a.	58	1
Problem opioid users* (share of pop.)	13,000–15,000 (0,24–0,28 %)	7,237 (0,07 %)	9,450 (0,18%)	13,000 (0,23 %)	200 (0,06 %)
Coverage	16–19%	73%	74%	n.a.	appr. 50%

* Estimates of the numbers of opioid problem users in different countries are based on varying methodologies.

¹ Data for Finland from 2011 (Partanen et al., 2014), except the estimate of problem opioid users, which is from 2012 (Ollgren, 2014). The coverage estimate is based on the ratio between the estimated number of problem opioid users and the number of substitution treatment patients.

² Data for Sweden from 2012 (Socialstyrelsen, 2012). The estimate of the number of patients is based on the number of diagnosed opiate dependence cases entered in the official registers.

³ Data for Norway from 2012 (Waal et al., 2013), except the estimate of problem opioid users, which is from 2008 (EMCDDA 2013c). The coverage estimate is based on the ratio between the estimated number of problem opioid users and the number of substitution treatment patients.

⁴ The data for Denmark from 2011 (number of patients) and 2006 (estimated number of injecting drug users) (Sundhedsstyrelsen, 2013b). There is no data on the exact number of opioid abusers, but it is estimated that most injecting drug users are opioid users (Sundhedsstyrelsen, 2013b).

⁵ Data from 2013 (V. Rúnarsdóttir, personal communication, 7 March, 2014). The number of problem opioid users includes both injecting drug users and other abusers of pharmaceutical opioids.

where the number of patients is on the increase. The probable reason for this is that Denmark officially initiated substitution treatment as early as the 1960s and expanded it strongly in the 1980s and 1990s – that is, at a time when the other Nordic countries were still only planning the implementation or controlled expansion of substitution treatment (Skretting & Rosenqvist, 2010; Houborg, 2012). The rapid increase in the number of patients in Norway is worth mentioning: there were 2,431 patients in substitution treatment in 2003, 5,058 in 2007 and as many as 7,038 in 2012 (EMCDDA, 2013a; Waal, Bussesund, Clausen, Håseth, & Lillevold, 2013). Also in Sweden there has been a considerable increase during the last ten years.

Based on the estimated number of problem opioid users and the number of patients in substitution treatment, it is possible to make rough estimates of the coverage of substitution treatment in the Nordic

countries (Table 2). According to relatively recent surveys conducted in Sweden and Norway, there are considerable regional differences in coverage (Socialstyrelsen, 2012; Waal et al., 2013). Detailed regional figures are not available for Finland and Denmark, but in Finland at least it is quite possible that there is considerable variation in regional coverage (Partanen, Vormaa, Alho, & Leppo, 2014). In Finland the coverage seems to be lower compared with the other Nordic countries. It should also be noted that the estimate of the number of problem opioid users in Finland is not directly comparable with other Nordic countries.

In prisons, Norway and Denmark offer the most extensive substitution treatment services. In Norway, the number of prisoners receiving treatment has also increased rapidly, from 766 patients a year in 2011 to 922 in 2012 (EMCDDA, 2013c; Helsedirektoratet, 2013). In Finland and Sweden, the

Table 3. Substitution treatment patients in Nordic countries.

Variable	Finland ¹	Sweden ²	Norway ³	Denmark ⁴	Iceland
Mean age (yrs)	34	n.a.	42	n.a.	n.a.
Women	31%	27%	30%	23%	n.a.
Only basic education or less	62%	n.a.	62%	51%	n.a.
Employed	7%	n.a.	15%	7%	n.a.
Homeless	4%	0%	3%	3%	n.a.

¹ Data for Finland from 2012 (Forsell & Niemi, 2013).

² Data for Sweden from 2012 (Socialstyrelsen, 2012).

³ Data for Norway from 2012 (Waal et al., 2013), except the education data, which was obtained from a follow-up study conducted in 1998–2009 (Lauritzen et al., 2012).

⁴ Data for Denmark on patients who initiated treatment in 2010–2014 (K. Frederiksen, personal communication, 21 February, 2014). In addition, 20.8% of the patients belonged to category 'no education or education unknown'. Thus, the percentage of those with only basic education is probably higher than the figure in the table indicates.

number of prisoners in treatment is still very low (Partanen et al., 2014; EMCDDA, 2013c).

The socio-demographic background of substitution treatment patients seems to be largely similar in all Nordic countries (Table 3). The oldest patients are found in Norway, where nearly 90% of them are at least 31 years of age (Waal et al., 2013). The proportion of women is lowest in Denmark, only approximately 23% (K. Frederiksen, personal communication, 21 February, 2014) and highest in Finland, 31% (Forsell & Nurmi, 2013). Clearly over half of the patients in each country have completed only basic education or less. Employment rates are also very low. Norway has the highest employment rate, 15% (24% in Central Norway) (Waal et al., 2013). Homelessness is not very common. In this context, 'homeless' refers to people who have been labelled as homeless in statistics. It is possible that the number of homeless is actually higher, either because of missing data or for reasons such as imprisonment or institutional care at the time of collecting data. In Sweden, the virtually

zero homelessness rate is explained by the fact that you cannot be admitted to substitution treatment without a permanent address (Petersson, 2013). In a Finnish 12-year follow-up study of clients of drug abuse services at the Helsinki Deaconess Institute, 27% (n=780) of patients who had sought treatment due to buprenorphine abuse were homeless (Uosukainen et al., 2013). This figure is many times higher compared with nation-level data on clients of drug abuse services, according to which 4% of substitution treatment clients were homeless (Forsell & Nurmi, 2013). It seems that in Finland, the percentage of homeless is lower among substitution treatment patients than among other patients who have sought treatment for opioid abuse.

Objectives and quality of substitution treatment in Nordic countries

According to the decree that entered into force in Finland in 2008 (33/2008), substitution treatment may involve detoxification aiming for substance-free life; reha-

Table 4. Objectives and content of substitution treatment in Nordic countries.

Variable	Finland ¹	Sweden ²	Norway ³	Denmark ⁴	Iceland ⁶
Treatment aim	Rehab./ Harm red.	Rehab.	Rehab./ Harm red.	Harm red./ Rehab.	n.a.
Waiting time (wks)	max. 12–24	6–8	3–12	2	n.a.
Preconditions					
Age limit (yrs)	none	20	none	none	n.a.
Dependency	Opioid/opiate	Opiate	Opioid/opiate	Opioid/opiate	n.a.
Duration of dependency	none	12 months	none	none	n.a.
Commonest reason for discontinuing	n.a.	Involuntary	Voluntary	Voluntary	n.a.
Medications					
<i>methadone</i>	38%	45%	44%	82%	5%
<i>Buprenorphine products</i>	62%	51%	56%	18%	95%

1 Data from 2011 and 2012 (Partanen et al., 2014, Kuljukka et al., 2014).

2 Data from 2012 (Socialstyrelsen, 2012).

3 Data from 2012 (Waal et al., 2013).

4 Data from 2011 (EMCDDA, 2013f).

bilitative substitution treatment aiming for rehabilitation and substance-free life; or substitution treatment aiming for harm reduction and improved quality of life. Even though the implementation of substitution treatment in Finland is regulated by a decree and Current Care Guidelines on substitution treatment exist, Finland does not have national-level handbooks specifying the content of treatment in detail as in Norway, Denmark and Sweden (Helsedirektoratet, 2010; Sundhedsstyrelsen, 2008; Socialstyrelsen, 2015). However, local or regional guidelines are in place.

According to the data collected by the Kuusikko working group established by the six largest local authorities of Finland, the costs of substitution treatment in 2012 totalled EUR 7.8 million (EUR 5,056 per patient) (Kuusikko-työryhmä, 2013). Waiting times for substitution treatment have become shorter in Finland over the years,

but there is local variation. Maximum waiting times may be 12 to 24 weeks, within the limits set by the maximum waiting time guarantee applied in basic health care and specialised medical services (Kuljukka, Niskala, Partanen, Kuusaaari, & Vormaa, 2013).

In Finland, the use of buprenorphine products as medication is more common than in the other Nordic countries, at the same time as abuse of buprenorphine products is the most common reason for seeking substitution treatment (Table 4).

In Denmark, the country with the most liberal drug policy, substitution treatment aims for the reduction of harmful effects related to drug use. Local authorities are responsible for substitution treatment. Providers of medically assisted drug treatment and non-medical 'social treatment' (social-behandling) work in close co-operation. In Denmark, patients are guaranteed access

to treatment, and psychosocial treatment should be initiated within 14 days of the day when the client expressed his or her willingness to start drug abuse treatment. Substitution treatment is usually initiated at the same time. The criteria for admission to treatment include opioid dependence diagnosis, willingness to treatment expressed by the patient and an assessment of the unsuitability of alternative forms of treatment. Before treatment with buprenorphine products is initiated, the patient must have abstained from opioids long enough to experience first withdrawal symptoms. Upon the initiation of methadone, the patient must not be intoxicated. Thus, the threshold for initiating treatment is quite low. Methadone is usually administered on a daily basis as oral solution, tablets or intravenous injections. Take-home doses are also possible. Patients inject intravenous methadone themselves. This treatment is only for patients with long-term abundant intravenous use of drugs during the substitution treatment. The treatment of a violent patient may be terminated, but in this event, the patient must be referred to other services that guarantee the continuation of medical treatment (Sundhedsstyrelsen, 2008). Methadone is by far the most common medication, and only 1,400 patients (18%) are receiving buprenorphine or a combination product that contains buprenorphine and naloxone, although, similar to the other Nordic countries, Danish guidelines recommend buprenorphine products as the primary medication for substitution treatment. Denmark is different from the other Nordic countries in that heroin treatment is allowed. From April 2009 to December 2012, 252 people had received heroin

treatment (Sundhedsstyrelsen, 2013b).

In Norway, substitution treatment has two goals: improving patients' quality of life and supporting their functional ability, while reducing harmful effects and the risk of dying from an overdose (Forskrift om legemiddelassistert, 2009). Patients' own wishes are the basis for the determination of treatment objectives (Helsedirektoratet, 2010). The choice of treatment must always be preceded by assessment of the suitability of other treatments. In particular, the patient's age and the duration (according to ICD-10/DSM-IV) of opioid dependence must be taken into account when assessing the suitability of opioid treatment. Guaranteed access to treatment ensures that an assessment of the need for treatment is conducted within 30 week days (within 10 days for patients less than 23 years of age). After the assessment, a deadline is set by which the patient's treatment must begin. The deadline is based on the severity of the patient's situation. The waiting time varies from a couple of weeks to a few months. Patients are admitted to treatment relatively quickly (within three to 12 weeks) (Waal et al., 2013). Before the initiation of treatment, the patient must stop taking alcohol, benzodiazepines and hypnotics (Forskrift om legemiddelassistert, 2009). If the treatment is initiated with a buprenorphine product, at least eight hours must have passed since the patient's previous opioid dose and the patient must be experiencing mild withdrawal symptoms. At the beginning of treatment, the medication must be taken under supervision. For three months, the patient must come every day to pick up the daily dose. Take-home doses may be given for a week at the most.

For the first three months of treatment, drug screens are performed twice a week and then at least twice a year. Involuntary discontinuation of treatment is possible only in the event that the patient does not comply with safe treatment despite various control and support measures. Other treatment is offered to such patients. Treatment may be discontinued if the patient is violent or threatens with violence and is incapable of better self-control despite repeated attempts (Helsedirektoratet, 2010). The costs of substitution treatment in Norway in 2010 were estimated at EUR 10,855 (NOK 90,500) per patient per year (Waal, Clausen, Håseth, & Lillevold, 2011).

In Sweden, successful rehabilitation is the objective of treatment. According to the decree that came into effect in 2010, the preconditions for initiation of treatment are 20 years of age and a demonstrated history of at least 12 months of opiate dependence, that is, dependence of opium alkaloids and their derivatives obtained from the opium poppy, such as heroin, morphine or codeine. Users of synthetically produced opioids (such as buprenorphine) are not admitted to treatment. The age limit (20 years) can be disregarded for a weighty reason. In Sweden, patients are admitted to treatment within six to eight weeks on average. Treatment is initiated on the basis of a psychiatrist's examination conducted at a treatment unit that provides substitution treatment. Treatment cannot be initiated if the patient is addicted to alcohol or other substances that involve a medical risk. Patients whose substitution treatment was discontinued less than three months ago cannot be admitted to treatment. In addition, patients who are in involuntary treatment under the Act

on the Treatment of Alcoholics and Drug Misusers are not admitted. Prior to initiating treatment, a treatment plan is drafted in co-operation with the patient. At least for the first two months of treatment, the patient must each day take the medication under supervision at a specified location. Then the patient may be given take-home doses if the doctor decides that this is suitable (Läkemedelsassisterad behandling, 2009). For the first six months, the patient must give three supervised urine samples per week (Petersson, 2013). Treatment must be discontinued if the patient cannot promote the achievement of the goals. In addition, treatment may be discontinued if the patient skips treatment for more than a week, repeatedly takes drugs, uses alcohol in excess, manipulates urine samples, is convicted for a drug offence or an aggravated drug offence or repeatedly commits a minor drug offence during treatment (Läkemedelsassisterad behandling, 2009). The costs of substitution treatment in Sweden have been estimated at EUR 10,700 (SEK 100,000) per patient per year (Erikson, 2014).

In Denmark and Iceland, there is no data available on the dosages of substitution treatment medication. In Finland, the average daily dose of methadone is 102 mg and the average daily dose of buprenorphine products is 16 mg (EMCDDA, 2011). The doses are similar in Norway (Waal et al., 2013). In Sweden, too, most patients receive similar doses as Finnish patients: 83% of methadone patients receive 60–120 mg per day, and 87% of patients taking buprenorphine products receive 8–24 mg per day (Socialstyrelsen, 2012).

Table 5. Numbers of deaths during substitution treatment in the Nordic countries.

Variable	Finland ¹	Sweden ²	Norway ³	Denmark ⁴	Iceland ⁵
Number of patients	1,362	3,705	7,038	7,600	90–100
Deaths/year	19 (1.4%)	99 (2.7%)	84 (1.2%)	27 (0.3%)	n.a.

¹ Subnational data from 2013. The data of 2013 are based on a specific e-mail survey directed at the six largest local authorities. The number of patients covers only part of the patients treated by the local authorities that responded to the survey. Data were received from municipalities of Espoo, Helsinki, Tampere, Turku, and Vantaa. The figure includes all patients treated during the year.

² Data for Sweden from 2012 (Socialstyrelsen, 2012). The number of substitution treatment patients in the table is lower than the total number of patients in Table 1, which includes both the prescription register data and the number of patients obtained as a result of a telephone survey directed at treatment units. Known cases of death are based on substitution treatment patient data found in the prescription register.

³ Data for Norway from 2012 (Waal et al., 2013).

⁴ The number of patients in Denmark is based on data for 2011 (Narkotikasituation...2014) and the number of deaths is based on data for 2012 (K. Frederiksen, personal communication, 21 February, 2014).

⁵ Data from 2013 (V. Rúnarsdóttir, personal communication, 7 March, 2014).

Deaths and discontinuations during treatment

There are many similarities and some interesting differences between the Nordic countries in the goals and functioning of the treatment systems. Sweden has the most straightforward system: the treatment aims for total abstinence and patients who are unable of this cannot continue their treatment. The flip side of this is that the treatment of relatively many patients is involuntarily discontinued (in 2011, the treatment of 350 patients was discontinued and almost always involuntarily due to substance abuse). In addition, the mortality rate of Swedish substitution treatment patients is high: in 2011, a total of 99 patients died (Table 5). The high mortality rates of 2011 do not seem to be a statistical anomaly: there were 77 deaths in 2010 and 96 deaths in 2009 (Socialstyrelsen, 2012). According to the EMCDDA's definition, the total number of drug-related deaths include deaths resulting from accidental or intentional poisoning and mental dis-

orders due to drug use (Varjonen, Tanhua, & Forsell, 2014). In Sweden, there were a total of 239 deaths due to these reasons in 2011 and 269 in 2010 (EMCDDA, 2012a). The number of poisonings due to methadone has strongly increased in Sweden in recent years, but there are no clear signs of any connection between the increase and substitution treatment (Fugelstad, Johansson, & Thiblin, 2010).

The Danish system represents the most flexible way of implementing substitution treatment: patients do not have to wait long and the treatment is adapted to the patient's situation. Mortality in proportion to the number of patients is remarkably low (0.3%), but this reflects more the low-threshold nature of the Danish system than the actual level of mortality among substitution treatment patients. There were a total of 190 drug-related deaths in Denmark in 2011 and 222 deaths in 2010 (Sundhedsstyrelsen, 2013b). Denmark's discontinuation rate is similar to the other Nordic countries, but it should be noted

that in Denmark, discontinuation of treatment is mainly voluntary (K. Frederiksen, personal communication, 21 February, 2014).

In Norway, the system has become more flexible as a result of the decree that entered into effect in 2010. Treatment aiming for harm reduction has been established in addition to rehabilitative treatment. In Norway, where the overdose-induced mortality rate of heroin users has been very high even in international comparison (Simonsen et al., 2011), there were 84 deaths of substitution treatment patients in 2012, with 54 cases the year before (Waal et al., 2013). The total number of drug-related deaths in Norway was 248 in 2010 and 285 in 2009 (EMCDDA, 2012b). The number of treatments discontinued involuntarily has considerably decreased in Norway in recent years, from 250 cases in 2007 to 65 cases in the whole country in 2012 (Waal et al., 2013). Adherence to treatment was also high in 2012: of patients who were in treatment at the beginning of the year or started treatment during the year, 92% were still in treatment at the end of the year, and 95% of patients had never discontinued their treatment (Waal et al., 2013). The percentage of involuntary discontinuations of treatment by the treatment unit was low in Norway compared with Sweden, for example: 65 cases in 2012 (16% of discontinued treatments) and 39 cases in 2011 (8% of discontinued treatments) (Waal et al., 2013).

There is no comprehensive data available on the deaths during treatment or the discontinuations of treatment from Finland. According to data collected from Espoo, Helsinki, Tampere, Turku and Vantaa³ (Table 5), 19 substitution treatment pa-

tients (N=1,362) died in 2013 during treatment. There are probably many reasons for this relatively low number of deaths. It is probable that the Finnish opioid culture with buprenorphine as the main substance protects Finnish users to some extent, because the risk of dying from an overdose of buprenorphine is considerably lower compared with opiates (Uosukainen et al., 2013). In 2011, there were a total of 197 drug-related deaths in Finland, of which 165 were poisonings. In 2010, there were 156 drug-related deaths, of which 132 were poisonings (Varjonen et al., 2014). In Helsinki, Tampere, Vantaa and Espoo, a total of 97 patients discontinued treatment in 2013 (N= 1,221). The number of discontinued treatments proportioned to the total number of patients varied greatly between the cities. This probably indicates differences in treatment practices between local authorities or treatment units.

Discussion

The situations in Finland, Norway, Denmark, Iceland and Sweden are different with regard to the expansion of and need for substitution treatment and the use of opioids. For example, substitution treatment is no longer increasing in Denmark, while it has expanded rapidly in recent years in Norway and also Sweden, even if the latter still restricts the access to treatment (such as treating only those opiate users who are over 20 years of age). In Finland, the coverage of treatment is probably lower than in Sweden and Norway.

The availability of treatment is an important quality criterion and indirect effectiveness criterion. At the beginning of the 2000s, poor accessibility of substitution treatment was a problem in Finland.

Treatment is maybe more extensively available, but current waiting times have not been surveyed.

The Finnish treatment system is more decentralised than the Swedish and Norwegian systems; that is, Finland has many small treatment units. This may indicate great differences in treatment practices, as treatment provided in Finland is also lacking central steering and nationwide guidelines on the content of treatment. Finnish medication policies vary between local authorities and treatment units. It would be important to consider their suitability in relation to the use of opioids purchased in the street and the objectives of treatment (harm reduction vs. rehabilitation). Increased use of methadone for substitution treatment, according to the WHO's recommendation, could be suitable for Finland (World Health Organization, 2014).

There is very little systematic data available on the backgrounds and circumstances of patients in treatment, even though such data would be important for the development of treatment. For example, a homeless substitution treatment patient is basically much worse off than a patient with a permanent home. Lack of housing or poor social resources also requires smooth co-operation between different authorities.

In our comparison, Sweden showed high mortality rates during substitution treatment. A number of contributing factors to this can be found: Compared with Finland, the patient group is different (mainly heroin users) and the number of drug-related deaths in general has been increasing for a long time. One reason may be the fact that substitution treatment is not allowed in involuntary treatment units.

When developing the treatment system of opioid addicts in Finland, particular attention should be paid to shortening the waiting times for treatment, improving adherence to treatment and co-operation with the education and employment authorities. With regard to follow-up, it is important to develop national-level systematic register data on treatment, to enable comparable data on waiting times, medications and methods used, termination of treatment and treatment-related mortality rates. Due to the scattered nature and short history of the Finnish system, it is important to draft national guidelines for Finland.

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NOTES

- 1 This article is an extended version of an article published previously in Finnish (Selin et al., 2015).
- 2 Problem drug use (PDU) is defined by the EMCDDA (European Monitoring Centre for Drugs and Drug Addiction) as ‘injecting drug use or long duration or regular use of opioids, cocaine and/or amphetamines’ (EMCDDA, 2013b).

REFERENCES

- Asmussen, V. (2006). On whose terms? User participation in Danish methadone maintenance treatment. In J. Anker, V. Asmussen, P. Kouvonon, & D. Tops (Eds.), *Drug users and spaces for legitimate action*. (pp. 205–226). Helsinki: Nordic Council for Alcohol and Drug Research.
- Babor, T., Stenius, K., & Romelsjö, A. (2009). Päihdehuollon järjestelmät kansanterveyden näkökulmasta [Substance use treatment systems from a public health perspective]. In T. Tammi, M. Aalto, & A. Koski-Jännes (Eds.), *Irti päihdeongelmista* [Away from substance use problems]. (pp. 195–216). Porvoo: Edita.
- Ekendahl, M. (2011). The limits of legitimacy: Service providers’ views on maintenance treatment in Sweden. *Addiction Research & Theory*, 19(5), 427–437.
- EMCDDA (2011). *Cost and financing of drug treatment services in Europe. An exploratory study*. Lisbon: EMCDDA.
- EMCDDA (2012a). *Sweden. 2012 National report (2011 data) to the EMCDDA*. Lisbon: EMCDDA.
- EMCDDA (2013a). *Statistical bulletin 2013. Table HSR-3. Estimated number of clients in methadone treatment and of all clients receiving any opioid substitution treatment (OST). Part (i) Estimates of clients in methadone treatment or any opioid substitution in EU, Croatia, Turkey and Norway, 1993–2011*. Retrieved from <http://www.emcdda.europa.eu>
- EMCDDA (2012b). *The drug situation in Norway 2012*. Lisbon: EMCDDA. Retrieved from <http://www.emcdda.europa.eu>
- EMCDDA (2013b). *Statistical bulletin 2013. Problematic drug use (PDU) prevalence – an overview of the methods and definitions used*. Retrieved from <http://www.emcdda.europa.eu>
- EMCDDA (2013c). *Statistical bulletin 2013. Table HSR-9. Opioid substitution treatment in prison in EU, Croatia, Turkey and Norway, 2010/2011*. Retrieved from <http://www.emcdda.europa.eu>
- Erikson, T. (2014). *Klinisk handbok* [Clinical handbook]. LARO boken 2014. Akademiska sjukhuset. Retrieved from <http://www.akademiska.se/Global/Psykiatridivisionen/Beroende%20och%20neuropsykiatri/Dokument/LAROBOKEN.pdf>
- Forsell, M. & Nurmi, T. (2013). *Päihdehuollon huumeasiakkaat 2012* (Tilastoraportti 21/2013) [Substance use treatment customers 2012 (Statistical report)]. Helsinki: Terveystieteiden tutkimuskeskus ja hyvinvoinnin laitos. *Forskrift om legemiddelassisteret rehabilitering 18.12.2009* [Regulation on medication-assisted rehabilitation]. Retrieved from <https://lovdata.no/dokument/SF/forskrift/2009-12-18-1641>.
- Fugelstad, A., Johansson, L.A., Thiblin, I. (2010). Allt fler dör av metadon. ”Läckage” från dagens mer liberala behandlingsprogram kan vara en orsak [More and more deaths from methadone. Leakage from today's more liberal treatment programmes can be one cause]. *Läkartidningen*, 107(18), 1225–1228. Retrieved from http://www.lakartidningen.se/OldWebArticlePdf/1/14301/LKT1018s1225_1228.pdf

- Helsedirektoratet (2010). *Nasjonal retningslinje for legemiddellassisteret rehabilitering ved opioidavhengighet* [National guidelines medication-assisted rehabilitation for opioid dependence]. Oslo: Helsedirektoratet. Retrieved from <http://helsedirektoratet.no>
- Helsedirektoratet (2013). *Helsetjenester til innsatte i fengsel* (Årsrapport 2012) [Inmate health care (Annual report)]. Oslo: Helsedirektoratet. Retrieved from <http://helsedirektoratet.no>
- Houborg, E. (2012). The political pharmacology of methadone and heroin in Danish drug policy. *Contemporary Drug Problems*, 39(Spring 2012), 155–192.
- Kuljukkanen, L., Niskala, M., Partanen, A., Kuussaari, K., & Vormaa, H. (2013). *Päihdepalveluihin pääsy suurissa kunnissa vuosina 2011 ja 2012* (Raportteja 38/2013) [Access to substance abuse services in large municipalities in 2011 and 2012 (Reports)]. Helsinki: Terveyden ja hyvinvoinnin laitos., Retrieved from <http://www.julkari.fi>
- Kuusikko-työryhmä (2013). *Kuuden suurimman kaupungin päihdehuollon palvelujen ja kustannusten vertailu vuonna 2012* (Kuusikko-työryhmän julkaisusarja 3/2013) [Comparison of substance abuse services and costs in the six largest city in 2012]. Helsinki: Edita.
- Lauritzen, G., Ravndal E., & Larsson, J. (2012). *Gjennom 10 år. En oppfølgingsstudie av narkotikabrukere i behandling* [Through 10 years. A follow-up study of drug users in treatment]. SIRUS-rapport nr. 6/2012. Oslo: Statens institutt for rusmiddelforskning.
- Läkemedelsassisterad behandling vid opiatberoende* [Medication-assisted treatment in opioid dependence] 7.12.2009. *SOSFS 2009:27 (M). Föreskrifter och allmänna råd* [Regulations and guidelines]. Retrieved from <http://www.socialstyrelsen.se/sosfs/2009-27>
- Ollgren, J., Forsell, M., Varjonen, V., Alho, H., Brummer-Korvenkontio, H., Kainulainen, H., Karjalainen, K., Kotovirta, E., Partanen, A., Rönkä, S., Seppälä, T., & Virtanen, A. (2014). Amfetamiinien ja opioidien ongelmakäytön yleisyys Suomessa 2012 [Prevalence of amphetamine and opioid misuse in Finland in 2012]. *Yhteiskuntapolitiikka*, 79, 498–508.
- Partanen, A., Vormaa, H., Alho, H., & Leppo, A. (2014). Opioidiriippuvuuden lääkkeellinen vieroitus- ja korvaushoito Suomessa [Medicinal detoxification and substitution treatment of opioid dependence in Finland]. *Suomen Lääkärilehti*, 69(7), 481–486.
- Perälä, R., Hellman, M., & Leppo, A. (2013). Behind the scenes. The justifications for opioid maintenance treatment in Finland. *Substance Use & Misuse*, 48(11), 954–965.
- Petersson, F. (2013). Excusing exclusion: Accounting for rule-breaking and sanctions in a Swedish methadone clinic. *International Journal of Drug Policy*, 24, e99–e104.
- Selin, J., Hakkarainen, P., Partanen, A., Tammi, T., & Tigerstedt, C. (2013). From political controversy to a technical problem? Fifteen years of opioid substitution treatment in Finland. *International Journal of Drug Policy*, 24, e66–e72.
- Selin, J., Perälä, R., Stenius, K., Partanen, A., Rosenqvist, P., & Alho, H. (2015). Opioidikorvaushoito Suomessa ja muissa Pohjoismaissa [Opioid substitution treatment in Finland and other Nordic countries]. *Suomen Lääkärilehti*, 70(19), 51–57.
- Simonsen, KW., Normann, PT., Ceder, G., Vuori, E., Thordardottir, S., Thelander, G., Rollman, D. (2011). Fatal poisoning in drug addicts in the Nordic countries in 2007. *Forensic Science International*, 207(1–3), 170–176.
- Skretting, A., & Rosenqvist, P. (2010). Shifting focus in substitution treatment in the Nordic countries. *Nordic Studies on Alcohol and Drugs*, 27(6), 581–597.
- Socialstyrelsen (2012). *Kartläggning av läkemedelsassisterad behandling vid opiatberoende*. Socialstyrelsen. Retrieved from <http://www.socialstyrelsen.se>
- Socialstyrelsen (2015). *Nationella riktlinjer för vård och stöd vid missbruk och beroende. Stöd för styrning och ledning* [National care and support guidelines for substance misuse and dependence. Support for governance and management]. Socialstyrelsen. Retrieved from <http://www.socialstyrelsen.se>
- Sosiaali- ja terveysministeriön asetus opioidiriippuvaisten vieroitus-, korvaus-

- ja ylläpitohoidosta erällä lääkkeillä 33/17.1.2008.
- Sundhedsstyrelsen (2008). *Guidance no. 42 on medical treatment of drug abusers in substitution treatment for opioid dependence*. Copenhagen: Sundhedsstyrelsen. Retrieved from www.sundhedsstyrelsen.dk
- Sundhedsstyrelsen (2013a). *Evaluering af ordning med lægeordineret heroin til stofmisbrugere* (Statusrapport for perioden 2009–2011) [Evaluation of medically prescribed heroin to drug users]. Copenhagen: Sundhedsstyrelsen. Retrieved from <http://www.sundhedsstyrelsen.dk>
- Sundhedsstyrelsen (2013b). *Narkotikasituationen i Danmark 2013* [The drug situation in Denmark 2013]. Copenhagen: Sundhedsstyrelsen. Retrieved from <http://www.sundhedsstyrelsen.dk>
- Tammi, T. (2007). *Medicalising prohibition. Harm reduction in Finnish and international drug policy*. Stakes, research report 161. Helsinki:Stakes.
- Thom, B., Duke, K., Assmussen, F., & Bjerge, B. (2013) Stakeholders in opioid substitution treatment policy: similarities and differences in six European countries. *Substance Use & Misuse*, 48(11), 933–42.
- Uosukainen, H., Kauhanen, J., Bell, JS., Ronkainen, K., Tiihonen, J., Föhr, J., Onyeka, IN., Korhonen, MJ. (2013). Mortality among clients seeking treatment for buprenorphine abuse in Finland. *Drug and Alcohol Dependence*, 133, 391– 397.
- Varjonen, V., Tanhua, H., & Forsell, M. (2014) *Huumetilanne Suomessa 2013* (Raportti 5/2014). Helsinki: Terveyden ja hyvinvoinnin laitos.
- Waal, H., Bussesund, K., Clausen, T., Håseth, A., & Lillevold, P.H. (2013). *Statusrapport 2012. LAR som det vil bli fremover?* (Serap rapport 1/2013) [Status report 2012. The future of OMT]. Oslo: Senter for rus- og avhengighetsforskning, SERAF.
- Waal, H., Clausen, T., Håseth, A., Lillevold, PH. (2011). *Statusrapport 2010* (Serap Rapport 4/2011) [Status report 2010]. Oslo: Senter for rus- og avhengighetsforskning, SERAF.
- World Health Organization (2014). *Guidelines for the psychosocially assisted pharmacological treatment of opioid dependence*. Retrieved from <http://www.who.int>

