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Independent dental hygiene practice worldwide: a report of two meetings

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Abstract: *Objectives:* Following a meeting at the EUROPERIO in Berlin in 2003, a forum on Independent Practice of Dental Hygienists was held at the International Symposium on Dental Hygiene (ISDH) in Madrid July, 2004. The forum was organized and moderated by Beate Gatermann, President of the German Dental Hygiene Association. The participants were asked to address the following issues: population of country/state; population of dentists; population of state recognized dental hygienists (Canada/USA etc.); number of hygienists with 'Diploma' (Europe); duration of dental hygiene education; cost of education (2/3 year base approximately); when and how independent practice began in the country and who must be consulted or approve the application for an independent office (e.g. Health Department); what services are allowed? Can dental hygienists administer local anaesthesia in the dental office, and if so, must a dentist be present? Can dental hygienists purchase the necessary medication for the injection? Does the dental hygienist require additional education to provide local anaesthesia? How are the patients charged? Does the country offer a service fee list? Do insurance companies pay claims of the dental hygienist? What is the approximate average fee per hour charged (€/$)? Do dentists refer patients to you? If so, do they need a letter of referral? Are dental hygienists allowed to take radiographs in independent dental hygiene offices?

Key words: dental; hygiene; independent; practice; worldwide

United states

The USA has almost 300 million inhabitants and 153 000 dentists with 147 000 dental hygienists. Between 1985 and 1995 the

annual number of dental school graduates declined by 23%, while the number of dental hygienists grew by 20%. The basic dental hygiene education can be completed in 2 years, but most dental hygienists graduate with 3 years of education. In the US you can complete a baccalaureate degree, which is needed for teaching, research, and some corporate positions. There are 265 entry-level programmes (accredited, 2 years) and 60 degree completion programmes (where you graduate with a baccalaureate degree). There are eight programmes that award a Master of Science in Dental Hygiene, and 34 re-entry programmes (for dental hygienists who have been absent from the profession of dental hygiene and now wish to return).

The average cost of a 2-year dental hygiene education is $4300. Private, state and federal loans and scholarships are available to assist qualified applicants with dental hygiene education.

Dental hygienists can practice as self-employed individuals (not employed by the dentist, physician, etc.) in certain states. The cost for treatments varies between $47–195 depending on the procedures being performed (Bureau of Labor Statistics http://www.bls.gov/oco/ocos097.htm).

Delivery of local anaesthesia by injection and working without supervision varies throughout the US, depending on the state dental or dental hygiene practice act. Most states allow local anaesthesia injections under supervision (31 from 52). Many states allow dental hygiene practice without the presence of the dentist being in the office at all times.

The States with more lenient practice acts, where dental hygiene practice is permitted with fewer restrictions, are given below.

Colorado, USA

Colorado, USA has 4.3 million inhabitants with 4433 licensed dentists, so the ratio of dental hygienists to dentist is 2:1, as not every dentist employs a dental hygienist. Hygienists must graduate from an accredited dental hygiene programme to become licensed in Colorado. Colorado has both a 4-year programme offering a baccalaureate degree, as well as three 2-year degree programmes offering an Associate Degree in Applied Science. Tuition in Colorado ranges from $14 000 to 24 000 (€11 500–20 000). Colorado's independent and/or unsupervised dental hygiene practice began in 1979. It was the General Assembly that amended the Dental Practice Law to include unsupervised dental hygiene practice, creating both supervised and unsupervised dental hygiene procedures in public schools and in charitable organizations.

It is the *procedures* that are supervised by a dentist, but the dental hygienists themselves are not supervised.

Unsupervised and supervised procedures include: removing deposits and stains, scaling, root planning applying topical agents, sealants, topical aesthetic, data collection, taking a comprehensive patient medical history, oral cancer screening, including the CDx brush biopsy as well as dental and periodontal charting.

Supervised dental hygiene procedures have two definitions:

Indirect Supervision implies that the dentist is not on the premises. Taking radiographs is allowed with indirect supervision, as well as fabricating bleaching trays.

Direct Supervision of dental hygiene procedures must be performed with the dentist on the premises. These procedures include local or block anaesthesia and placing chemotherapeutic agents within the sulcus, i.e. Arestin® (OraPharma, Inc., Warminster, PA, USA), Atridox® (CollaGenex Pharmaceuticals, Inc., Newtown, PA, USA) or the Perio Chip® (Dexcel Pharma Technologies Ltd, Jerusalem, Israel).

In 1985, local anaesthesia was clarified and allowed with direct supervision. Independent dental hygienists may have a contract with a supervising dentist, but the dentist must be on the premises when the procedure is being performed. Certification is necessary to provide local anaesthetic dental injections. A local anaesthetic course is held once a year for both dental hygienists and dentists needing certification. It is the same course for both professionals.

Typically, patients are charged for procedures which are considered reasonable and customary. Fee structures exist only within insurance companies both in private companies and government funded insurance plans.

In 1997, dental hygienists became eligible for insurance reimbursement by the General Assembly, amending the Colorado Insurance Law. And in 2001, the state dental insurance plans, Medicaid and the Children's Health Plan allowed dental hygienists to be reimbursed. Using a fee schedule, Medicaid will reimburse only those hygienists practicing without supervision.

The approximate average fee per hour is $85.

Local area dentists do refer patients to the dental hygiene office, including general dentists and periodontists. A letter of referral is not needed. Although, the dental hygienist is required by law to refer patients to a licensed dentist for diagnosis, she/he can take radiographs in the office, if she/he has contracted indirect supervision to do so with a dentist.

Washington, USA

The population of Washington State is about 6.2 million people. The population of dentists consists of 4301 that are active

and 6336 that are licensed. The population of state recognized dental hygienists is 3903 (active) and 4622 that are licensed.

The dental hygiene education is 2 years full time. The education currently would cost about $14 000–18 000.

Independent practice began in Washington in 1984. It is authorized by the Dental Hygiene Practice Act, RCW 18.29.056. Employment by Health Care Facilities is authorized with certain limitations.

Unsupervised dental hygiene practice requires 2 years experience under a dentist's supervision as a prerequisite. One must be employed or retained by health care facilities. This scope of practice does not permit local anaesthesia.

Dental hygienists can practice in hospitals, nursing homes, home health agencies, group homes serving the elderly, handicapped and juveniles, state-operated institutions under DSHS and Department of Corrections, federal, state and local public health facilities, community, migrant and tribal clinics (1997), schools (2001). Other practice options are veterinary, forensic and contracting with dental practices.

The following is regulated for an independent practice: business license, tax and ID Number. Independent School Oral Health Programs are coordinated by Local Health Jurisdictions, Medicaid Provider Agreement – which has contact with the state concerning payment for services provided.

Services allowed: initial examination and assessment by registered dental hygienist (RDH) for dental hygiene treatment plan and referral to any doctor of dental surgery (DDS) for treatment needed, removal of all deposits and stains, root planing, application of fluoride and sealants, polishing and smoothing restorations.

Local anaesthesia is allowed, when the dentist is present. Those who graduated before 1971, or who do not have local anaesthesia as part of their dental hygiene education and licensure, must have approved credits for legal administration and for licensing.

Patients are charged according to treatment. Some insurance companies pay the account, including Medicaid.

There is a list of 'fee for service'. It is developed on an own fee schedule. It is the same fee as the dentist would charge if the dental hygienist was working as an employee. Average contracting fee is $40–60 per hour.

Many dental hygiene practitioners use portable equipment that can be set up about anywhere. Sometimes dentists refer patients to these offices and some practitioners ask for a referral. It is permitted to take radiographs in these offices. However, currently most insurance companies do not pay dental hygienists directly for radiographs. This is an issue the Washington Dental Hygienists' Association is addressing.

California, USA

California has 30 million inhabitants with 24 000 dentists and 15 887 recognized dental hygienists. A 2-year dental hygiene degree from the junior college is required as a minimum. The cost of the dental hygiene programme, including postgraduate degree, is approximately $20 000.

Independent practice (owning your own business) for dental hygienists began about 25 years ago with a Health Manpower Pilot Program followed by the passage of California State Legislation awarding a new license category for licensed dental hygienists in 1998. Those registered dental hygienists in alternative practice (RDHAP) may provide all dental hygiene services that are under general supervision guidelines, established by each state. To practice as an RDHAP in California a 'prescription' written by a dentist (DDS/DMD) or a physician (MD) is required. Two years experience working as a registered dental hygienist is required, as is the equivalent of a bachelor's degree. In addition, 150 h of postgraduate education is necessary to comply with rules set forth by the Dental Board of California.

Local anaesthesia administration has been permissible since 1978 in the presence of a dentist. Local anaesthetic agents cannot be purchased.

The operator charges clients according to a private fee schedule, which is paid privately. Most dental insurances accept the charges billed, including medical or dental (welfare for those of low income). Most dental insurance companies reimburse directly to the hygienist and the average fee per hour is $80–100. Some dental hygienists have a mobile practice and clients are serviced within a 50-mile radius. Dentists do refer and a 'prescription' is required for treatment. Taking radiographs is permitted but some insurance companies will not pay for radiographs.

Canada

British Columbia

Canada has 35 million people with a population of 17 967 dentists and 15 000 registered dental hygienists. There are 2, 3 or 4 year educational programmes. The 2-year programme requires preschooling in dental assistant education. The cost of a 3-year programme is about 18 500 Canadian dollars. The government supports a part of the tuition. This varies from province to province. In addition to working in a private independent office, dental hygienists may also work freelance in a dental office. The pay is based on the number of patients

treated. The dental hygienist is responsible for his/her own share of pension payments, unemployment insurance and taxes.

Dental hygienists in British Columbia and Ontario can be self-employed. The road to self-regulation (or self-government, where a dental hygienist can register and license themselves, not the dental associations) started in the 1970s. In the aforementioned provinces, self-employment was recognized in the mid-1990s, after consultation with the Provincial Ministers of Health. The employment settings vary from independent practices in British Columbia, to public health and Community Health Agencies (in most provinces), to nursing homes, hospitals and mobile practices. These settings must comply with the *Dental Hygiene Scope of Practice* in the respective province. There are only about 10 independent dental hygiene offices so far. Local anaesthetic is permitted in four provinces; British Columbia, Alberta, Saskatchewan and Manitoba. Dental hygienists in British Columbia can purchase the necessary local anaesthesia materials for their practice. In the newer programmes in the provinces where local anaesthetic can be administered by the dental hygienist, it is taught in the educational programme. The province offers module programmes after graduation or if one relocates to another province.

All dental hygienists can scale, polish, administer fluoride, take impressions and radiographs and provide diet counselling and periodontal treatment planning. In Canada tooth whitening can only be performed by dentists.

Fees are set by the Provincial Governments in association with the dental associations. It is recommended that dental hygienists follow a fee guide. Some insurance companies will reimburse the dental hygienist for services, but many do not recognize independent practice. This is an issue that the Canadian Dental Hygienists' Association is working to rectify. The average fees are between 25 and 75 Canadian dollars per hour. This varies between provinces and cities, depending on the fee guide.

In British Columbia where independent practice is allowed, most dentists do not recommend specific dental hygienists. A referral is not required by law. However, the patient must be seen by a dentist within a period of 12 months, before the dental hygienist in independent practice may work on a patient. Dental hygienists practicing in independent settings may take radiographs in their offices.

In Canada, the future should permit dental hygienists by law to practice independently in the whole country. That includes administering local anaesthetics and reaching small communities in rural areas that currently receive no preventive or therapeutic care. Elderly and homebound people will be able to seek treatment, and most importantly, children in poorer communities will not be turned away. Currently there are no dentists working in the poorer areas or remote communities, so people in these areas are not able to obtain treatment, and in many cases, cannot afford to travel to seek treatment.

The provinces with more lenient practice acts, where dental hygiene practice is permitted with fewer restrictions, are given below.

Ontario

Ontario is one of the 13 provinces in Canada with over 10 million inhabitants. The total number of Registered Dental Hygienists is 7800 and there are approximately 7600 practicing dentists. In Ontario the approximate cost of dental hygiene education at a community college is approximately 15 000 Canadian dollars. The duration of this programme is 2 years, which provides graduates with a Diploma in Dental Hygiene. In the last few years a few private dental hygiene schools have begun to operate. They have tuition fees between 20 000 and 35 000 Canadian dollars. Graduates from these private schools also receive a Diploma in Dental Hygiene. Graduates from private schools (unless they are accredited) are required to pass the board exam prior to being registered by the College of Dental Hygienists of Ontario (CDHO), the regulating body of the dental hygiene profession in Ontario.

It is common for students wishing to study dental hygiene to travel abroad for their education. The most often utilized countries are United States, England and Australia. The writer of this paper herself was educated in Williamsville, New York USA and received the degree of Associate in Applied Science Dental Hygiene in 1993.

Dental Hygiene is a self-regulated profession under the *Regulated Health Professions Act, 1991* and the *Dental Hygiene Act, 1991*. Their regulatory body is the CDHO since 1994. Currently, dental hygienists must obtain an 'order' from a dentist to perform the controlled act of *scaling and root planing teeth, including curetting of the surrounding tissue* as stated in the *Dental Hygiene Act 1991*.

In Ontario dental hygienists are able to practice in their own independent dental hygiene clinics because they are self-regulated. The majority of dental hygienists work as 'freelancers', 'contractors' or employees in traditional dental offices. Only 13 dental hygienists have their own dental hygiene practices set up and running in Ontario. The first dental hygiene clinic was opened on 7 January 1999 by Lynn Cappel.

Registered dental hygienists, who choose to practice in their own clinics, may provide clinical and educational services

within their scope of practice. These include: complete oral examination assessments, scaling, root planing, gingival curettage, polishing of teeth, fluoride treatment, placement of pit and fissure sealants, whitening of teeth, taking impressions for study models, fabrication of study models, smoke cessation, nutritional advise relative to oral health, oral health education, local anaesthesia if a delegation is given by a physician (a dentist does not have to be present), radiographs when prescribed, and preparation of sport mouth guards.

In order to set up an independent dental hygiene clinic, the most important and most difficult issue is finding a dentist willing to provide the 'order' for scaling and root planing, which many are reluctant to provide. Once having obtained an order, the business needs to be registered with the provincial government.

In Ontario there are more than 250 registered dental hygienists who can administer local anaesthesia. They required additional education to be able to provide this service. They have received this education outside of the province of Ontario.

The Ontario Dental Hygienists' Association (ODHA) issued a suggested Fee Guide for Dental Hygiene Services in 2004. Clients who receive treatments in an independent dental hygiene clinic are usually charged according to this Fee Guide. Currently only one insurance company reimburses clients for preventive services who receive treatments in an independent dental hygiene setting. According to this fee guide each 15 min or unit of time constitutes 1 unit of scaling. One unit of scaling costs $41.00 and a unit of root planing $44.00.

Dentists, almost never refer clients to an independently practicing dental hygienist. In fact dentists are totally opposed to the idea of independent dental hygiene settings. In Ontario, members of the public and dental hygienists are lobbing for the removal of 'instructions' from the *Dental Hygiene Act 91*. Removal of the 'instructions' would allow dental hygienists to practice without 'permission' from a dentist!

Europe

Sweden

Sweden has 9 million inhabitants with a population of 8000 dentists and 2700 dental hygienists with diplomas. To enter today's dental hygiene programmes in Sweden a university entry level is required. There are eight dental hygiene schools, and six of them have extended to a 3-year programme. The dental hygiene programme in Sweden is free of charge.

The Ministry of Health and Social Affairs decided 15 years ago to legalize independent work, which began in 1964 right after the initiation of dental hygiene. Today there are 180 independent dental hygienists. Dental hygienists either rent part of an office from a dentist or work in his or her own office. At the time of writing, there are only three practicing male dental hygienists in Sweden.

The Swedish dental hygienist is licensed by the National Board of Health and Welfare. The license is obtained following completion at the University with a Diploma in Dental Hygiene.

Like all other health care and hospital states, licensed dental hygienists are obliged to work both scientifically, and in accordance with evidence-based methods. The work includes the following: clinical health promotion, educational training, administration and leadership as well as research and development. They are allowed to perform the following procedures in their own offices: prediagnose caries and periodontal disease and plan the appropriate treatment, take radiographs and perform scaling. Injections can be administered without the presence of a dentist, and dental hygienists are permitted to purchase the necessary material. There is no additional education for anaesthesia once a dental hygienist has graduated, as that instruction is part of the dental hygiene educational programme. Dental hygienists administer infiltration and mandibular nerve-block injections.

Some services are partially paid by the government insurance companies and these pay a fixed amount of certain services. The approximate fee is €60–110 per hour. The dental hygienist sets his/her own fee without being supervised by a dentist. Dentists often refer patients to the dental hygiene office, but the patients do not need a referral.

Although the dental hygienist may take his/her own radiographs, owning an X-ray machine is not permitted. Therefore the dental hygienist is somewhat dependent on the dentist. The Swedish Dental Hygiene Association is addressing this issue, as they believe the standard of dental hygiene practice would be improved if radiographs could be provided.

The Netherlands (Holland)

There are about 16 million people in the Netherlands and about 5800 practising dentists. There are 2250 registered dental hygienists.

From 1967 to 1993 the education consisted of 2 years and from 1993 to 2002 the education increased to 3 years. Since September 2002, the educational requirement is 4 years, as instituted by the government leading to a baccalaureate degree. All of the 3-year paramedic health education programmes have been extended to 4 years.

The educational cost is approximately €2000 per year. The government pays an additional amount.

Juliska van der Borgh had the courage to begin an independent office in 1978 in Amsterdam. She communicated with other dentists in her hometown, met with several politicians and started an independent practice at her own location. The law does not state that it is necessary for a dentist to be on the premises it only states: 'There must be a close cooperation between dentist and dental hygienist'. Therefore, if one can arrange for a dentist to be readily available if necessary, it is possible to work independently.

Officially the dental hygienist in the Netherlands is not required to consult with anyone when dental hygienist work is being performed. However the patient is referred by the dentist to the dental hygienist and the dental hygienist has to report back to the dentist. Currently, a dental hygienist can start an office anywhere in the country, as it became legal in 1994. Since 1997 there has been a new health law, *The Law on Professions in Individual Health Care*. Dental hygienists now have legal 'title protection'; which means that only those who fulfil the training and educational requirements described in the law are allowed to call themselves, or be recognized as, a dental hygienist. In total, there are approximately 450 independent practices today. The Dutch dental hygienists are allowed to provide all the services in the professional scope of dental hygiene, including periodontal therapy, such as scaling and root planing. Dutch dental hygienists may administer local anaesthesia without supervision, but need a request from a dentist, as per legal statute. Dental hygienists can administer infiltration and block anaesthesia, but cannot purchase the necessary pharmaceutical material, as the government neglected to change the law regarding the purchase of prescription products. All dental hygienists registered before 1997 require additional education to deliver local anaesthesia. Dental hygienists registered after 1997 have been educated to administer anaesthesia through the dental hygiene education programme.

Patients in the Netherlands are charged per hour. The billing statement is sent directly to the patient and they are reimbursed from the insurance companies. As an example, if 3 h of therapy is performed, the statement reflects 3× hourly fee. When patients are insured for dental care (in the Netherlands dental coverage is an additional insurance to basic health insurance), most insurance companies pay the fees.

There are no 'regular' fees for dental hygienists in the Netherlands, as fees are decided individually. The Dutch Dental Hygienists Association has created a module that can be used to determine fees. The fee is €90 per hour.

When independent referral practice became legal, a few dental hygienists converted their garages into offices. Now, most buy a house with sufficient space for an office or they construct an office, or rent a building where they can establish their practice. At the moment the law still states that patients can only be treated by independent dental hygienists when they have a written referral from their dentist.

During traditional dental hygiene education, taking radiographs is part of the curriculum. However, there is a law in the Netherlands that states that only physicians, dentists and specialists may purchase or lease the X-ray equipment.

Positive changes for the Netherlands would be for the patient to have free access to go to the dental hygienist or the establishment of more extensive collaboration. As the specific knowledge of the dental hygienist is in the field of prevention, it is obvious that the care of all dental patients should be the responsibility of the dental hygienist.

Finland

Finland has 5.2 million inhabitants, 4700 dentists, and about 1400 dental hygienists. Education in Finland is three and a half years and the education is free for Finnish residents and supported by the government.

In Finland, dental hygienists can work freelance within a dental office. In 1994, regulation concerning private healthcare services made it possible for dental hygienists to be private entrepreneurs. It is required that a dental hygienist contacts the commercial registry of Finland and the office of law protection. It is a prerequisite to be acquainted with the laws concerning healthcare professionals, private healthcare, trade law, accounting and laws relating to liability for damages (for patients).

The following employment opportunities are available for entrepreneur dental hygienists: operate as an independent practitioner, practice with another hygienist in the office; or own your own office or employ a dentist. An entrepreneur dental hygienist can contract her services to a dentist, or both the dentist and dental hygienist can operate as private entrepreneurs, working together in the same office.

Services provided are: dental hygiene treatment plan, preventive care, therapy, cosmetic treatment like bleaching and placement of dental jewellery and oral health promotion lectures. Finnish dental hygienists are able to prediagnose. Providing local anaesthesia is part of the dental hygiene scope of practice and is taught in educational programmes, but the law requires a dentist to be present when this function is performed. Local anaesthesia materials cannot be purchased by a dental hygienist in Finland.

A list of service fees is available on the internet and in dental waiting rooms.

Currently, the social insurance institution in Finland does not cover treatment performed by the dental hygienist. Treatment costs are 80–90€ per hour. Dentists refer patients to the dental hygienist but no letter of referral is required. When a dentist and a dental hygienist work together, the dental hygienist is allowed to use radiographic equipment in the office. Future perspectives for Finland are that there should be improvements in the recognition of the dental hygienists as a profession and collaboration with dentists should exist without unnecessary complications.

Denmark

Denmark has 5.3 million inhabitants, about 4800 dentists and 1500 dental hygienists. Education takes almost 3 years and is free of charge except for books and supplies, which are financed by the government. Dental hygienists have been able to practice independently since 1996. It took 5 years for this change to take place. By law, dental hygienists can perform: prediagnosis, scaling, radiography (even in independent offices), treatment of infection, prevention and dietary advice and nutrition. Dental hygienists may provide all regular dental hygiene services, but must refer patients to a dentist if caries or other problems are discovered.

Local anaesthesia can be administered in the absence of a dentist, but materials must be purchased by a dentist. Dental hygienists do not need additional education to administer local anaesthesia, as it is taught as part of the dental hygiene curriculum.

Private insurance companies do accept invoices from dental hygienists, but as yet, the public insurance does not accept these invoices. Only 40% of treatments are refunded by insurance companies.

The normal fee per hour is 80€.

Dentists refer patients to their offices and vice versa. Only 2% of dental hygienists receive referrals from a dentist. In Denmark you do not need a letter of referral to visit a private hygienist's clinic.

Switzerland

Switzerland is a very small country with a size of 40 000 km^2 and with approximately 7 million inhabitants. There are 4000 practicing dentists, and approximately 1500 dental hygienists with diplomas. Until 1993 Switzerland had a 2-year education, with a diploma issued from the Swiss Dental Association. Since 1994 the curriculum requires a 3-year education programme and a national registered diploma from the Red Cross and Health Department. At the moment Switzerland has no bachelor's or master's degree programme. The cost of education ranges from €750 up to €12 000 for Swiss students and is dependent on the school attended. Foreign students pay about €60 000.

Independent practice started in 1997, with permission granted by the government and the health department in the district (Kantons) where one practices.

As an independent dental hygienist, the following services can be performed without supervision: general medical history, dental hygiene case history, professional debridement, oral health information and instruction, as well a nutrition counselling. In some districts everything that is studied during the educational process is permitted.

Services that can be performed with supervision: subgingival scaling with a letter of referral by a doctor or a dentist. Services not permitted: treating medically compromised patients, administration of local or topical anaesthesia and microbiological examinations. There is no law concerning bleaching.

It is written in law that a dentist should be present when a dental hygienist is administering local anaesthesia. Independent dental hygienists are not permitted to purchase injection materials. Local anaesthesia is taught in post-education programmes.

Patients are charged directly but not all insurance covers the treatment. In Switzerland most insurance companies do not cover dental treatments. Fees are paid to the dental hygienist. Some insurance companies sometimes need additional information. Fees are usually €90–120 for a 60-min treatment.

Some patients are referred by a dentist, and it is always recommended to have a letter of referral. Independent dental hygienists are not permitted to take radiographs in their offices. The association of Swiss Dental Hygienists is working to change this situation.

It is the goal to establish bachelor's and master's degree programs in Switzerland. This will insure better working conditions for all dental hygienists, including those practicing independently. The association is also working on public relations, to ensure that the public will request independent dental hygienists more frequently. They also want people to recognize that dental hygienists are highly educated and are *the* preventive oral health specialists.

Norway

Tone Kristin Solbra and Hilde Aga own their own dental hygiene office. They are working in a public office, combined

with renting a dental office where they work as independent dental hygienists.

Norway has about 4.5 million citizens, with about 1200 dentists in public practice and about 2500 in private practice. There are about 1200 graduated dental hygienists in Norway. About 900 are in practice and about 700 are members of the Norwegian Dental Hygienist Association. Only 20 hygienists are operating their own office so far.

The bachelors degree was introduced in 2002. The education of dental hygienists in Norway is a 3-year programme offered by two universities. One university still has a 2-year programme. For acceptance into a dental hygiene programme in Norway, one must fulfil the same requirements to enter a university.

Fees for education are paid by the state. Students must pay for materials and books, which cost about 4000–5000€.

The dental hygiene education started as a 2-year programme in Norway in 1971. At that time the dental hygienist was required to work together with a dentist. The law '*Personnel in Public Health*' was instituted in 2001. According to this law, the dental hygienist is responsible for the duties he/she performs. The dental hygienist must inform the Community Board of Health in order to start an independent office.

The Norwegian dental hygienists can perform the following duties: clinical and radiographic examinations of the oral cavity; prediagnosis of teeth and periodontal status; and referral of the patient to the dentist (orthodontist or periodontist) when required. Dental hygienists are allowed to administer local anaesthetic agents. Administering anaesthesia is included in the educational curriculum since 2002. If one was educated before the year 2002, one must take a 2-day course in administering anaesthesia.

There is no special price listing for dentistry in private practice, only in the public services. There is no price regulation. To some extent the preventive-periodontal therapy is refunded by the social security. To give an example: if a person has periodontal disease, the social security will give an economic contribution.

In private practice, an average fee per hour is about 95€. In public services, the average fee is about 75€.

In their practice, the above-mentioned dental hygienists collaborate with four dentists and patients are referred to them. No letter of referral is needed. They are permitted to take radiographs in their office, whenever needed. No referral to take radiographs is needed. An important document 'Report No. 16 Prescriptions for a Healthier Norway' from the Ministry of Social Affairs was passed in Parliament last year. *This document underlines the need for prevention before treatment*. Norway has an extreme shortage of both dentists and dental hygienists.

Italy

The population in Italy is 57 million, with approximately 35 000 dentists and approximately 1500 qualified certified dental hygienists. The first Italian dental hygiene school started in 1978 with a two year University Program in Bari. Currently, dental hygiene is a 3-year university education with two additional years for a speciality degree for administrative careers in public settings. In Italy it is possible to attend a university after a total of 13 years of primary and secondary school. University education costs are about 30 000€ per hygienist.

In Italy dental hygienists can work with a dentist, or as independent professional operators. However, patients are referred by dentists to dental hygienists, as only doctors are legally allowed to diagnose. The independent practice of dental hygienists began in 1999 as a result of two state laws. After the acknowledgement of the status of the dental hygienist, the law recognized them as health professional operators. In 2000 another law allowed dental hygienists (and other health professions, e.g. nurses and physiotherapists) the opportunity to become managers in public and private health sectors, allowing professional autonomy. This is exclusive of providing a 'diagnosis' which can only be done by a doctor.

In Italy it is legal for a dental hygienist to have an independent office but is not common, as operational costs are quite expensive. It is preferred to develop a system of leasing equipment within a dental office. In Italy dental hygienists can provide all the services related to primary, secondary and tertiary prevention. It is not permissible to take radiographs and administer local anaesthesia, even in the presence of a dentist. However, the Italian Dental Hygienists' Association has applied to the Ministry to be able to administer local anaesthesia. The dentist must prescribe the preventive treatment for the patient, but there is no need for a written referral.

Regarding fees, dental hygienists have their own list of minimum fees charged for services provided. Dental hygiene fees are refundable by the insurance company. The cost of a single dental hygiene treatment is approximately 90€ per session, depending on the practice.

The profession of dental hygiene in Italy today is very challenging and I would recommend the profession as a good career opportunity. The presenter can visualize sharing an office with another hygienist.

Germany

With 82 million inhabitants, there are approximately 40 000 dentists and only 120 foreign registered dental hygienists. Therefore, Germany's proportion of dentists to dental hygienists with diplomas is not proportionate.

Dental hygiene began in 1974 in the form of continuing education programmes for dental assistants. In the beginning, dental hygiene functions were actually expanded duties for dental assistants. In 1994, 'the first official dental hygiene programme', operated by the dental board, began with a 3-month programme which now exists as a 6-month 'programme' in three different forms.

The German Dental Hygienists' Association began in 1991. In 1994, the Dental Law was changed to include the 'training' mentioned above. Nevertheless, no law today protects or describes the profession of the Registered Dental Hygienist (Diploma). All members of the German Dental Hygiene Association have been educated in state recognized dental hygiene programs outside of Germany. The cost of this education ranges from 30 000–60 000€, excluding living expenses.

(The above-mentioned dental assistant continuing education programme, without a state recognized diploma, can cost up to 10 000€ for a 6-month programme.)

In the fall of 2004 a private school (originating from Bern/Switzerland) opened in Munich. Unfortunately this school (Spring 2005) does not have state recognition from Switzerland or Germany. No state recognition is planned at the moment whereas changes could be easily made to achieve an international final diploma (bachelor level). The state recognition is continuously being prevented by the German Dental Association (Chamber). After 12 years of not establishing correct international professional rules, regulations should be decided by the Department of Health and not by the Dental Chamber. Germany is working with various kinds of qualifications in dental hygiene and some of them are not achieving the expected success because of the missing state recognition. Like all other European countries, Germany legally requires a full 3-year education for a diploma.

Independent dental hygiene practice began in 1999. On a private basis, a petition was won in the German Parliament, where only 6.75% of all petitions are successful. But, by the dental chamber's veto, the state has decided not to accept the dental hygiene profession. After more than 30 years of being in her country and seeing the dental hygiene profession making no progress, Beate Gatermann decided to open her own office (http://www.dentalhygienepraxis.de). In 2004, the Bavarian Dental Chamber announced that by doing prediagnosis, which is obligatory for the computer accounting programme to operate, she was, in essence, practicing dentistry. Since then, she has become the 'black sheep' of the German dental world and is currently involved in court proceedings. The cost of the accounts in her office are *similar* to fees in a dental office and she charges the same amount as in other European countries, about 100€ per hour. In German dental offices, fees can vary from 100 to 400€.

A programme with a baccalaureate level education could influence the profession of dental hygiene in Germany. Germany will have to follow legal methods and accept this necessary profession. All professions in Germany must be legalized before fees can be legal established. At the moment dentistry in Germany does not work according to its own rules and regulations. Germany will have to adapt to global improvements.

This advancement in Germany would open a completely new avenue for thousands of women and men. It would be a very important step in this country, as the economy is at its lowest in 60 years.

Success and chances for change are huge. *Insurance companies showed much interest in legalizing the dental hygiene profession to accurately reflect what procedures are being performed and by which professional!*

Summary

It was at the EUROPERIO 2003 in Berlin that presented the opportunity to report about Independent Dental Hygiene Practice Worldwide. At that time not all countries were able to present their reports, so a symposium was organized in Madrid and an improved version was presented at the IFDH's *Symposium on Dental Hygiene*. The reports show that independent practice exists in different countries and yet in similar forms.

The reports show that in Europe more countries have adopted independent practice in the form of autonomous offices for dental hygienists than anywhere else worldwide. Some countries are still at the beginning of the process, and some countries are able to administer local anaesthetics, expose radiographs and prescribe necessary dental hygiene aids.

Regarding independent practice, it is very important to acknowledge the division between the professions of dentistry and dental hygiene. Dental hygienists should focus on the area of prevention, although therapeutic procedures can be performed. The different variations of independent practice illustrate that we still have a long way to go to achieve equal standards worldwide, which includes education. It is wishful thinking that one country can learn from another's

experience! It is hoped that prevention will be the norm and that patients will have a positive attitude towards the dental hygiene profession appreciate and know about the services our profession provides. Cooperation across national borders is important to make sure education and practice is equivalent around the world.

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