

Medical Health Insurance Systems in Europe, USA, Canada, and Australia

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Abstract : One of the goals of Universal Health Coverage is to create a healthcare system to provide the chance of equality in access of healthcare services for all people to enjoy the highest possible level of health with no financial hardship. Aging population and slow economic growth are prompting most developed nations to readjust their social security systems. The developed nations share some common challenges: how to fulfil the fair access to health care for all people with sufficient finances and high quality.

This report focuses on the medical health insurance systems of seven nations in European countries, Canada, Australia, and USA. We summarize the characteristics and challenges of the public health insurance systems, based on research reports and government records in 1995 to 2019. Some universal healthcare systems are based on government-funded or social insurance, others are based on the need for people to purchase private health insurance. In the most developed nations we picked up, especially the coverage for dental healthcare is partially covered or completely not covered in general, though dental treatments are often a high financial burden for patients. There is potential for improvement so that wide range of people can receive the higher quality of dental healthcare with no financial burden.

Key words : Universal Health Coverage, fair access, sufficient finances, high quality, cross-border

Introduction

Universal health coverage (UHC) is defined as all people and communities can use the promotive,

preventive, curative, rehabilitative and palliative health services they need, of sufficient quality to be effective, while also ensuring that the use of these services does not expose the user to financial hardship¹⁾. This message has been repeatedly reinforced since the 1978 Declaration of Alma-Ata. In 2005, the World Health Organization endorsed UHC as a central goal and stated that health systems must “ be further developed in order to guarantee access to necessary services while providing protection against financial risk^{2, 3)}. ” The

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definition of UHC embodies three related objectives:

1. Everyone who needs health services should get them, not only those who can pay enough;
2. The quality of health services should be good enough to improve the health of those receiving services;
3. People should be protected against financial-risk.¹⁾

UHC can be understood as broad legal, rights-based, social humanitarian, health economics and public concept⁴⁾.

With acceleration of progress aging and slow economic growth, the developed nations share some common challenges: how to fulfil the fair access to health care for all people with sufficient finances and high quality. This report is summarized the characteristics and tasks of the public health insurance systems of representative seven countries in Europe, USA, Canada, and Australia.

Medical health insurance systems

Based on the financial resources, public medical health insurance systems are mainly divided into three types: Tax Revenue Mode like United Kingdom, Sweden, Australia, and Canada in Table1; Social Insurance Model financed from compulsive premiums like France and Germany in Table2; and the mixture of Tax Revenue Model and Social Insurance Model like America in Table3.

1. Nations adopted healthcare systems based on the financial resources from tax

1-1. United Kingdom

[Medical insurance system]

National Health Service (NHS) established in 1948 provides comprehensive health services including disease prevention, rehabilitation for all people. Central government provides medical

health services with national tax revenue. The financial resources are 80% or more from tax, and more than 18% from the partial contributions of National Health Service Premiums. The budget is allocated in priority between medical security system and other public works. Management costs can be reduced with nationwide collection of financial resources. This budget system is relatively easy to control the entire healthcare cost⁸⁾.

Except for medical emergency care, National Health Service is in the system that a patient see a pre-registered General Practitioner (GP), first. After that, if necessary, a GP introduces the patient to see consultants in hospital. One percent or more of national health expenditure occupies private medical treatments with private insurance and full amount of user charge⁵⁻⁸⁾. Per-capita payment system is adopted that GPs receive the reimbursement of medical fees according to the number of registered patients. The more registered patients keep good health through preventive activities, the lower health service consumption is needed. Since the surplus is the income of GPs, the preventive activities are willingly promoted and incorporated into the healthcare systems⁸⁾.

General medical treatments are free of charge for all residents who preregistered their own General Practitioner. One can basically see hospital consultants introduced by the General Practitioner with no charge.

Prescription drugs in outpatient is fixed-rate share per prescription. Eyesight test and a part of long-term treatments are full amount of user charge. People aged 60 years or more, less than 16 years, low-income household, and pregnant are exempted from their payments⁵⁻⁸⁾.

[Dental insurance system]

There are three bands of fixed rate charges for all NHS dental treatments. As from April 2019, the

Table 1 Public Health Insurance Systems on Tax Revenue Model

Country	Insurance Systems	Base Laws	Main Administration	Financial Resources	Eligibility	Benefits	User Charge	Covering ratio	Dental Health Insurance
UK	National Health Service: NHS	The National Health Service Act, 1946	Department of Health	<ul style="list-style-type: none"> • Tax revenue: 80% or more • Partial contributions from National Health Insurance premiums: more than 18% <p>Employees : 2.05% of the payroll, from 157£ to less than 866£ a week 1% of the payroll, 157£ or more a week Self-employed: 1% of annual profit, 8,164£ or more</p> <ul style="list-style-type: none"> • Patient share: more than 1% - costs of prescription drugs in outpatient, dental treatments. • Income-free of low-income people have no payment obligation for National Health Insurance premium. 	All residents (All adults and children)	<ul style="list-style-type: none"> • First: see a pre-registered General Practitioner. <p>If necessary: the GP introduces to see specialists in hospitals.</p> <ul style="list-style-type: none"> • Provided comprehensive health services including disease prevention, rehabilitation, and community health. 	<ul style="list-style-type: none"> • General medical treatments : free • After the diagnosis of the GP, treatment costs of hospital specialists introduced by the GP: basically free • Prescription drugs in out-patient : co-payment per prescription • Eyeglass test: 100% out-of-pocket payments • A part of long-term treatments : 100% self-payments • Exempted from the payments : people aged 60 years or more, less than 16 years, low-income household, and pregnant • Dental treatments : basically, 80% share of costs. Band 1 dental treatment ¹⁾: 629.7 Band 2 dental treatment: 682.10 Band 3 dental treatment: 4269.30 as from April 2019 	100%	Yes
Sweden	Hälsörsch sjukvårdslag ²⁾	County Councils or Municipalities called Landsting	<ul style="list-style-type: none"> • Taxes levied by Landsting (mainly financed through resident and income tax) and partial share of patients 	All residents	<ul style="list-style-type: none"> • Medical allowance in kind: out-patient and in-patient care 	<ul style="list-style-type: none"> • Out-patient care: setting fixed visit copayment, according to first visit or not, age of patient, and destination. Free for people aged under 20 yrs are free. • In-patient care: setting fixed copayment per day, according to age, income, and hospitalizations of patients, 50-100 Krona copayment per day and free for people aged 18 to 20 yrs in most Landstings • Treatments of special case of diseases or injuries : one can receive national subsidation • Medical drugs : upper limit is 0.05 times of prices basic sum in a year — 2,200 Krona in 2017 • Dental treatments for people aged less than 20 yrs : free, covered by Landsting (mainly resident and income tax) • Dental treatments for people aged 20 yrs or more : partial aids of treatment fees from invalidity insurance 	—	Yes	

Continue

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Country	Insurance Systems	Base Laws	Main Administration	Financial Resources	Eligibility	Benefits	User Charge	Covering ratio	Dental Health Insurance
Australia	Medicare	Health Insurance Act 1973	Federal government	<ul style="list-style-type: none"> • Medicare Levy: 2% levied on taxable income for a nation • Government-funded from general tax revenue: 75% 	All residents	<ul style="list-style-type: none"> • Out-patient care of GP and medical consultants • Medical drugs (prescriptions) • In-patient care and treatments for long-term treatments of chronic diseases, emergency transport public hospitals 	<ul style="list-style-type: none"> • Medical services: free, including out-patient care of GP and medical consultants, medical drugs (prescriptions) • In-patient care and treatments: free, as a Medicare patient in public hospitals • Self-payments for full amount: ophthalmology, and treatments for long-term treatments of chronic diseases, emergency transport public hospitals • Dental treatments: self-payment for full amount of charge, including orthodontics 	100%	No
Canada	Medicare ³⁾	Canada Health Act	Each state of governments	<ul style="list-style-type: none"> • Tax revenue for general purposes • Expense of state government and block subsidy of federal government 	<ul style="list-style-type: none"> All residents • A person having Canadian nationality • A permanent resident • Immigrants require three-month waiting term • International students cannot join in some states 	<ul style="list-style-type: none"> • Benefits for in-patient care, medical drugs, and out-patient care • Basically out-of-pocket: medical prescription, dental treatments, ophthalmology, rehabilitation, and nursing care expenses 	<ul style="list-style-type: none"> • Ophthalmology: basically self-payment • Rehabilitation: basically self-payment • Nursing care: basically self-payment • Dental care: basically self-payment 	100%	No

1) There are three bands of fixed rate charges for all NHS dental treatments.

2) Landsting: The representative bodies of local self-government of each county of Sweden, equivalent to a Japanese Prefecture. It mainly provides medical services, setting and managing medical facilities. Medical staffs such as a doctor and nurse work as a public servant of Landsting. Basically, the costs are covered with tax revenue of Landsting, mainly financed from resident and income tax, and a part sharing of patients.

3) Medical healthcare system in Canada: Two kinds of doctors: General Practitioners and Medical Consultants.

First, a patient see a General Practitioner. After that, if necessary, GP introduces the patient to see hospital specialists. A patient cannot make a medical specialist's first appointment without an introduction letter from GP.

Table 2 Public Health Insurance Systems on Social Insurance Model

Country	Insurance Systems	Base Laws	Main Administration	Financial Resources	Eligibility	Benefits	User Charge	Covering ratio	Dental Health Insurance
France	General System Mainly consisted of commerce and industry's workers	Social Security Code	CNAMTS: Caisse Nationale de l'Assurance Maladie des Travailleurs Salariés	<p>1. Premiums Based on gross earnings, • 0.75% levied on employees • 12.89% levied on employers</p> <p>2. Public Share • 36% share of the employees as general social contribution (CSG) • 15.2% of earmarked taxes imposed on tobacco, alcohol. • 1.5% of state subsidies • 44.5% of total revenues for health insurance premiums (2016)</p>	<p>All population compulsory join the systems according to each occupation. 1. Systems for the employees : • General system: registered by 92% of all nations, including workers and their retired in commerce and industry • Others are civil servant system, local public official system, and special system such as Paris Travel Bureau, sailors, and soldiers. 2. Systems for non-employee : self-employed, priest.</p>	<ul style="list-style-type: none"> • Basically reimbursement • Hospitalization: directly paid to medical institution 	<ul style="list-style-type: none"> • Out-patient care: 70% • In-patient care: 80% • General medical drugs: basically 65% • Most of user charge: covered by benevolent association and mutual benefit association. The remainder: the final self-payment. • Dental treatments¹⁾: provided 70% compensation from the state for people covered by the French Social Security called Carte Vitale. Orthodontics: not covered under the state system. 	61.5 million: 92% of all residents	Yes
Germany	Statutory Health Insurance (Gesetzliche Krankenkassenversicherung)	SGB V	Sick Funds	<ul style="list-style-type: none"> • 14.6% general rate of insurance premium: divided fifty-fifty and 7.3% common rates with employer-employee contributions • Additional rate of insurance premium²⁾ : 1.1% levied on insured person (estimated average in 2017) • A certain rate of State subsidy 	<ul style="list-style-type: none"> • Employees not exceeded a fixed income, self-employed traders of agriculture and forestry • No compulsory application for employees, self-employed, and public servants exceeded a fixed income. Basically, required to join national health insurance or private health insurance. 	<ul style="list-style-type: none"> • Basically, payment in kind: Medical allowance Preventive allowance Medical rehabilitation allowance Home nursing allowance • Cash payment: invalidity benefit 	<ul style="list-style-type: none"> • Out-patient care: free from 2013 maximum covering 28 days a year • In-patient care: 10 Euro per day — (2018) • Medical drugs: 10% of product prices — minimum 5 Euro and maximum 10 Euro • Dental treatments for persons aged 18 yrs or more: normal insurance benefits plus additional benefits according to the choice of the insured. • Dental treatments for persons aged less than 18 yrs: the sick funds provide full compensation for surgical dental treatment and necessary orthodontist care, and certain prophylactic treatments with free of charge 	87% of all resident (2018)	Yes

1) Dental treatments in France: Normally charge full amount for treatments at once, and then, 70% of most dental treatments for adults and 100% of them for children aged 6 to 18 will be reimbursed.

2) Additional rate of insurance premium: The charged insurance premiums are collected in the medical fund and divided into each disease safe as subsidies. The disease safe which is hard to cover spending with the subsidies from medical fund imposes additional rate of insurance premium on its on. This additional rate of insurance premium is levied on only insured person. To avoid the overburden of low-income people, people imposed 2% or more of their income as an additional rate of insurance premium can receive subsidy of tax revenue for the excess.

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Table 3 Public Health Insurance System on mixed model (both Social Insurance Model and Tax Revenue Model)

Country	Insurance Systems	Base Laws	Main Administration	Financial Resources	Eligibility	Benefits	User Charge	Covering ratio	Dental Health Insurance
USA	Medicare ¹⁾	Social Security Act 18	Ministry of Health Security and Welfare	<ul style="list-style-type: none"> • Part A: social security tax on working generation • Part B: divided fifty-fifty between employers and employees and full amount share on the self-employed • Part B: monthly 134~428.6\$ levied according annual income • Part C, D: depending on each plan 	<ul style="list-style-type: none"> • Individuals aged 65 and older • Individuals younger than 65 with disabilities • Individuals with End-Stage Renal Disease (permanent kidney failure that requires dialysis or a transplant) 	<ul style="list-style-type: none"> • Part A: (FH: Hospital Insurance) <ul style="list-style-type: none"> • Compulsory insurance • In-patient care services • Advanced nursing facility care • Part B: (MI: Medical Insurance) <ul style="list-style-type: none"> • Voluntary insurance • Doctor services for out-patient care • Part C: (Medicare Advantage) <ul style="list-style-type: none"> • Voluntary insurance • For insured person of both Part A and B, private insurance bears benefits, equal or more than those of Part A and B. • Part D: (Medicare Prescription Drug Plans) <ul style="list-style-type: none"> • Voluntary insurance • Covering prescription cost for out-patient care 	<ul style="list-style-type: none"> • In-patient care (Part A): <ul style="list-style-type: none"> • Sharing 1,340\$ deductible per hospitalization • Free of charge during 1~60 hospitalizations • Sharing 335\$ out-of-pocket payment per day, during 61~90 hospitalizations • Sharing 670\$ out-of-pocket payment per day after 91 hospitalizations • Out-patient care (Part B): <ul style="list-style-type: none"> • Annual sharing 183\$ deductible • Sharing 20% out-of-pocket payment for exceeding amount of deductible • Medicare Advantage Plan (Part C): extra benefits such as routine dental, routine vision, Medicare prescription drug coverage • Part C and D: depending on each plan • Dental coverage: No coverage for routine dental work such as dental exams, cleanings fillings, crowns, bridges and dentures under Original Medicare (Part A and B) 	55.62 million (17.2%)	No
	: Social Insurance Model		Medicaid service center (CMS) (Part A and B)	<ul style="list-style-type: none"> • The National Treasury covers balance of payments for private insurance premiums 	<ul style="list-style-type: none"> • Low-income adults and children • Pregnant women • People with disabilities 	<ul style="list-style-type: none"> • Regular medical services: in-patient care and medical services • Long-term nursing care 	<ul style="list-style-type: none"> • Dental coverage for children under the age of 21 including <ul style="list-style-type: none"> • pain relief and infection treatment • tooth restoration • dental health maintenance • any service determined to be medically necessary • Dental coverage for adults over the age of 21 or more <ul style="list-style-type: none"> • varies by the type of service according to each federal government program for low-income families 	62.49 million (19.3%)	Yes
	: Tax Revenue Model	Social Security Act 19	Ministry of Health Security and Welfare	<ul style="list-style-type: none"> • No premiums • The federation shares a part of cost that the state requires for compensation on duty. 	<ul style="list-style-type: none"> • People with disabilities 	<ul style="list-style-type: none"> • Long-term nursing care 	<ul style="list-style-type: none"> • Dental coverage for children under the age of 21 including <ul style="list-style-type: none"> • pain relief and infection treatment • tooth restoration • dental health maintenance • any service determined to be medically necessary • Dental coverage for adults over the age of 21 or more <ul style="list-style-type: none"> • varies by the type of service according to each federal government program for low-income families 	62.49 million (19.3%)	Yes
			Management: each state						

1) USA has not achieved Universal Health Coverage. The medical health system centers on private insurance. Private insurance or medical insurance provided by employers — a kind of private insurance that employers provide employees and 60% of people join — play a central role.

current dental charges in 2019 are as the following lists⁹⁾ :

● **Band 1 (£22.7)**

: Examination, X-rays, scale and polish, preventive treatments, adjusting false teeth, treating sensitive cementum

● **Band 2 (£62.10)**

: Treatments in Band 1 Plus restorations, root canal treatment, extractions, oral surgery, and SRP

● **Band 3 (£269.3)**

: Treatments in Bands 1 and 2 plus crowns, bridges, dentures, inlays and onlays, orthodontic treatment and appliances

● **Urgent (£22.70)**

: Emergency treatment and relief of pain

Treatments such as veneers and braces are only available on the NHS if there's a clinical need for them (not for cosmetic reasons). Similarly, other cosmetic treatments, such as teeth whitening, are not available on the NHS^{5-8, 10)}.

1-2. Sweden

[Medical insurance system]

Sweden has a universal healthcare system, primarily government-funded, decentralized by county councils and municipal governments which are responsible for providing services^{5, 8, 10, 12)}. Most healthcare is provided with a national social insurance system. The Swedish healthcare system is mainly financed through taxed levied by county councils and municipalities and partial sharing of patients. County councils are political bodies, regulating medical prices and level of services in each.

Public coverage is extensive and small fees paid by patients, capped at 1,100 Krona per year in 2017. Swedish residents do not have to pay more than 300 Krona for each doctor visit with primary care. Free for services is provided for residents aged under 20 for out-patient care and aged 18 to

20 for in-patient care in most county councils. Fixed visit copayment is set for out-patient care, according to first visit or not, age of patient, and treatment destination. Fixed copayment per day is set for in-patient care, according to age, income, and hospitalizations of patients. Prescription drugs are not free, capped at 2,200 Krona per year. The government covers expenses exceeded this amount. Pharmacies are connected with a centralized system that medical history of each patient is stored, available for all pharmacies⁵⁾.

Health care is more likely to be given priority in local government with few other policies to compete, compared with the state. Regional disparities and movement of the working population from rural areas to cities lead to regional disparities and unfairness in healthcare resources. The government needs to rectify this problem⁸⁾.

[Dental insurance system]

Oral healthcare is the responsibility of county government, though counties are not required to provide the services themselves. Dental care is not included in the general health care system, but is partly subsidized by the government.

Dental care for children and adolescents^{5, 10-14)}

All dental care for children and adolescents is free of charge up to the age of 19. Some country councils have extended to include general dental care for young people over 20. Care is provided on a regular basis and is individually targeted. The dental care up to the age of 19 includes dental treatments with specific dentists. The dental care is financed and provided through the counties carried out either by dentists within the Public Dental Service (PDS) or Private Practitioners (PP). The most of dental care for children and adolescents is carried out within the PDS.

Dental care for adults^{5, 10–14)}

Dental care for adults is provided by dentists from both PDS and PP. Adults pay almost full amount of dental charge by themselves. Social insurance system covers parts of the service costs and reimburses the patient for the majority of dental care, regardless of the dental care which is provided within the PDS or the PP.

A dental care voucher or dental grant of €15 is given to population aged 30 to 74 every year. For those aged 20 to 29 and 75 or older, the total is at the price of €30 per year. Not all kinds of dental care are reimbursable. It is prioritized for preventive care and disease treatment. The grant can be saved for two years.

1–3. Australia

[Medical insurance system]

Australia has a universal health care system with primary care and General Practitioners similar to UK, mainly funded by Medicare since 1984. Healthcare is delivered by both government and private companies which are covered by Medicare^{15–20)}. It is mainly funded by the government at national, state and local government levels as well as private health insurance. Medicare is funded by a Medicare levy which is a 2% levy on inhabitants' taxable income over a certain income. Higher income earners pay 1-1.5% additional levy called a Medicare Levy Surcharge if they do not have private insurance. As for exceptions, residents with certain medical conditions, foreign residents, low-income earners exempt from paying the levy.

The federal government-administered Medicare insurance scheme covers the majority of costs of primary health services. It covers a part of out-patient care, full amount of charge for in-patient care.

[Dental insurance system]

Patients must pay full amount of charge for dental care services including orthodontics, unless they hold a Health Care card, which may entitle them to subsidized access¹⁵⁾.

1–4. Canada

[Medical insurance system]

Medical healthcare in Canada is delivered through the provincial and territorial systems of public burden funded by tax for all eligible residents with medical services including in-patient and out-patient care called Medicare^{5, 21–25)}. It provides coverage for 70 percent of healthcare needs. The remaining 30 percent is patients' self-payment services such as prescription drugs, optometry, and rehabilitation.

[Dental insurance system]

Dental care is almost completely private payments with 60 percent of employment-based insurance and with 35 percent of self-payments, not covered by public medical insurance guided the Canada Health Act of 1984. Dental care and regular checkups are highly relied on the affordability of people to pay those fees^{5, 23–25)}.

2. Nations adopted healthcare systems based on the financial resources from social insurance

2–1. France

[Medical insurance system]

Health care in France is provided as a national responsibility. The French health care system has been one of universal health care from 2000, providing two fundamental rights for access to care: a right to health insurance for anyone in stable and regular, and a right for the most disadvantaged, to a free coverage, with exemption from fee.

The finance in the French health care system is a Social insurance model which premiums are

based on income in Tabe2^{5, 10, 26)}. The French health care system is funded in part by compulsory health contributions levied on all salaries, paid by employers and employees, in part by central government funding. The state has been increasingly involved in controlling health expenditures covered by statutory health insurance, financed by employer and employee payroll taxes, general social contribution, earmarked taxes levied on tobacco and alcohol, and state subsidies.

All legal residents compulsory join the systems according to each occupation as statutory system, where Caisse is set as a management system of health insurance of occupations:

1. Systems for employees include general system which is registered by 92% of all nations including workers and the retired in commerce and industry. Others are civil servant system, local public official system, and special system such as Paris Travel Bureau, sailors, and soldiers.
2. Systems for non-employees include self-employed and priests.

Insurance benefits are based on reimbursement, except for hospitalization which is directly paid to medical institutions. The out-of-pocket payments for patients are basically composed of 70% out-patient care, 80% in-patient care, and 65% general medical drugs. In many cases, the most of user charge is covered by benevolent association and mutual benefit association. The remainder is a final self-payment.

[Dental insurance system]

Citizens can claim 70% of the fee back from the state, if they are covered by the French Social Security called Carte Vital. Normally, Patients will charge full amount for treatments at once, and then, 70% of most dental treatments for adults and 100% of them for children will be reimbursed.

Orthodontics is not covered under the state system. Basic dentistry including consultations, cavities, and tooth extraction is covered by the state, but more complex or cosmetic treatments such as teeth whitening and a tooth implant are usually pricier. The state will not give any money back for these non-essential or infrequent treatments. Patients will have to shoulder the costs themselves or take out private insurance. Although, dental prostheses will be fully reimbursed starting in 2021 under the system.

Children are offered free dental check-ups every three years between the ages of 6 and 18. You will receive a letter from the Caisse Primaire d'Assurance Maladie, which entitles your children to their regular examination. Take the letter to the dentist, and you will not be charged for the consultation^{5, 10)}.

2-2. Germany

[Medical insurance system]

Germany has a universal health care system paid for by a combination of statutory health insurance (Gesetzliche Krankenversicherung) and private health insurance (Private Krankenversicherung), dating back to the 1880s^{5, 10, 27-30)}. It is a basically legal obligation for the whole population living in Germany to have public or private health insurance. Statutory health insurance is based on the worker's salary, covering majority of people. Salaried workers and employees with a yearly income below 60,750 Euros (2019)²⁷⁾ are automatically enrolled into one of 130 public non-profit "sick funds" at common rates for all members. The employer pays 7.3%, half of the contribution, and the employee pays 7.3% of the other half. Self-employed workers must pay all contribution themselves.

Salaried workers and employees with a yearly income above 60,750 Euros (2019), students and

civil servants, and self-employed workers with no compulsory enrollment into public health insurance can opt for private health insurance, charging risk-related contributions.

[Dental insurance system]

Dental fees, both inside and outside sick funds and insurance based care, are regulated. The sick funds provide full reimbursement for surgical dental treatment and necessary orthodontist care for persons aged less than 18. Persons under 18 years of age are also eligible to receive certain prophylactic treatments with free of charge. Traditionally, public health insurance has imposed few cost-sharing mainly for pharmaceuticals and dental care. In 2004, co-payments were introduced for adults aged 18 years or more to visit physicians and dentists. Dental treatments exceeding the pre-defined range of necessary care and dental prostheses make co-payments of the insured person. Those co-payments will be reduced for persons to keep healthy teeth.

Before seeking general care from the statutory health system, the patient must have a voucher from the sick fund. This voucher is both a certificate to demonstrate entitlement to care and the dentist's claim form for reimbursement of the fee-for-service¹⁰⁾.

3. The Nation adopted healthcare system based on the financial resources from both tax and social insurance

USA

Traditionally, there is no public medical health insurance system targeted for all residents in the US where the main medical security has been traditionally covered with private insurance. Public health insurance coverage provides the primary source of coverage for the only specific age and persons: most seniors aged 65 years or more, and

low-income person, children and their families who meet certain eligibility requirements. In this manuscript, we describe these three types as public health insurance system.

[Medical insurance system]

Health insurance in the US includes private insurance, and social insurance programs such as Medicare as well as social welfare programs like Medicaid and the Children's Health Insurance Program (CHIP) in Table 3^{5, 38-40)}. Public health insurance coverage provide the primary source of coverage for most seniors, and low-income children and their families who meet certain eligibility requirements.

Medicare provides health insurance for seniors aged 65 and over and totally or permanently disability individuals, and people with end stage renal disease and ALS. Medicare requires considerable cost-sharing and 90 percent of Medicare enrollees have some kind of supplemental health insurance.

Medicaid is a social welfare or social protection program which provide to people who cannot afford health coverage, instituted in 1965. It is funded jointly by the federal government and the states, and administered at the states. CHIP is a federal-state partnership to serve health insurance for certain children and their families who do not qualify for Medicaid but cannot afford to enroll private insurance³¹⁻³⁷⁾.

[Dental insurance system]

Original Medicare (Part A and B) typically does not cover routine dental care such as dental exams, cleanings, fillings, crowns, bridges, and dentures³⁸⁾.

Some exceptions are the cases of the medical reconstruction of the jaw due to the suffering an accident in damage to the jaw, having a disease involving the jaw, and a tooth extraction directly

caused by the disease. Medicare Advantage Plan, private insurers, includes everything that Original Medicare covers and covers additional dental coverage such as:

- Cleanings
- Exams
- X-rays
- Diagnostic services
- Restorative services (fillings)
- Root canal treatment
- Periodontal disease treatment
- Extractions
- Crowns, bridges, implants, and dentures

In spite of Medicaid dental benefits, the coverage is limited and includes only essential services^{39, 40}. Children under the age of 21 are provided as part of Medicaid's Early Periodic Screening, Diagnosis and Treatment (EPSDT) program. Under this program, children receive periodic oral evaluations, routine preventive dental care every six months, restorative, and emergency dental care.

The Medicaid Orthodontic Benefits for children under 21 years old with severe physically handicapping malocclusions. The coverage is limited to three years of treatment and one year of retention care.

Medicaid dental coverage for adults over the age of 21 or more varies the type of services according to the minimum standard set each federal government³⁹. Major covering services are preventive dental care such as checkups, oral exams, cleaning, bitewing X-rays, and sealants; restorative services, crowns, dentures, orthodontic braces to treat an accidental injury, TMJ, or sleep apnea; root canal treatments and oral surgery; dental work for the cases medically necessary across the country. Medicaid rarely covers dental implant costs in full. Medicaid does not cover cosmetic dental procedures for adults under any cir-

cumstances.

Discussion

Tax-based financing system is relatively easy to control the entire healthcare cost in healthcare system like UK^{8, 41}. While, quality and inefficiencies of health services are always problems such as long waiting time of treatments and hospitalization. In spite of dental treatments which need large financial burden for patients, generally, it is partially covered with public dental health insurance or almost full amount of direct payments for patients in most developed nations we picked up. Due to a shortage of dentists in public healthcare services, long waiting time and financial burden to dental treatments motivates for patients to move and receive cross-border health care in foreign countries^{8, 42}. Problems relating the free movement of patients and healthcare professionals within EU member states need to deal with across borders⁸. It is necessary to discuss topics of healthcare systems not only for one country as well as the entire EU member states or global scale.

It is difficult to control the increasing medical costs because of fee-for-service system in social insurance model based on the financial resources from compulsory premiums like France. The increase in medical expenses are compensated for the increase in health insurance premiums. This has a negative effect on the national economy itself, such as a declining in purchase motivation of people^{8, 43}.

While there is a nation where public health insurance coverage provide the primary source of coverage for the only specific age and persons: most seniors aged 65 years or more, and low-income children and their families who meet certain eligibility requirements like USA. It would need to adjust and enlarge the range of application

for public healthcare system which all people receive the fair access to health care with sufficient finances and high quality.

Conclusion

In the most developed nations we picked up, especially the public health coverage for dental treatments partially covered or completely not covered in most cases, though dental treatments are often a high financial burden for patients. USA is a country where public health insurance coverage provide the primary source of coverage for the only specific age and persons. There is potential for improvement so that wide range of people can receive the higher quality of health care with less financial burden within the public health insurance.

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