Aim

The aim of this introduction to Universal Health Coverage and the treatment of non-communicable diseases (NCDs) in Mexico is to identify related policies, progress and inconsistencies with a view to call upon a broad base of social organizations to participate in the promotion of what many people recognize as the hot topic in the field of health: being able to offer all of the necessary services to everybody in the country whilst ensuring quality, timeliness and sufficiency.

Recognizing that NCDs in the world and in this country cause seven out of every ten deaths, and that the situation is exacerbated by smoking, the harmful consumption of alcohol, unhealthy diets and lack of physical activity, we believe that the participation of legislators, researchers, health authorities, social activists and people living with NCDs is important and that they should be involved in preventing and supporting the management of such risk factors, for which we were able to establish respective alliances.

By way of bibliographic and newspaper research activities, in person or supported by electronic resources, as well as personal interviews with experts and legislators, we weighed up the appropriateness of promoting an intensive campaign to support Universal Health Coverage and NCDs from May to December 2021.
1. Introduction
Adriana Rocha Camarena

Since the Declaration of Alma-Ata in 1978, unequal access to healthcare in and among countries and measures to consolidate universal access to healthcare have been a central issue on the global agenda. In 2005, the member states of the World Health Organization (WHO) undertook to develop funding systems to enable access by all to comprehensive health services at a reasonable cost and protection from catastrophic expenditure. The concept of Universal Health Coverage (UHC) embodies this commitment.

UHC comprises three dimensions: the people who benefit from the services (affiliation), the services provided (coverage) and the proportion of the costs covered (financial protection).

There are three progressive stages recognized in connection with these dimensions:

1. Universal affiliation: guaranteed access for all to health services financed by way of public insurance.
2. Universal coverage: regular access to a package of comprehensive health services with financial protection for all.
3. Effective universal coverage: guaranteeing the maximum achievable level of health outcomes for all based on a package of high-quality services avoiding financial crises by reducing out-of-pocket expenditure.

2. The National Health System (SNS) in Mexico

The SNS is made up of the public system, which comprises: the Mexican Institute of Social Security (IMSS), the Institute of Social Security and Services of State Workers (ISSSTE), Mexican Petroleum (PEMEX), the Department of National Defence, the Department of the Navy, the Department of Health and IMSS-Bienestar, as well as private institutions that provide treatment to people who take out medical insurance.

1. As part of a plan to tackle poverty, the federal government established COPLAMAR (General coordination of the national plan for deprived areas and marginalized groups). In 1979, COPLAMAR signed a coordination agreement with the IMSS with a view to extending health service coverage in marginalized areas. The IMSS-COPLAMAR agreement changed names in accordance with the period of validity of the programmes from Pronasol to PROGRESA, Oportunidades and Prospera. The agreement is currently known as IMSS-Bienestar [welfare].
The IMSS (1940) and the ISSSTE (1959) adopted the social security model, which excluded the unemployed. Health has been a constitutional right, regardless of whether or not people are employed, since 1983. The access divide increased due to low investment, high out-of-pocket expenditure and inequality in terms of public resources and state contributions.

2003 saw the creation of the Social Health Protection System (SPSS), which restructured the SNS financially in order to achieve universal coverage. The SPSS covered Public Health Insurance (SP) for people with no coverage, with public and voluntary health insurance; the Catastrophic Health Expenditure Fund (FPGC) to cover costly illnesses; the Seguro Médico Siglo XXI [XXI Century Medical Insurance scheme], with health and preventative treatment for the under-fives; and the IMSS-Bienestar programme. During its initial phase, the SPSS reduced the percentage of the population without health insurance by approximately 60% in 2000 and by 18% in 2012.\(^5\)^\(^6\).

The present government replaced SP with the National Institute of Health for Welfare (INSABI) on 1 January 2020.\(^7\) It has the same objective as SP, although there are substantial differences in its management to its management, operation, financing and internal structure.

3. The three dimensions of UHC in Mexico’s SNS

Affiliation and coverage are not synonymous. Universal affiliation means that everybody can access a uniform package of services. According to the INEGI [National Institute of Statistics and Geography], 82.2% of the population is covered by some kind of health system.

![Image](https://example.com/image.png)

**United Mexican States**

<table>
<thead>
<tr>
<th></th>
<th>IMSS</th>
<th>ISSSTE</th>
<th>PEMEX, SDN or SM</th>
<th>Public Health Insurance or Insurance for a New Generatio</th>
<th>Private institution</th>
<th>Other institutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>People</td>
<td>39.2%</td>
<td>7.7%</td>
<td>1.2%</td>
<td>49.9%</td>
<td>3.2%</td>
<td>1.5%</td>
</tr>
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SPSS affiliates are not beneficiaries of social security institutions. After 15 years of operation of the SP scheme, affiliation increased from 5.3 million people in 2004 to 51.9 million at the end of 2019 and, in 2018, the IMSS-Bienestar programme covered 31.1 million people who had no social security. Although 17.3% of the population is not affiliated with any health service,\(^8\) SP affiliation reached a level considered to be total. To use INSABI services, no affiliation is necessary: one has only to present official identification. The services operate based on criteria of universality, equality, inclusion and no cost.

There are two types of IMSS affiliation: i) compulsory and voluntary employee insurance schemes, and ii) insurance for the unemployed. In December 2018, there were 82,278,768 IMSS affiliates\(^9\), including: people in employment, pensioners (due to inability to work, disability, widowhood, orphanage, early retirement and retirement), spouses of workers or pensioners and children under the age of 16 of people with insurance or pensioners.

In 2019, the ISSSTE registered 13,478,872 affiliates\(^10\). Its beneficiaries are employed people, pensioners, their children under the age of 18, mother or father, spouse and, in special circumstances, children over the age of 18.

Treatment provided by the IMSS-Bienestar programme is underpinned by the Modelo de Atención Integral a la Salud [Comprehensive Healthcare Model] (MAIS), which has three components and two cross-cutting themes.

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5. Instituto de Seguridad y Servicios Sociales de los Trabajadores del Estado. Anuario Estadístico 2019
Components:
• Public health.
• Healthcare: outpatient and inpatient.
• Prospera healthcare: health actions, nutrition and self-care.

Themes:
• Community: health services with an intercultural perspective; community network capacity-building and guidance; water management, waste and vermin control; gender-based approach and prevention of violence against women.
• Social auditing and health citizenship.

The Seguro de Enfermedades y Maternidad [Sickness and Maternity Insurance] (SEM) provides IMSS beneficiaries with assistance in the event of illness that is not work-related or maternity, medical expenses for pensioners by way of the Seguro de Invalidez y Vida [Disability and Life Insurance] (SIV), Seguro de Riesgos de Trabajo [Occupational Risk Insurance] (SRT) and Seguro de Retiro, Cesantía en Edad Avanzada y Vejez [Retirement, Early Retirement and Old-age Retirement Insurance] (SRCV). The Seguro de Salud para la Familia [Family Health Insurance] covers medical, surgical, pharmaceutical, hospital and maternity care. Pre-existing conditions are excluded, with waiting periods and other exclusions.\(^\text{13}\)

Four insurance schemes are compulsory in the ISSSTE: health, occupational risk, retirement (including early retirement, old-age retirement and retirement due to disability) and life.\(^\text{14}\) The health insurance comprises:
• Preventative medical treatment.
• Curative and maternity medical treatment.
• Physical and mental rehabilitation.

In order to compare access to services by the beneficiaries of each system, sub-categories of the illnesses that each system covers are identified.

In addition to coverage for illnesses, treatment priorities differ. 58% of the IMSS sub-categories refer to non-communicable diseases, whilst 78% of the IMSS-Prospera sub-categories are public health interventions.

### Funding

To avoid catastrophic health expenditure, international experience suggests that state expenditure should be 80% public and 20% private. In Mexico, 50.8% is public expenditure and 49.2% private. Of this, 84% is household out-of-pocket expenditure. The differences between the health systems mean that the proportion differs from one person to the next.\(^\text{15}\)

Public expenditure applies to insured and uninsured people who are beneficiaries of health programmes. From 2013 to 2018, expenditure for the former increased by 0.1% and, for the uninsured, by 1.5%. In 2018, 54.2% of expenditure was allocated to insured people and 45.8% to the uninsured.\(^\text{16}\) Expressed as a percentage of GDP, health expenditure in 2018 was 2.8%, below the OECD average of 6.6%.

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\(^{13}\) Instituto Mexicano del Seguro Social [Mexican Institute of Social Security], 2020.

\(^{14}\) Articles 3, 34 and 35 of the Institute of Social Security and Services of State Workers Act.

\(^{15}\) Department of Health, General Directorate of Health Information, 2019.

\(^{16}\) Department of Health, General Directorate of Health Information, 2019.
Social security, IMSS and ISSSTE funding is based on a scheme in which employees, employers and the state participate. In the IMSS, SEM in-kind and cash benefits are covered in accordance with the following table:

<table>
<thead>
<tr>
<th>In-kind benefits</th>
<th>Employer</th>
<th>Employee</th>
<th>Government</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>13.9% + 6% (if SBC&gt;3 UMA)</td>
<td>2% (if SBC&gt;3 UMA)</td>
<td>13.9%</td>
</tr>
<tr>
<td>Cash benefits</td>
<td>70%</td>
<td>25%</td>
<td>5%</td>
</tr>
</tbody>
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According to IMSS estimates, the expected deficit for 2019 was 57 billion pesos, equivalent to 18% of its income. In 2050, this figure will increase to 280 billion pesos, representing 42% of the estimated income for that year. Irrespective of the increase in the number of affiliates, there will still be a deficit because the planned premium is insufficient.

The ISSSTE health insurance is funded as follows:

<table>
<thead>
<tr>
<th>Institution</th>
<th>Family</th>
<th>Federal government</th>
<th>State government</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active employees and relatives</td>
<td>7.375%</td>
<td>3.92% + 1.5 * social contribution</td>
<td>0.5 * social contribution</td>
</tr>
<tr>
<td>Pensioners and relatives</td>
<td>0.72%</td>
<td>2.75%</td>
<td>13.9%</td>
</tr>
</tbody>
</table>

In 2019, the ISSSTE reported an annual deficit between revenue and expenditure of 16,270,000,000 pesos, the highest reported over the last five years.

In 2018, the IMSS-Bienestar programme handled 13,336,000,000 pesos from sections 12 and 19 of the Agreement on the Seguro Médico Siglo XXI and the Agreement with the Commission for the Development of Indigenous Peoples. It was applied in full. In contrast, the Seguro de Salud para la Familia reported a debt of 61,570,000,000 pesos.

In order to operate the Public Health Insurance [SP], the State Health Services received a federal subsidy for each family insured, as well as the fiscal resources authorized in the Federal Expense Budget. Tripartite funding (from families, states and the federal government) was also available. The SP contributions were as follows:

<table>
<thead>
<tr>
<th>Institution</th>
<th>Family</th>
<th>Federal government</th>
<th>State government</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family contribution in accordance with financial capacity</td>
<td>0.5 * social contribution</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.92% + 1.5 * social contribution</td>
<td></td>
<td></td>
<td></td>
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</table>

The SP operated by way of contributions from affiliates, the Catastrophic Health Expenditure Fund and public funds transferred to states and specialist hospitals. The SP established first-, second- and third-level recovery quotas.

INSABI services and supplies are free of charge, although only the primary and secondary levels of care are covered in IMSS-Bienestar units and general, rural and community hospitals. Tertiary care, which is highly specialized, is not free of charge. The fact that no affiliation is required to use the services is a step forward towards universal access, but the costs of tertiary care place it beyond the reach of the population. The way in which the INSABI is funded is not clear. It proposes to “make medical services completely free of charge”, but needs a larger budget, financial restructuring, increased medical infrastructure, more staff, etc., none of which has yet been determined.
The SNS is faced with a situation complicated by the demographic and epidemiological transition and the greater prevalence of non-communicable diseases, with more people who are ill and requiring long-term treatment and developing complications and comorbidities. The institutions are implementing strategies and actions for the prevention, detection and treatment of diabetes, hypertension, common cancers and cardiovascular diseases.

4. Noncommunicable diseases and UHC, strategies and results

The WHO proposes indicators for essential services grouped into four categories:

- Reproductive, maternal, newborn and child health.
- Infectious diseases.
- Noncommunicable diseases.
- Service capacity and access.

There is a package of indicators for universal coverage that refers to the index of essential service coverage. It notes that, in Mexico, 76% of the population receives such services.21

For non-communicable diseases, the PAHO indicators are as follows 22:
- Prevention of cardiovascular diseases, measured as the percentage of prevalence of normal blood pressure, regardless of whether or not treatment is being provided.
- Diabetes control, measured as the average fasting blood sugar level.
- Cancer screening and treatment, measured as the percentage of women between the ages of 30 and 49 with tomography to detect cervical and uterine cancer.
- Tobacco control, measured as the percentage of people over the age of 15 who have not smoked over the past 30 days.

The following indicators do not cover all NCDs in Mexico, but they illustrate the relationship between UHC and progress made, because of low prevalence, better control of the disease(s) or a reduction in associated mortality rates.

Diabetes and hypertension

The Chronic Disease Information System contains 1,760,447 patients who have been diagnosed with one or more diseases and who have had at least one appointment at one of the 12,405 health centres, distributed as follows:

<table>
<thead>
<tr>
<th>Illness</th>
<th>Patients undergoing treatment</th>
<th>Patients with at least one follow-up measurement</th>
<th>Patients with measurements below the critical level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diabetes</td>
<td>1,046,718</td>
<td>72.5%</td>
<td>44%</td>
</tr>
<tr>
<td>Hypertension</td>
<td>1,158,531</td>
<td>78.2%</td>
<td>67.1%</td>
</tr>
<tr>
<td>Obesity</td>
<td>662,144</td>
<td>79.3%</td>
<td>16.5%</td>
</tr>
<tr>
<td>Dyslipidaemia</td>
<td>507,868</td>
<td>78.5%</td>
<td>54.7%</td>
</tr>
</tbody>
</table>

In 2012, 9.2% of the population had a previous diabetes diagnosis. This percentage increased in 2018 to 10.3%.24 Early disease detection and control to change lifestyle, metabolic control and anticipating complications are fundamental. In the Family Medicine Unit DiabetIMSS modules, interdisciplinary teams educate patients and their families together. In 2018, there were 15.9 million visits and the blood sugar levels of 36.7% of patients were brought down, thus preventing complications25.

The ISSSTE MIDE programme has 185 first-rate medical units, which combine with the AMARTE VA programme to empower patients when it comes to self-care. 40% of participants were able to bring their disease under control.

The highest death rate was recorded in 2016 at 85.97 among men (86.00) and slightly less among women (85.95). The rate continues to increase for both men and women.

According to the ENSANUT (National Health and Nutrition Survey), 16.6% of the population had hypertension in 2012, and this figure rose to 18.4% in 2018. Between 2000 and 2017, the mortality rate increased to 18.65. Death as a result of ischaemic heart disease reached a rate of 81.36 in 2017, the highest to date.

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Acute myocardial infarction (AMI) is common among people with diabetes, hypertension and high cholesterol. The AMI Code is a comparative measure, which was applied in 2017 and 2018 in 35 IMSS delegations, 23 treatment networks, 344 units, 11 UMAEs [specialist medical units], 181 hospitals and 152 UMFs [family medicine units], achieving historic coverage in the country.

Since 2015, 20,378 patients have been treated, leading to a 39.1% reduction among those receiving no treatment to open up the blocked artery causing the infarction, as well a 47-minute reduction in the administration of intravenous medicine, a 92-minute reduction in time spent undergoing haemodynamic therapy and a 58% reduction in mortality.

Cancer is the third leading cause of death in the country. The financial load its management entails causes a critical public health problem, requiring efficient and sustainable health services for prevention, early diagnosis and sufficient treatment.

Mexico has implemented prevention and early diagnosis programmes for cervical, uterine and breast cancer, but many patients are diagnosed in advanced stages. The use of tests to prevent and identify high-risk human papillomavirus (HPV) and greater coverage for the cervical screening test (above 70%) have helped reduce related deaths by more than 40% over the past decade. The same objective is sought through early diagnosis of breast cancer through self-examination, annual medical check-ups and mammograms, to reach 70% of the population between the ages of 40 and 69 with screening mammography. The current coverage is 28%.

Cancer care outweighs coverage in vulnerable parts of the country with scant infrastructure, hence the creation of the Network of State Cancer Centres (CEC) to decentralize and direct attention away from Mexico City, increase coverage and reduce waiting times.

In 2017, the National Population-Based Cancer Register was established for the continuous, comprehensive and systematic collection of information on cancer patients in order to include their personal characteristics. Since 2007, rates of cervical and uterine cancer have dropped steadily, reaching 10.83 in 2019. For breast cancer, the mortality rate has increased, and the highest rate of 19.61 was registered in 2019.

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Tobacco control

Smoking is the main preventable risk factor for NCDs. It is not linked to any disease in particular, but is associated with a set of policies, MPOWER, which seek to reduce the prevalence of consumers and prevent people from starting to smoke. All of the SNS units and treatment levels inform their beneficiaries about the risks of smoking to health, although few institutions offer pharmacological treatment, resulting in a very low smoking cessation rate.

17.6% of the population smoke, 6.4% on a daily basis and 11.1% occasionally. 73.6% want to stop smoking. 56.1% have tried at least once and only 24.4% have received some form of advice. 3.5% received pharmacotherapy and the same number of people attended an advisory service. The majority of people gave up smoking of their own accord. Over the past year, 2.9 million people gave up smoking30.

| CESSION |
|-------------------------------|---------|---------|---------|
| PREVALENCE OF CONSUMPTION     | WOMEN (%) | MEN (%) | TOTAL (%) |
| OVERALL (12-65 YEARS)         |          |         |          |
| Smokers who tried to give up over the past 12 months | 60.7 | 54.3 | 56.1 |
| Smokers who gave up over the past 12 months | 22.1 | 14.1 | 16.3 |
| Current smokers who plan to give up over the coming year | 74.3 | 73.3 | 73.6 |
| Current smokers who visited a healthcare provider over the past 12 months and received smoking cessation advice | 20.8 | 26.6 | 24.4 |

Source: ENCODAT 2016 - 2017

The probability of a person giving up smoking for good if they receive adequate treatment is far greater than if they receive no kind of help at all. In 2017, ISSSTE smoking cessation clinics provided treatment to 4,025 beneficiaries, of whom 2,462 completed the treatment; over 50% gave up smoking, double the national average.

5. UHC for people living with NCDs

There is a significant increase in health services, but the difference in coverage between one institution and another hampers UHC. Despite increasing the number of affiliates by more than 80%, Mexico has not achieved effective coverage. UHC is achieved by meeting the conditions of quality, efficiency and equality, sustainability and physical, technical and human capacity, which is more relevant for those people living with NCDs and their families, since a significant proportion of these diseases are not covered.

UHC and effective coverage (EC) are different ways of assessing the universalization of health systems. UHC has to do with affiliation, expenditure and treatment service conditions, whilst EC focuses on the conditions of use of quality services where required.

Coverage through affiliation has been promoted to guarantee the right to health, but the reality has been overestimated. Public services cover 89.5% through affiliation; however, when assessing quality, EC in terms of waiting time is 17.3% and 18.7% in terms of perception of quality. More than eight out of ten people have access to health services, but only two use them35. There are four major challenges when it comes to quality and access to services: availability of resources, geographical infrastructure distribution, use of resources and productivity of health units in the public sector.

The scant reduction in out-of-pocket expenditure is also of concern. The SP, which protected the poorest people, covered only part of their hospitalization expenses and they had to pay the remainder.

People are spending 59% more on medicines than those who live in middle-income countries because of frequent shortages. Around 25% of outpatients did not get their prescriptions filled through the public system since 58% of the pharmacies did not have basic medicines for diseases such as diabetes and hypertension30. On average and in actual terms, out-of-pocket expenditure increased by 2.4% from 2012 to 201631. An SP affiliate spends more than 1,400 pesos per year on medicines and outpatient consultations, in addition to the contribution already paid to the SP. For the IMSS, this amount is over 2,100 pesos and, for the ISSSTE, over 3,300 pesos.

Also of note is the fact that mental disorders have a budget of less than 2% of the amount set aside for health. Infrastructure is centralized, there is little availability of medicines at the primary level of care and there is a shortage of professionals, resulting in extremely adverse circumstances for those living with such illnesses32.

6. Conclusions

The path towards universal health is long and cannot be covered from one day to the next. Mexico has taken significant steps; however, it is essential to stop for a moment and evaluate future actions so as not to jeopardize what has already been achieved.

Starting with the three dimensions of UHC to analyse the situation, the establishment of the INSABI overcomes several obstacles, enabling access to health services to those who previously had none. Nevertheless, the other dimensions appear to be weakened. The protests about lack of medicines by parents of children with cancer, the widespread shortage of medicines and vaccines and the complaints by some patients who have been denied treatment illustrate that the system as a whole has not been taken into account and that there are no clear rules of operation. This situation is alarming because the lives of many people are at stake.

7. Recognized gaps

Persistent fragmentation of the National Health System, with disparity in the availability of resources of all kinds in the IMSS, ISSSTE, Department of Health, State Health Services, Department of National Defence, Department of the Navy, Mexican Petroleum and the National Institute of Health for Welfare (INSABI).

No definition of the resources managed by the INSABI, its rules of operation and its relationship with the state governments.

Persistent inequalities hampering access to health services by indigenous people, rural populations, children in vulnerable situations and elderly adults.

The need to endow the current National Centre for Preventative Programmes and Disease Control with greater political and administrative status to enable it to deal with non-communicable diseases in their entirety, each with national treatment programmes and defined budgets.

8. Recommendations

Adopt a healthcare approach that focuses on people, families and communities rather than on diseases.

Since it is impossible to standardize health institutions in the medium term, we support the researchers’ proposal regarding the functional integration of the National Health System, with a defined governance system, sectoral interaction, funding and allocation of sufficient human resources and services.

Government and society should discourage the consumption of products that are harmful to health such as tobacco, alcohol, soft drinks and products with a high calorie content and minimal nutritional value.