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Health Strategies: From Medical Profession to Social Medicine*

*Estrategias de salud: del oficio médico a la medicina social**

A BIT OF HISTORY

Although I will try to develop the new “health strategies” that come about in the passage “of the medical profession”, which still has to be improved, “to social medicine”, ideas stem from something, from someone from somewhere; and specifically speaking, it is necessary to know the context in which I was born and developed, because as a political-philosopher and economist of the nineteenth century said: “the essence of man are his social relationships”; or to quote a Senegalese proverb “if you want to know where you’re going, turn around and see where you come from.”

In my adolescence, the most common means of transportation was the electric tram (1), there were no traffic lights and still at the intersection of Independencia and Pasco, where I lived, there was a post, with a policeman who occasionally directed the traffic. The houses remained with the doors open for residents to come and go as they pleased, and people would take their chairs and sit at the front door during the evening to chat with passing-by neighbors.

Of the current *mass media* there was only the valve radio, which took a few minutes to start working, because it needed “to warm up” the circuit of valves. It was a listening culture which stimulated our imagination: the roaring of Fangio’s Maserati engines turning the curve in front of Jose Elias Sojit’s post, or the representations, also only listened, of classic plays, broadcasted through Radio Nacional in “Las Dos Carátulas”, (The Two Cover Sheets). Television only appeared in 1951 when I was already 10 years old. On the threshold of the sixties we enjoyed the first Japanese transistor radio, the famous SPICA (ST-600) with leather case, which let young people listen to the radio in the street, because its small size allowed the widespread gesture of holding the speaker against the ear with one hand ... although it came with a monaural headset that nobody used.

When I was almost 15 years old I attended the Casa del Pueblo (People’s House) and bought a bound book of the first volume of “Das Kapital” by Karl Marx, translated by Juan B. Justo, with its pages scorched by the intentional fire of the library, and I made the effort of trying to read it. About the same time a secondary school friend handed me a book of his grandfather; it was Jack London’s novel “The Iron Heel”, of whom

I only knew the books about the wolfdog Klondike. I was enormously impressed with its reading, with the demolishing arguments of that worker called Everhard and the dystopian vision of class struggles to death in the so-called “Chicago Commune”, with the description of an oligarchy that the character called the “iron heel”. The book published in 1907 heralded, before the First World War, the development of fascism that would trigger the Second.

In June 1958, still with 16 years, I went on June 27th, for the first and only time, to the box of the Chamber of Deputies to attend the derogation of the infamous 4144 “residence act”. The law allowed during the state of siege to expel, without previous trial and discretionally, the most conscientious and active socialist and anarchist workers who disturbed the conservative classes. The 4144 law was conceived and promoted by Miguel Cané in 1902, the creator of the autobiographical novel “Juvenilia” and was used in the first national centennial of 1910 to dismantle the labor movement that was preparing a counter parade in front of the numerous foreign guests. That day of 1958, the UCRI block chaired by Gomez Machado passed the 14445 law abolishing the residence act.

In the second half of that year the so-called Domingorena law originated the confrontation of ideas of secondary and university students. There were two groups, the “free” group, identified with a green ribbon, supporting private universities to issue certificates with no final exam at the public university and the “laica” group identified with a violet ribbon who opposed this idea.

Secondary schools boiled with public discussions, multiple warnings and mimeographed pamphlets. The “free” group made a massive demonstration on September 15th at the front of Congress, with around 60,000 people. Four days later, the answer was a more impressive demonstration of the “laica” group that gathered around 300,000 people, and which I attended but away from the official box, near Plaza Lorea, after the arduous task of convincing my mother.

I could define myself as a man of the *sixties*; during the first half of that decade I studied medicine at the University of Buenos Aires (UBA), and in the second half I did my medical clinical residency at CEMIC under the direction of the unforgettable Norberto Quir-

no. In the late 60s I was already working full time and starting the development of the new Coronary Care Unit of Hospital Italiano de Buenos Aires (the second in the country after that of Hospital Argerich) under the leadership of its builder, Dr. Raúl Oliveri.

From my first wish to be a clinician, I then became interested in the development of the new field of cardiac intensive care. After the initial decrease of AMI deaths in the new Coronary Care Unit, the emergence of the cardioverter defibrillator designed by Lown led us to investigate how to promptly diagnose and quantify hemodynamic failure, in order to seek measures that would reduce residual death due to pump failure.

It was already known that in the absence of pulmonary hypertension, pulmonary artery diastolic pressure was equal to the "wedge pressure", representing pulmonary capillary pressure (PCP). In turn, an experimental small caliber "floating" catheter with a thermistor to measure cardiac output, carried by blood flow to the pulmonary artery had been developed at St. Thomas Hospital in London. We acquired the equipment with the "floating" catheters, but their positioning was extremely difficult and was even worse under low cardiac output. So we developed, with the indispensable technical assistance of my father, a mold to give a double curve to the terminal part of a K-31 catheter, placing it in hot water and then introducing a copper wire inside that came out at the distal end with an outer ring that functioned as an electrode-catheter and allowed its intracavitary insertion under electrocardiographic control, finally to be held loosely in one of the pulmonary artery branches. Its easy placement in the first or second attempt was published in the RAC. (2)

With the emergence of catheters designed by Swan Ganz with a distal inflatable balloon to measure PCP and the subsequent addition of a thermistor to measure cardiac output by thermodilution, we were able to build left ventricular pump function curves, with two or more points of cardiac work against filling pressures, by decreasing venous return placing cuffs on the extremities to reduce PCP, or increasing it with volume expansion. The results were presented at the Seventh World Congress of Cardiology held at the Sheraton Hotel in Buenos Aires in September 1974.

Previously, on June 20th, 1973, although long since a convinced Marxist, I was called to go as a cardiologist to receive, with an ambulance of Hospital Argerich, General Juan Domingo Perón who was definitely returning to Argentina and would say a speech from the last bridge, 3 km before the airport of Ezeiza, to a gathering of about 3 million people on the highway. As is known, I did not meet Peron but I was in the middle of an intense firefight between security forces on the bridge, led by Colonel Osinde and columns of Montoneros who came from behind, in what was called the "Slaughter of Ezeiza"

When the coup of the genocidal dictatorship of Videla-Viola takes place on March 24th, 1976, I sup-

ported the political line of the RCP (Revolutionary Communist Party) and accepted immediately, without a second thought, to be part of a clandestine cell of physicians. All leaders remained in the country and, contrary to the focalism of the guerilla, we kept from the trenches the line of insurrectionary mass, the distribution of the "Nueva Hora" newspaper and the participation in such movements as rejecting a war with Chile over the Beagle, alongside with the position of the Church.

As Pope Francis said, the RCP was the only party that actively opposed the coup. Two days before the coup the last letter of René Salamanca, general secretary of Córdoba SMATA was published in "Nueva Hora" (3), flatly stating that: *"I do not say that Isabel has made no mistakes, I do not say that hers is the best policy to confront imperialism. But I do say, that she resists, struggles and tries not to surrender and, in that sense, when those who want to overthrow her are, as in 1955, the enemies of the country, her fall will be a setback and a step forward of the super powers in their conquering pursuit"*. And he rightly adds: *"Life teaches us that just as there is no "good" imperialism, there cannot be a "good" coup. The coup, whether pro-Russian or pro-yankee, has only one course in Argentina: popular super-exploitation, terrorist dictatorship, delivery of national wealth and more hunger for the popular sectors."* It ended: *"I propose that the mechanic workers, as on many other occasions, be the vertebral column, the warlords and the unifying word of the working class and the people of Córdoba against imperialism, and particularly now, against the threatening Coup."*

In that period, although the development of the pathophysiology of pump failure allowed us a better management of the acute phase, we found that despite the response to potent vasodilators such as prazosin increased cardiac output and decreased filling pressures, a favorable outcome could not be predicted in the long-term follow-up. We began to acknowledge the need to prove the therapeutic measures pragmatically with long-term controlled clinical trials. The publication in 1986 of Jay Cohn's V-HeFT I trial showed that the powerful drug prazosin did not reduce mortality compared to placebo, perhaps due to a tachyphylaxis mechanism. (4). In the same year the streptokinase GISSI I trial versus control in acute myocardial infarction appeared, that in addition to demonstrating the decline in mortality also revealed the decrease of severe pump failure as a result of AMI size reduction. Moreover, the prevention of pump failure was superior to the subsequent treatment of its pathophysiology.

Knowing that half of the deaths of patients with heart failure were due to pump failure but that also the other half died of sudden death from fatal ventricular arrhythmia, and acknowledging that Argentina had used amiodarone, a powerful antiarrhythmic drug, for many years, we came up with the provoca-

tive idea of testing this drug, not studied previously in clinical trials. It was used at low doses to prevent its side effects, in ambulatory patients with severe heart failure in a large, randomized, open, controlled clinical trial (without placebo because we had none).

We formed a group of clinical researchers with cardiologists specialized in heart failure that we called GESICA (Heart Failure Survival Study Group in Argentina) and the GESICA clinical trial was published in 1994 in the English medical journal *The Lancet*; (5) proving that amiodarone significantly reduced death by 28% compared with the control group. However, the reduction tendency was surprisingly similar both for sudden death as death from progressive heart failure. The decrease in mortality and reduced hospitalization for heart failure was present in all subgroups examined, and was also independent of the presence or absence of non-sustained ventricular tachycardia in the Holter at study inclusion.

In the post-hoc subgroup analysis published in *Circulation*, (6) non-sustained ventricular tachycardia in a Holter study of patients with severe heart failure was an independent mortality marker.

But even more important was the post-hoc publication, (7) showing that in the highest initial heart rate quartile, the significant reduction of mortality was higher, suggesting that the effect of amiodarone, at least in part, was due to an inhibitory action on the sympathetic system.

The latter assumption was confirmed in different randomized clinical trials of beta-blocker effect, with decreased mortality, both for the pump failure mechanism as for sudden death. Later, in the controlled trials with implantable cardioverter defibrillators, overall mortality was reduced by decreasing sudden death as primary prevention in patients with severely impaired left ventricular function (ejection fraction <35%).

The group of independent GESICA researchers, turned into a foundation and continued performing studies not attractive to pharmaceutical companies, but of great interest to patients; for example phone-call follow-up performed by a nurse to monitor plans and optimal treatment in patients with chronic heart failure decreased by 28% the end point of death or hospitalization for heart failure, which was maintained at long-term follow up after ending the intervention. (8) The leading cause of PAMI patients' hospitalization is due to heart failure; however, even though we offered our knowledge, experience and advice free of all commercial interest, we could not implement the program, which would have saved suffering to the elderly population and money to social assistance.

In recent years, we tested the hypothesis that omega-3 fatty acids from fish oil would prevent recurrence of symptomatic atrial fibrillation. (9) Although the experience was negative, with this and other publications we conducted a meta-analysis that allowed us to permanently cancel that research pathway.

INFANT MORTALITY, OVERALL MORTALITY AND PREVENTION MODALITIES

In "*health strategies*" let us start by analyzing what is considered the greatest achievement of the twentieth century, the worldwide reduction of mortality in children less than 5 years of age. In the year 2000, out of 130 million live births there were 10 million deaths, which would have been 30 million deaths, 3 times more than the real figure, if the mortality rate in Western Europe were that of the year 1900. But it concealed that if the mortality rate of the rest of the world were that of Western Europe in the year 2000, the mortality rate would be about 1 million deaths. Therefore, in our world today mortality is 10 times higher due to the disparity of low- and middle-incomes compared with high incomes. Children die according to their class, as in the tragic Titanic deck.

In the autonomous city of Buenos Aires infant mortality rate is not uniform, it continuously increases its toll from the lowest mortality in the North (Commune 14, Palermo), to the 2.2-fold highest mortality in the South (Commune 4, Barracas, la Boca, Nueva Pompeya, Parque Patricios). In turn, the family income per capita inversely decreases twofold and this would explain half of the increase in mortality ($r^2=0.49$).

Our group analyzed the standardized rate of death in people under 75 years of age (premature) and the deprivation quintiles (percentage of unsatisfied basic needs; the 1st. is the smallest and the 5th the largest) in the 213 districts in which the country is divided, from 2000 to 2011. (10) While there was a decrease in mortality, it was more evident in the 1st quintile, increasing the inequality mortality dispersion by nearly 50% between the mortality in the lowest and highest quintile. So inequality mortality rate openly increased owing to the economic situation in Argentina.

What happened with the indicators of the National Household Survey of CABA between 2003 and 2014 (12 years)? Owners of family houses declined steadily from 2 out of 3 (64.4%) to nearly 1 out of 2 (54.7%), 1 in 10 families were no longer owners of their own dwellings. This occurred although the level of tertiary education also grew steadily from 1 out of 4 inhabitants (24.9%) to 1 out of 3 (34.3%) and care in the public health system gradually decreased from 24.8% in 2003 to 17.8% in 2014. Since 2008, under the management of engineer Mauricio Macri, no change has been observed in these tendencies.

How can premature deaths be prevented? The population, instructed by the media and advised by doctors, believes that asymptomatic screening to detect early stage disease saves lives. But actually the review of all prevention studies in a meta-analysis of six major diseases and 11 rigorously evaluated tests: abdominal aortic aneurysm: by ultrasound ($n=86,449$); breast cancer: by mammography (good trials, $n=292,153$), (mediocre trials, $n=306,937$) or self-examination ($n=387,536$); colorectal cancer: by occult blood ($n=328,642$) or flexible sigmoidoscopy ($n=\text{not}$

provided); lung cancer: by chest x-ray (n=81,303), x-rays plus cytology (n=20,427) or CT scan (n=10,675); ovarian cancer: by CA-125 (n=90,492); and prostate cancer: by PSA (n=342,342) showed that although abdominal aortic aneurysm by ultrasound, breast cancer by mammography and colorectal cancer by occult blood and flexible sigmoidoscopy slightly diminish death due to the specific disease (death by aortic rupture, breast cancer or colorectal cancer, respectively), none of the six diseases has evidenced significant decrease in all-cause mortality. (11) In other words, despite the huge cost invested in the latest technology, overall mortality cannot be reduced. The real disappointing conclusion is that screening does not save lives.

So what should we do to prevent diseases that kill people in the world today?

We have to admit that in our world people die as a result of the products available on the market, manufactured by large dominant global corporations. Although there is the purpose of reducing mortality due to smoking, all medical studies are devoted to addressing and modifying the host behavior ... but there are almost no studies that recommend regulating corporations that produce the lethal agent. Jahiel proposes to define a new category of "corporation diseases" as "diseases of consumers, workers or community residents who have been exposed in the market, workplace or community to disease agents contained in corporate products" (12)

If we use the same epidemiological chain of classical health, *agent-vector-environment-host*-, to characterize public health in the new era of corporations, for example, smoking, we can assume that "cigarettes" are the addictive and toxic causal *agent* (nicotine and tar), but the *vector* are the large industrial corporations of the *Big Tobacco* companies seeking profit, the *environment* are the receptive populations, currently teens, women and especially developing countries, and the final *host* is the cigarette consumer who becomes addicted to a deadly toxic. To remove a biological epidemic like Chagas a campaign to eradicate its vector, the Vinchuca bug, is necessary; likewise, in an industrial epidemic a regulatory campaign is also necessary to finally eliminate the vector that is the Big Tobacco companies producing the addictive and toxic agent.

If risk factors for chronic non-communicable diseases, corresponding to two thirds of current mortality, respond to a "lifestyle", we would talk and treat individual behaviors and blame the victim; for example, those who smoke are not willing to quit (when we know that he is an addict), turning the government, industry and current structure of society invisible and therefore acquitting them of their responsibilities.

To prevent the "lifestyle" metaphor from prompting thoughts of individual responsibility, we really should change the metaphorical expression and talk about "way of life", the sociological category that systematically reflects economic, socio-political and cultural

conditions which are the characteristic, stable and repeated ways of daily life of people and communities.

The "way of life" theory is based on the known concept of "mode of production" clearly defined by Marx in the preface to *A Contribution to the Critique of Political Economy* of 1859. In it he manifests "The totality of these relations of production constitutes the economic structure of society, the real foundation, on which arises a legal and political superstructure and to which correspond definite forms of social consciousness." He proceeds with what is important to define what we would call way of life. "The mode of production of material life conditions the general process of social, political and intellectual life. It is not the consciousness of men that determines their existence, but their social existence that determines their consciousness". (13)

The epidemiologist Geoffrey Rose had already said in the eighties. "It makes little sense to expect individuals to behave differently from their peers; it is more appropriate to seek a general change in behavioral norms and in the circumstances which facilitate their adoption." And he went on to say for the vast majority of diseases "nature presents us with a process or continuum and not a dichotomy."

This led him to one of the fundamental axioms in preventive medicine: "a great number of people exposed to a small risk may generate many more cases than a small number exposed to a high risk"

Therefore it is necessary to improve our understanding of how large industrial corporations (Big Tobacco, Big Booze and Big Food) contribute to the disease burden in two ways, directly through the promotion of health-damaging products and indirectly by influencing public policy. Gilmore and colleagues say "The concept of an industrial epidemic—an epidemic emerging from the commercialization of potentially health-damaging products—lends itself to this purpose" (14). And continued: "Indeed, the fiduciary responsibilities of all corporations require them to maximize profits regardless of consequences to health, society, or the environment and thus to oppose policies that could reduce their profits. There are, therefore, significant limits to the compatibility of industry interests with public health. Food companies, for example, have two basic strategic options to enhance shareholder revenue: to persuade consumers to eat more or to increase profit margins. As much higher profits come from processed compared to fresh foods, promoting the latter, advising people to eat less or eat more healthily contradicts the core business models of many food companies." (14)

To get acquainted with the subject, we need to know that chronic diseases (cardiovascular disease, diabetes, cancer and respiratory disease) cause over 60% (35 million) of all deaths worldwide; and over 80% of these deaths occur in low- and middle-income countries. Merely from cardiovascular disease and diabetes 32%, 19 million subjects die; but the vast majority, 15 million die in developing countries. And what

is worse, at the same age, death is still 54% higher in men and 86% higher in women than in high-income countries. Therefore, this is our issue and not that of the rich countries.

Since we have already exemplified with tobacco, let us continue further on. About 1,300 million people smoke, about 20% of the world population, but 80% of smokers are in low- and middle-income countries. Only Russia, Indonesia and China have 1 out of 2 of the world cigarette smokers; the prevalence of tobacco consumption in men is approximately 60%. Only in China we find 1 out of 3 cigarette smokers. The media communicates that we are defeating the smoking plague, but the projection indicates that there will be over 1000 million deaths due to smoking at the end of the twenty-first century. In contrast, in the twentieth century 100 million people died. The media allied with the large companies hide that there will be 10 times more deaths in the new century.

To prevent a substantial proportion of the 450 million deaths by smoking before 2050 requires the cessation of adult smoking, a fact to which governments and states around the world are very uncommitted; since reducing the percentage of adolescents who start smoking would only show the beneficial effect of reducing deaths from 2050 onwards. A few days ago the newspapers commented that *"Germany celebrated the 70th anniversary of the end of Nazism and its liberation."* We must remember that in the Second World War conflict, between 1942 and 1945, about 24 million Soviets died and 70 years later, between 2011 and 2015, 24 million smokers died.

It is as if every day 17,000 passengers crashed and died in 40 747 Boeing airplanes; in Argentina it would represent a 747 Boeing plane-crash every 4 days.

Those who continue smoking compared with those who never smoked double the increase in mortality; 1 of every 2 deaths is due to smoking and life expectancy shortens in more than 10 years. (15)

With the production of cigarettes a *"chain of eviction"* can be made. It is known that 1 ton of tobacco produces 1 million cigarettes, and these lead to 1 death; in turn, 1 million-million cigarettes (i.e. 1 trillion) produces one million deaths; the current production of 6 million millions cigarettes (6 trillions per year) leads to 6 million deaths (Figure 1).

The large tobacco companies' profit was 50,000 million dollars in 2012; they thus earn almost 10,000 dollars for each death they cause.

How to stop this bleeding?; we know, through the experiences of France and South Africa, that by increasing threefold the price of retail in a decade (with real increases of 7% per year) reduces by half the consumption of cigarettes. Just by doubling the price of cigarettes, by tripling the specific tobacco taxes, would reduce its consumption to one third. (15)

Is it possible to reduce non-communicable disease mortality by an active State policy? This goal could be achieved if objectives such as reducing to <5% the

smoking population and to <5 g salt intake (<2 g sodium) in the diet were established, and consumption were reoriented placing taxes on junk food and sweetened beverages and subsidizing fruits and vegetables (with a neutral result for the State due to cross-linking), physical activity were promoted with special routes for locomotion and alcoholism were fought by raising the price of alcoholic beverages. The cost of these interventions, including the cost of drugs for persons at high risk for cardiovascular disease for countries such as China, India and Russia, would range between 1.72 to 4.08 dollars per person per year. (16)

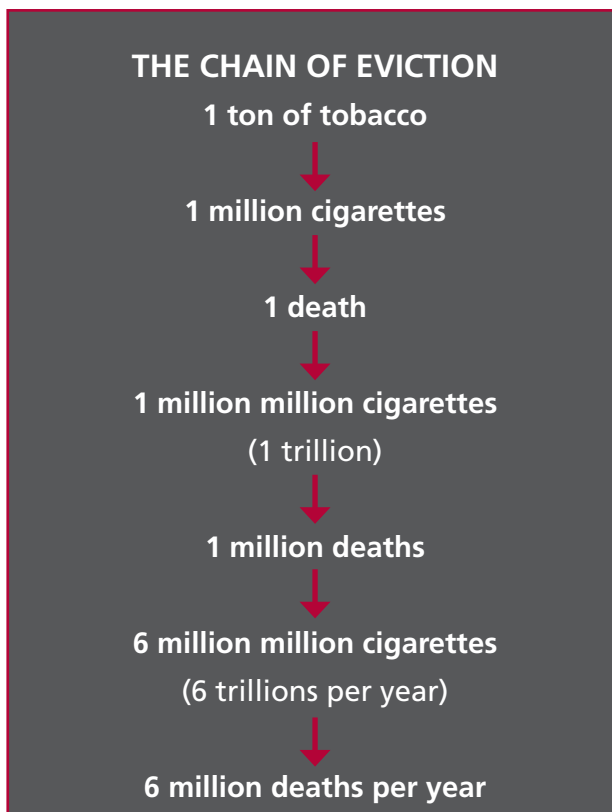
In Argentina there are approximately 300,000 deaths per year; nearly 2 out of every 3 deaths are due to non-communicable diseases (almost 200,000 deaths): 32% owing to cardiovascular diseases and 3% to diabetes; 22% to tumors and 7% to external causes. (17)

If this program were followed, it is estimated that the 35 million worldwide deaths from chronic diseases would be reduced to 10.8 million, i.e. 31.2% of current mortality (61.8% reduction). In Argentina, the nearly 200,000 deaths would be reduced to 63,000.

But these are only estimates and we should ask ourselves the following question: is there evidence of a fast fall of cardiovascular disease after abrupt changes in the population *"lifestyle"*?

A REAL EXPERIENCE

A remarkable experience happened recently in Cuba during the years called *"Special Period"*. Being under



US embargo since 1960, after the implosion of the Soviet Union in 1989 Cubans had the added loss of trade exchange (80%) and low-price oil from their Soviet ally. At this time, they could not run buses and people had to walk long distances to reach their jobs. Then, Cuba bought a million bicycles from China and gave them to the people for traveling. The “*Special Period*” was almost an experimental situation of what happens to a population under these extreme conditions.

In that period, which started in 1989, the previous calorie intake of 2,900 kcal in the average Cuban was suddenly reduced to 1000 kcal (36% of calorie intake). They were obliged to eat less food and make activities; the physically active population rose from 30% to 70%. (18)

What happened with cigarettes? The number of smokers continued to be the same, but as cigarettes were a luxury article, they reduced by half the number of cigarettes smoked. Fortunately, the attitude of smoking less persisted after Cuba recovered. And the fact that they had bicycles preserved physical activity in 55% of the population. Thus, Cubans had some good things left from that unfortunate period which lasted until 1995.

What happened with the population's average weight? It was reduced in 5.5 kg (1.5 U of BMI) and hence obesity was reduced by half, from 14% to 7.2%.

And what happened with diseases? It was a spectacular experiment; mortality for diabetes fell to 50% in 5 years, 50%!

Deaths due to coronary artery diseases decreased by 37%.

And cancers? Nothing happened, the percentage was the same. All-cause mortality had dropped by 18%, mainly due to the reduction of coronary artery disease.

After these relevant changes, can you imagine what happened to Cubans when they recovered from the “special period”? Recently, an international publication from the same group (19) showed what occurred afterwards. Body weight progressively recovered after the abrupt fall of the special period, increasing an average of 9.5 kg, over that of the initial weight. Hence, the prevalence of diabetes accelerated proportionally following the increase in body weight. The incidence of diabetes which had fallen suddenly continued to increase to previous values.

What happened with mortality for diabetes? After the peak drop of 51% it started to grow at a rate of 3.3% per year and by 2010 it had increased to 49%.

Coronary artery disease which had fallen by 35%, 6.5% per year, became stable again, with an annual drop of 0.5% per year, similar to the previous period.

Cuba is an exceptional experiment regarding body weight changes, with an abrupt decrease and then a rebound in a very short period of time. This produced a decrease in mortality for diabetes and coronary artery disease, which then increased again. Why do we say it was due to body weight? Because the number

of cigarettes Cubans smoke today is the same as that of the special period (<50% of the previous number of cigarettes), and although the amount of exercise is somewhat less, they perform more physical activity than previously.

In situations in which structural conditions of life change in a short period of time, 5 years, these changes are closely followed by changes in non-communicable disease mortality.

Then, seeing what happened in this natural experiment: could we purposely and conscientiously reduce non-communicable diseases? Could an active State and healthcare professional policy organize and promote these changes?

To achieve our medical function with each patient we face, in addition to knowing the diagnosis, outcome and treatment of their specific disease and having an empathic and supportive relationship, we need to know and modify the variables of their immediate environment, the community in which they live and the State's social and health policies, which constitute the setting that many times determine their possibility of life and development.

THE BEGINNING OF SOCIAL MEDICINE IN THE WORLD AND ARGENTINA

To accomplish the role of medicine today would imply creating a “*social medicine*”. Rudolph Virchow, in the mid-XIX century, expressed simply and impressively this concern about the associations of medicine with social problems: “Medicine is a social science, and politics is merely medicine at a large scale”.

Virchow put into practice his convictions. Through a letter addressed to his father, who must have been very worried because he did not know where he was at the time of the Berlin revolution, we know that this 27-year old doctor who was privat dozent at the Charité Hospital in that May of 1848, was in the barricade blocking the pass between Friedrich and Tauben streets, and wrote: “I have often been fooled by people, but not yet with the era. As a result I have now the advantage of not being a partial but a complete person, and my medical principles agree with my political and social ideas”.

He simultaneously founded a newspaper called “Medical Reform” and its pages advocated that the State was responsible for the health of the Prussian population and had the obligation of providing care, with doctors who would be State officials, so that everyone would have the possibility of having medical attention. In addition, the State would have to make the necessary structural changes to prevent epidemics, as the sewage system in Berlin he personally promoted. We will speak about the “*Social medicine tradition in Argentina*”, recalling what Ramón Carrillo said: “*It is evident that today there can be no Medicine without Social Medicine, -this he said in 1948- and that there can be no Social Medicine without a State social policy*”. He clearly saw what the problem was: there could

be no medicine without it being a social medicine, but at the same time, to achieve social medicine, there had to be a State social policy.

Let us see how Carrillo understood medicine. To simplify, he created three terms to qualify Medicine. He called our well-known “*medical care*”, “*Archimedicine*”, something similar to the first medicine; that is, the microcosmos of the patient-doctor relationship, which placed the patient and doctor as Robinsons in an island, isolated from their social context.

The so-called “*sanitary medicine*”, where the State appeared between the doctor and patient (trinomial), was defined as “*Paleomedicine*”, old medicine, and he placed it in the mesocosmos. That is, it belonged to a larger context, but did not comprise all the structure that produced disease.

And lastly, “*social medicine*”, where the community was associated to the patient, doctor and State, was called “*Neomedicine*”, the new medicine, which with this tetranomial had a vision from the macrocosmos to the microcosmos, passing through the mesocosmos. He firmly stated “*What is the importance for medicine to scientifically solve the problems of a sick person, if simultaneously there are hundreds of cases of sick people as a result of lack of food, anti-hygienic dwellings –that are sometimes caves- or because they earn insufficient salaries to meet their needs?*”

Since we are speaking of housing, let us analyze the housing problem in the city of Buenos Aires. In the second half of the XIX century, Frederick Engels already declared: “*What today is understood as housing shortage is the specific severity of the bad housing conditions of the workers as a result of the sudden rush of the population towards the great cities, generating a high increase in the rent, greater agglomeration of tenants in each house, and for some, the impossibility of finding shelter. And this housing shortage gets talked of so much because it affects not only the working class, but also the lower middle class.*” (20)

A similar phenomenon occurred in Argentina, well-illustrated by the classical work “*Buenos Aires Del centro a los barrios 1870-1910*” (Buenos Aires From downtown to the neighborhoods 1870-1910), where the American writer James Scobie describes the growth of the city and the migration of popular sectors from downtown to the peripheral neighborhood at the turn of the XX century. (21)

The Autonomous City of Buenos Aires (CABA), similar to other large cities of Argentina, has a profound housing crisis, with individuals without dwelling, whose only address is street situation (around 3,000 persons – approximately 2,200 sleeping in shelters and 800 in the street), or living in slums or piled-up in precarious rooms (around 132,570 homes, 11.5% of CABA homes).

The solution is to build “*new houses*” called “*social houses*” –impossible to finance privately- because they need the State’s help. In a city collapsed by the infrastructure of its public services of electricity, gas, water and storm drainage system, is there not a more immediate solution?

Certainly, we all know there are empty habitable houses which are not in offer. Could currently unoccupied houses in CABA that were somehow put to let-solve this pressing problem in a short time?

How could we know this? By looking at the 2010 National Population, Homes and Housing Census, whose definitive data were published in 2012. (22) The almost 3 million CABA inhabitants (exactly 2,890,151 persons) should be distributed in the 1,425,840 dwellings registered in the census, but surprisingly, 340,975 houses are uninhabited. That is 23.9% is the bulky percentage of empty houses; *1 out every 4 houses is unoccupied!*

In the impressive 40% empty dwellings in the downtown Commune 1 (Retiro, San Nicolás, Puerto Madero, San Telmo, Montserrat and Constitución) a great deal will have to do the fact that the apartments are offices. But 6 traditional residential districts have more than 20% uninhabited dwellings, as Recoleta (Commune 2) 34.7%, Palermo (Commune 14), 29.5%, Nuñez, Belgrano and Colegiales (Commune 13) 24.6%, Balvanera and San Cristóbal (Commune 3) 25.7%, Caballito (Commune 6) 21.9%, and Almagro and Boedo (Commune 5) 21.0%. Five additional communes have between 18 to 20% unoccupied dwellings and 3 communes less than 18%, including the Southern neighborhoods as La Boca, Barracas, Parque Patricios and Nueva Pompeya (Commune 4) that have 16%.

Table 1 shows that from 1,150,134 CABA homes, 11.5% (132,570) are in a situation of housing shortage, because they do not have a dwelling, live in unrecoverable or restorable houses or in densely-populated conditions with 3 or more persons per room, with a slight predominance (6.3%, n=71,919) of homes without dwelling or that live in unrecoverable houses with respect to those that live in precarious but potentially restorable dwellings (5.3%, n=60,651).

Table 1. Housing situation in CABA. Personal elaboration (with data from reference 23)

Homes	Definitions	Number (n)	%
Total	All CABA homes	1,150,134	100
Without deficit	Habitable dwellings with good apartments and houses	1,017,564	88.5
With deficit	Unrecoverable or restorable houses or densely-populated accommodations	132,570	11.5
Quantitative	Live without dwelling, share a dwelling or live in unrecoverable house	71,919	6.3
Qualitative	Live in recoverable dwellings (6), or densely-populated accommodations (≥ 3 persons per room)	60,651	5.3

We therefore arrive to the conclusion that if there are approximately 130,000 to 140,000 homes which we can consider live in deficient conditions, and the number of empty CABA dwellings is around 340,000, we may say that the unoccupied dwellings that could be offered, exceed 2.5 times the housing deficit; thus, it would be possible to solve relatively quickly the housing problem of the city of Buenos Aires.

Aren't third parties also harmed when a house built to be lived in is not used, and therefore impacts on the development opportunities of the life cycle and even the possibilities of life of others due to the absence of healthy dwellings and essential sanitary services? Because, as the WHO "Commission for the social determinants of health" declares:... "a great deal of the high load of disease that leads to an overwhelming loss of premature lives emerges from the immediate and structural conditions in which people are born, grow, live, work and become old." (24) Is it not fairer, economic and practical for society that the State regulates the housing market and also the land of the city of Buenos Aires, with measures of progressive taxes that could even reach expropriation, to avoid "speculative retention" in a city in which the only proposal has been to finance, execute and add new buildings, when a quarter of its dwellings remain "idle"?

Returning to our Ramón Carrillo, he certainly had a clear idea that "health" depended on living and working conditions, of the preventive concern of the State and the healthcare conditions.

He thus understood that the measures adopted to improve it should be integral; a "Health Plan" should be designed comprising healthcare as well as preventive and also social measures.

He thought that a "Healthcare Program" should be included in a "Health Plan", previously adapted to the particular conditions of the country and society.

In only 8 years (1946-1954), Ramón Carrillo achieved a monumental work. He built 230 healthcare centers for Hospitalization, 50 Specialized Health Institutes and 3,000 Health Centers, called "dispensaries" (today APS) (Primary Healthcare). In addition, he created EMESTA (Especialidades Medicinales del ESTado) (State Medical Specialties), the first national drug company. He revolutionized the installed sanitary capacity; when he started in 1946 there were 66,300 hospital beds, and when he left in 1954 there were 134,000, more than double. He was our first Minister of Health and perhaps the last fit for that office.

PRESENT SITUATION AND OUTLINE OF SOME SOLUTIONS

How are we now? Argentina has a health expenditure of 658 dollars per capita, 28% of which is dedicated to drugs (U\$S 186). It is the highest of Latin America, only comparable to that of Uruguay (U\$S 653); in Chile (U\$S 336), Costa Rica (U\$S 273), Brazil (U\$S 267) and Venezuela (U\$S 233) the spending is less than half.

The cost of the Public Health System is approximately one fifth of the total expenditure (21.5%); Social Security provides less than one third (30.3%) and people's pocket bears almost half (48.2%) of the total health cost. (25)

Ten percent of the GDP is dedicated to health: 2.19% is provided by the State, 3.09% by Social Security and almost half (4.92%) is borne by the public, concentrated in persons with high income (11.2%) and decreasing to half in those with medium (4.5%) and low income (5.3%). (26)

Where the money to finance healthcare goes is important in the improvement of mortality indexes, as there seems to be a difference in mortality according to where healthcare expenditure is increased in the longitudinal data of 153 countries.

If Public Health spending is increased 10% per capita, mortality in children under 5 years of age decreases 7.9‰ and adult mortality drops 1.3‰. But if the increase is in Private Healthcare Insurance, there is no effect in mortality for children under 5 years as well as for adult mortality. And if the 10% increase comes from people's pockets, the mortality of adult women increases 11.6‰. (27)

A recent study analyzed the effect of the financial healthcare coverage in 89 low and middle income countries during the period 1995-2011. (28)

An initial question is whether tax revenue was positively associated with public health spending. A cross-section of the 89 countries evidences a high direct correlation ($r=0.91$; $p<0.0001$, and 83% ($r^2=0.83$) of the increase in public health spending (per capita, and at constant price) is associated with the increase in tax revenue (per capita and at constant price).

They then ask what effect 100-dollar increase per capita coming only from taxes or included in the GDP (the spilling theory) has on public or private health spending between 1995 and 2011. In the tax increase, almost 10% (9.86%) is dedicated to public health and none to private health; on the contrary, a similar 100-dollar increase in the GDP produces a similar small increase (around 2%) both in public and private health. The following question is whether it is the same that the increase in health spending comes from direct progressive taxes (income, rent and capital earnings) or from indirect regressive taxes to consumption (goods and services). Only the 100-dollar growth in rent and capital earning taxes increases public health spending by almost 17% (U\$S 16.71), not taxes on goods and services or other taxes that do not increase health spending but tend to reduce it.

When asked: how does 100-dollar increase in taxes or GDP affect the processes of healthcare and coverage? It is clearly shown that the increase in tax revenue raises prenatal coverage (6.7%), newborn care (5.25%) and health coverage (11.35%), whereas the increase in GDP has no effect on these parameters.

In turn, the increase in indirect taxes (regressive) for goods and services, significantly enhances neonatal

(0.10‰), postnatal (0.17‰) and children under 5 years of age (0.43‰) mortality.

We can conclude from this analysis that tax increase enhances public and not private health spending when they are applied to rent and capital earnings, and that the isolated proportional increase in GDP income does not increase public health spending and to a small degree raises that of private health.

On the other hand, the increased income through rent and capital earning taxes increases prenatal coverage, newborn care and health coverage. Regarding mortality, the regressive income increase through taxes to goods and services promotes neonatal, postnatal and children under 5 years of age mortality (28), as well as that of adult women. Conversely, 10% increase of public spending in health (per capita) decreases mortality in children under 5 years of age and adults.

Let us then turn to medical coverage in the City of Buenos Aires. Although from the overall population, only 17.8% have public health coverage, 44.4% social security coverage and 37.9% medical insurance (pre-paid medical coverage), according to the last annual 2014 CABA household survey, the Southern, Downtown and Northern parts of the city of Buenos Aires have very dissimilar health coverage, constituting three cities within the same city.

In the Northern part of the city, with a population of high and middle-high income, most people have healthcare insurance (60.3%), a third social security (35.6%) and public health coverage alone is almost inexistent (4.1%). Conversely, in the South, with middle and low income inhabitants, a third of the population (31.2%) has only public health coverage, almost half social security (48.4%) and only one-fifth (20.3%) healthcare insurance. Downtown inhabitants have health coverage similar to the city average.

Finally, we could say that a "Healthcare Plan" for CABA as Ramón Carrillo wished, must also have the best healthcare services, preventive action by the city government and lastly the social participation of the community.

Although the city covers all its inhabitants, albeit with deep deficiencies in hospitalization and emergency, in the strictly care assistance it should design a "*Program of Ambulatory Medical Care*" of excellence for the complete coverage of the 3 million CABA inhabitants, creating groups of "*ambulatory medical care*" to cover primary healthcare and prevalent specialties.

The total cost would not exceed \$1,500 million pesos, financed by direct city taxes; it would cost \$41 for each of the 3 million inhabitants per month (\$124 million per month). A unit of 1,200 inhabitants would be covered by a healthcare group consisting of 1 general practitioner, family doctor or pediatrician (a total of 2,500 physicians with a monthly income of \$30,000), 1 nurse to control chronic diseases (hypertension, diabetes, etc.) (2,500 with a monthly income of \$15,000), 2 community healthcare agents, trained from the population without work, who would go periodical-

ly to the home or the doctor's office to educate and control preventive measures (5,000 with a monthly income of \$7,500), 1 coordinating physician every 10 primary care physicians (250 with a monthly income of \$30,000) and 1 specialist every 20 primary care physicians (125 with a monthly income of \$30,000).

The primary care physician would work 48 hours per week. The direct care of patients, coordinating the assistant nurse and the two community healthcare agents, would be done during 6 hours per day, 4 days a week. The 6-hour free day would be dedicated for face to face consultation with specialists, allowing better medical education, which is education in service. They would have 10 free hours per week (2 hours per day) for direct interconnection with the coordinators, who would update and standardize regulations, and perform quality control and care research.

This would satisfy patients, who would always have someone to consult (healthcare agent, nurse or physician), avoiding visits to the emergency room, unless for a real urgent situation, and the subsequent peripatetic medications prescribed by "anonymous" physicians who do not know the patient.

It would also satisfy the system agents, who could work and interact in a single healthcare environment, avoiding multiple and unsatisfactory jobs to achieve a decent income for living and fulfilling the goal of feeling useful in the profession, with the possibility of updating knowledge and perform clinical and community research to answer questions of interest to patients.

Only thus will the healthcare professionals feel they are fully using their capacity for those who need them. Making real the future of a supportive community, in agreement with Marx's unforgettable phrase "*...society will be able to write in its banner: from each according to his ability, for each according to his need*". (29)

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