



Population & Societies

The health transition in a century of political upheaval: the case of the Baltic countries

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The modern history of the three Baltic countries of Estonia, Latvia and Lithuania has been profoundly marked by war and political upheaval. Analysing changes in life expectancy in these countries over the last century, Jacques Vallin, Domantas Jasilionis and France Meslé examine the scars left behind by these disruptive historical events.

At the end of the seventeenth century, the region currently occupied by the three Baltic countries of Estonia, Latvia and Lithuania was divided into two parts: the north (Estonia and a part of present-day Latvia) belonged to the Kingdom of Sweden, while the south (Lithuania and the rest of present-day Latvia) was part of the Grand Duchy of Lithuania which, with Poland, formed the Polish-Lithuanian Commonwealth that covered an immense territory from the Baltic to the Black Sea. In the eighteenth century, Russia successively annexed the Baltic territories held by Sweden (1721), then those belonging to the Polish-Lithuanian Union (1772, 1793 and 1795) and they became governorates of the Russian Empire (Estlandia, Liflandia, Curlandia, Kovno and parts of Vilno, Vitebsk and Suvalki). More than a century later, when the Russian Empire collapsed and peace treaties finally put an end to the First World War, the three Baltic countries gained their independence. Their frontiers were similar to those of today, except for Lithuania, which did not recover Vilnius, its current capital, until 1939. But this independence was short-lived, and after just 20 years the three countries were annexed once again by the USSR and turned into Soviet republics. The Baltic countries remained under Soviet control for the next half a century before regaining their independence after the fall of Communism and the break-up of the Soviet Union in 1991. Just 12 years later, in 2004, they

joined the European Union – this time of their own free accord.

Culturally and linguistically very different, Estonia, Latvia and Lithuania share a history punctuated by war and political upheaval. These disruptions had a major impact – both positive and negative – on the progress of the health transition in these countries. The health transition is the name given to the major socioeconomic movement which, in less than three centuries, enabled the most advanced European populations to increase their life expectancy at birth from just 30 years in the mid eighteenth century to more than 80 years today. How did it unfold in this region? Unfortunately, the tumults of history not only slowed down health advances in these three countries, but also disrupted their statistical observation systems. We know practically nothing about Baltic mortality in the eighteenth century, and little more about the nineteenth. However, as part of an international research project,⁽¹⁾ we have been able to reconstitute detailed annual life tables for most of the twentieth century, so we can now provide a fairly precise picture of the progress that was made during the first period of independence, the shock of forced annexation to the Soviet Union and the changes that followed post-Soviet independence and accession to the European Union.

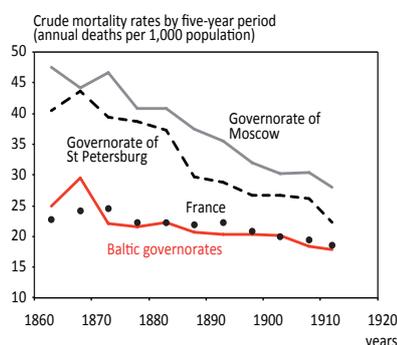
The situation in the late nineteenth century

Although we are largely ignorant of the situation in the nineteenth century, we do know that during the Russian Empire, mortality in the four governorates located entirely within the current frontiers of the Baltic countries

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Figure 1. Mortality rates in the Baltic governorates,* in Moscow and St Petersburg and in France



Source: [1] for the Russian governorates; [2] for France.
* mean of the rates of the four Baltic governorates located entirely within the current borders of the three Baltic countries.

(E st l a n d i a , L i f l a n d i a , C u r l a n d i a and K o v n o) was lower than in the rest of the Empire, and similar to that of France (Figure 1). According to Besser and Ballod (1897) [3], life expectancy at birth in 1880-1883 was around 40 years in the Baltic governorates, compared with

less than 30 years for the Russian Orthodox population as a whole. In France at the time, it was 43 years [4]. There is no doubt that during the second half of the nineteenth century, Baltic mortality, close to that of France, was much lower than elsewhere in the Russian Empire. In other words, Russia's annexation of the Baltic region does not seem to have dented the progress in the health transition already achieved under Swedish or Polish domination. What happened thereafter?

An almost complete series of annual life tables for the twentieth century

The Human Mortality Database includes life tables for all the years 1959-2014 (<http://www.mortality.org/>) for the three Baltic countries and for Russia. As honestly stated in the database, however, the published results are not totally reliable, notably for infant and old-age mortality. As part of the abovementioned project, we corrected, as far as possible, for any errors and reconstituted the Soviet era data series back to the early 1950s. It is practically impossible, however, to cover the extremely chaotic period of the Second World War and the immediate post-war years. Based on the unfinished studies of Kalev Katus,⁽²⁾ and after correcting for the under-recording of infant deaths [5], we nonetheless succeeded in obtaining series of annual tables for the inter-war period in Estonia and Latvia.

We can thus follow, step by step, the changes in life expectancy at birth in the Baltic countries and compare them with those of Russia on the one hand, and France on the other, first in the inter-war period, and then from the early 1950s up to 2016 (Figure 2).

Rapid progress in the 1920s and 1930s

From the early 1920s to the late 1930s, life expectancy rose quite fast in Estonia and Latvia, reaching similar levels to those of France. In 1938, Latvia was even slightly ahead, with a male life expectancy of 56.5 years, versus 55.9 years in France. For females, the figures were 62.2 years and 62.0 years, respectively. For Lithuania, we only know life expectancy in 1925,⁽³⁾ but it is entirely consistent with the observations in the two other Baltic countries, and based on our knowledge of other available mortality indicators (notably infant mortality), the trend must have been quite similar. In Russia, on the other hand, the mean length of life, which plunged in the wake of the 1933 famine, progressed very little for females over these two decades, and remained practically stagnant for males. At just 34.0 years for males and 41.8 years for females in 1938, it lagged ever further behind the Baltic countries.

The shock of the Second World War and the Soviet occupation

The trauma of the Second World War, forced annexation by the Soviet Union, and German occupation (1941-1944), with the extermination of the Jewish population,⁽⁴⁾ heavy military and civilian losses, and worsening living conditions, is not visible here to its full extent, due to the lack of reliable estimates for the Baltic countries between 1938 and 1950, but it is not difficult to imagine. Estonia, the only country for which we could establish a life table from 1950 onwards, was on a par with Russia in that year, with a male life expectancy of 53 years, 10 years below that of France. Although we cannot give a precise estimate, there is no doubt that by the end of the war, Estonian life expectancy had fallen well below its 1938 level, and the situation in the other two Baltic countries was certainly no better.

Spectacular progress in the 1950s and early 1960s

From then on, however, the Soviet regime proved highly successful in eradicating infectious diseases, and life expectancy improved very quickly. Once again, progress was faster in the Baltic countries than in Russia. In 1964, life expectancy in Lithuania was practically the same as in France for females (74.5 years and 74.7 years), while for males it was even slightly higher (68.7 years versus 68.4 years). Latvia and Estonia were not far behind, and Russia itself tailed France by just two to three years, with

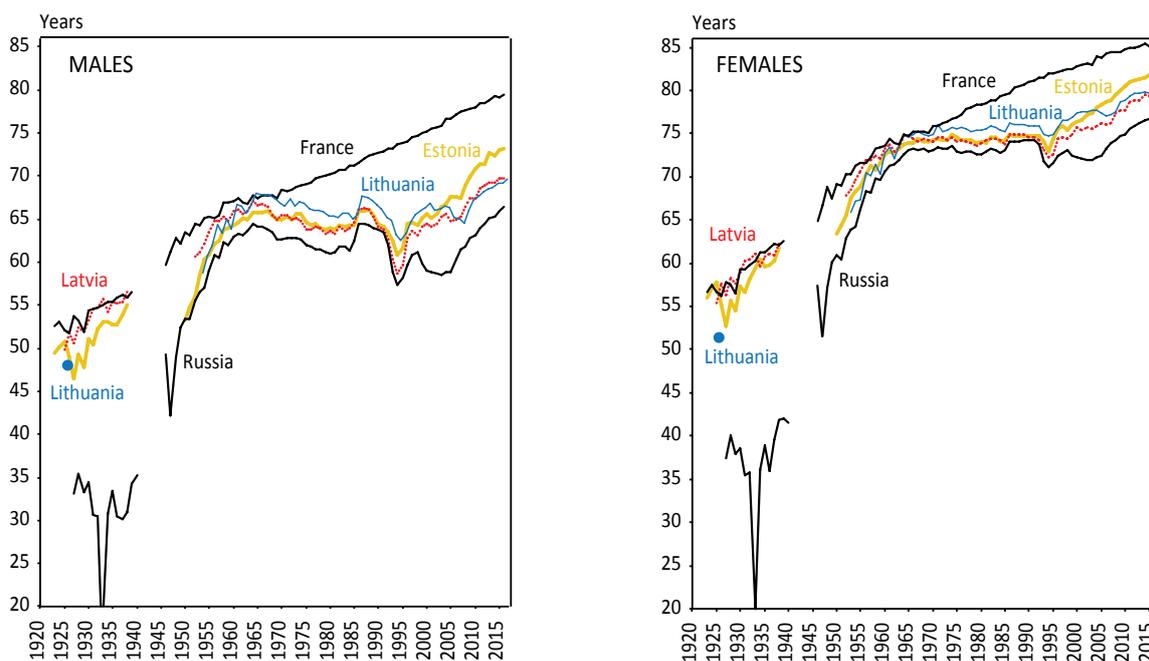
(2) Kalev Katus died prematurely in 2008.

(3) 48 years for males and 51 years for females.

(4) An estimated 200,000 Lithuanian Jews were murdered by the Nazis between 1941 and 1944, which was more than 90% of the country's Jewish population and nearly 10% of its total population.

(1) Mortality Divergence and Causes of Death (Modicod) financed by Fonds AXA pour la Recherche.

Figure 2. Life expectancy at birth in the Baltic countries, Russia and France, 1925-2016



J. Vallin, D. Jasilionis, F. Meslé, *Population & Societies* n° 555, INED, May 2018.

Sources : reconstruction by the authors for the three Baltic countries; [2] updated for France ; [6] updated for Russia.

72.6 years for females and 64.5 years for males – a gain of 10 years since 1946 for females and of 14 years for males. Over the entire Soviet era, this was certainly the period of greatest progress in health. All the Soviet republics saw improvements, first and foremost the Baltic countries.

The Soviet health crisis

However, as members of the Soviet Union, the Baltic countries were also victims of the USSR’s inability to enter the cardiovascular revolution – the new phase in the health transition whereby, after the eradication of infectious diseases, western industrialized countries developed effective means to treat and prevent cardiovascular diseases while also controlling the upsurge in man-made diseases (alcohol consumption, smoking, violence, etc.). These diseases were reaching new heights in the USSR. Female life expectancy stagnated: from 1964 to 1992, Baltic and Russian females gained only between 0.5 and 1 year, versus 7 years in France. Men, for their part, were struck down massively by man-made diseases and their life expectancy decreased. The improvement resulting from Gorbachev’s anti-alcohol campaign was short-lived, and from 1964 to 1992, Baltic males lost between 2 years (Estonia) and 5 years (Latvia) of life expectancy – more, on average, than Russian men (2.5 years) – while French males gained 5.5 years. Baltic populations of both sexes were then severely affected by the brutal transition to a market economy in the immediate aftermath of the fall of Communism and the break-up of the USSR. The health

repercussions of this major economic and social crisis peaked in 1994, when the life expectancy gap between France and Russia reached its widest: 11.1 years for females (70.8 versus 81.9) and as much as 16.5 years for men (57.1 versus 73.6). This last shock to hit the Baltic countries during the Soviet period was somewhat attenuated in the region, although female life expectancy fell by almost 2 years with respect to 1990 in Estonia and Latvia, and by more than one year in Lithuania, and male life expectancy by 3.5 years in Estonia and Lithuania, and by as much as 5.4 years in Latvia.

The benefits of renewed independence and EU membership

After the shock of transition, the Baltic states, independent once again, responded in different ways to the new era, depending on their initial differences and their choices in terms of economic, social and health policies [7]. From a very early stage, these policies were shaped by the prospect of accession to the European Union and the need to implement reforms to make EU membership possible. Less hard-hit than its two neighbours by the crisis of 1993-1994, Lithuania initially took the lead in terms of life expectancy improvements, but by 2001 the trend was again reversed due to the inadequate scope of reform. In Latvia, and above all in Estonia, where reforms were more effective and implemented more consistently, the effects were greater over the long term. Estonia is well on its way to catching up with western countries in

terms of life expectancy. Indeed, since the end of the 1993-1994 crisis and the short recovery phase, life expectancy in Estonia has been increasing faster than in France, and improvement has accelerated since 2007. Latvia is advancing in a similar manner, although somewhat more slowly, and since 2007 Lithuania also seems have returned to a steady upward path. In fact, there is nothing special about 2004, the year of the Baltic countries' accession to the EU; the necessary reforms began before that year and continued afterwards. With a return to progress in Lithuania and an acceleration in Latvia and Estonia, 2007 is more of a watershed; from 2007 to 2016, the difference with respect to France was narrowed by 3 to 4 years. In Russia, on the other hand, recovery from the crisis of 1993-1994 took longer and, above all, starting in 1998, there was a return to the long-term trend of male life expectancy decline and female stagnation previously observed in the 1970s and 1980s. It was not until 2005 that things started to improve again, and while this upturn is vigorous, its sustainability is still open to question [8,9]. The life expectancy gap between Russia and France today is still 14 years for males (versus 7 years in Estonia and 10 years in Latvia and Lithuania) and 9 years for females (versus 3.9 years, 5.9 years and 5.5 years, respectively).

Historic variations in life expectancy in the Baltic countries are instructive as they tell us about the possible links between geopolitical upheavals in an outlying region of the Russian Empire, and then of the USSR, and the progress of the health transition. Well ahead of Russia at the time of their first independence, these countries paid a heavy price when they were forcibly integrated into the USSR. Nonetheless, the losses incurred were soon reversed thanks to the remarkable success of the Soviet regime in reducing infectious mortality. The entire USSR, led by the Baltic countries, soon began to catch up with the West in terms of life expectancy. However, this same Soviet health system proved incapable of combating cardiovascular diseases or controlling the upsurge in man-made diseases. As a consequence, life expectancy in the Baltic countries again started lagging behind that of the West. Finally, as in Russia, the transition to a market economy after the fall of Communism and the break-up of the USSR was so brutal that in 1993-1994 male life expectancy fell back to the levels of the 1950s. It was only from 1995, in the new

context of the independence, and preceding their accession to the European Union, that these countries were able to implement policies that produced a sustained increase in life expectancy and a convergence towards western European standards. However, the case of Estonia, which performed better in this respect than its two neighbours, suggests that the adoption of new measures in line with EU standards was approached differently in the three countries, reflecting their specific social and cultural environments.

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Abstract

Variations in life expectancy in the Baltic countries are instructive as they tell us about the possible links between geopolitical upheavals in an outlying region of the Russian Empire, and later of the USSR, and the progress of the health transition. Well ahead of Russia at the time of their first independence, Estonia, Latvia and Lithuania paid a heavy price when they were forcibly integrated into the USSR. It was only from 1995, after regaining independence and then entering the European Union, that these countries were able to implement policies that produced a sustained increase in life expectancy and a convergence towards western European standards.

Keywords

Life expectancy, mortality, health transition, Baltic countries, Estonia, Latvia, Lithuania, Russia, USSR, cardiovascular revolution, infectious diseases.