

Stillbirths in France: Over half of women go on to have another child

Alberto Taviani*, John Tomkinson**, Didier Breton***

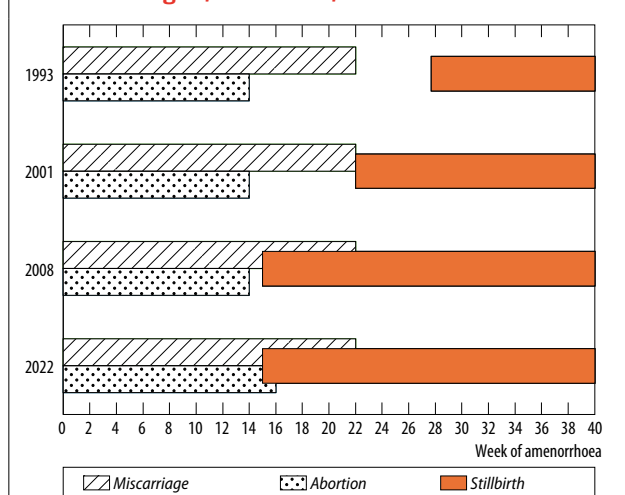
Although rare, the death of a child at birth or just afterwards is a tragic event. Alberto Taviani, John Tomkinson, and Didier Breton look at past and present statistics and at how these infants are recognized. How was a stillbirth defined in the past and how is it currently defined? Which women are most at risk of having a stillborn child? How many of these will go on to have other children?

What is a stillbirth?

In France in 2024, an *enfant sans vie* (literally, 'lifeless child') is defined as a child who is born without signs of life⁽¹⁾ or a child born alive but not viable. In this article, the term *stillbirth* is used to refer to both these cases. Unlike the process for registering a live birth, registering a stillbirth within the civil registration system is optional, and there is no deadline for doing so. The criteria for defining a stillbirth have significantly evolved over time and have broadened considerably since the 1990s. The legal concept of stillbirth was introduced in France for the first time in 1806, in the Napoleonic Civil Code, but at that time it was very difficult to differentiate between a child born alive who died before their civil registration and a child born without signs of life or non-viable.⁽²⁾ The French Law of 8 January 1993 defined stillbirth using the concept of viability and established a threshold of 180 days of pregnancy (or around 28 weeks of amenorrhoea) to differentiate between stillbirth and miscarriage (foetal demise), there being no possibility of registering the latter within the civil registration system (Figure 1). In November 2001, France adopted the international definition recommended by the World Health Organization (WHO), based on viability criteria of minimum weight of

500 g and/or gestational age of at least 22 weeks from last menstrual period. In August 2008, these objective time and weight criteria were abandoned. Since then, a special medical certificate of birth, indicating that a child was born without signs of life, or was live at birth but not viable, can be used to register the stillborn child within the civil registration system.

Figure 1. Changes in the gestational age thresholds for miscarriages, abortions, and stillbirths in France



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Interpretation: Since 2022, a foetus delivered either without signs of life or alive but not viable from 15 weeks of amenorrhoea onwards can be registered as a stillbirth. A pregnancy that terminates 'naturally' before 22 weeks of amenorrhoea is considered a miscarriage. Abortions can be performed until 16 weeks.

Note: Prior to 1993, if pregnancies ended at between 22 and 28 weeks of amenorrhoea, the infants were considered to be born without signs of life (*mort-né*) or born alive but not viable, and could not be registered within the civil registration system as a stillbirth.

(1) Historians and demographers often use the French word *mortinaissance* to refer specifically to births in which the child is born without signs of life.

(2) This is despite the fact that, in the past, very detailed reports were issued by the former French Statistics Bureau (Statistique générale de la France) to detect 'false stillbirths', i.e. 'stillborn infants who had breathed', according to the doctor's report [1].

* DREES

** Univ. Lille, CNRS, UMR 8019 - CLERSE - Centre Lillois d'Études et de Recherches Sociologiques et Économiques

*** Univ. Strasbourg, CNRS, UMR 7363 - SAGE; Institut national d'études démographiques (INED), F-93300 Aubervilliers, France

These certificates are issued in cases of spontaneous labour, labour induced by medical termination of pregnancy, or late miscarriage (between 15 and 22 weeks of amenorrhoea) if a formed—or congenitally deformed—and sexed body is delivered.⁽³⁾ Today, therefore, a late miscarriage can be registered as a stillbirth at the discretion of the ‘parents’.

While the definition of a stillbirth has not changed further since 2008, other major legal changes have been introduced. The Circular of 19 June 2009 made it possible to give a stillborn child a first name and to register them in the family booklet (*livret de famille*), and the Law of 6 December 2021 allowed for them to be given one or more surnames. However, from a legal perspective, a woman who gives birth to a stillborn child cannot be considered the ‘mother’ of this child. Under current French law, attribution of legal personality is conditional on being born alive and viable. In the case of a stillbirth, the lack of life or viability prevents any relationship of parentage from being created.

While stillbirth and abortion remain different events, the gestational age limit for voluntary termination of pregnancy was also changed, in March 2022, from 14 to 16 weeks of amenorrhoea.

Who is most at risk of having a stillborn child?

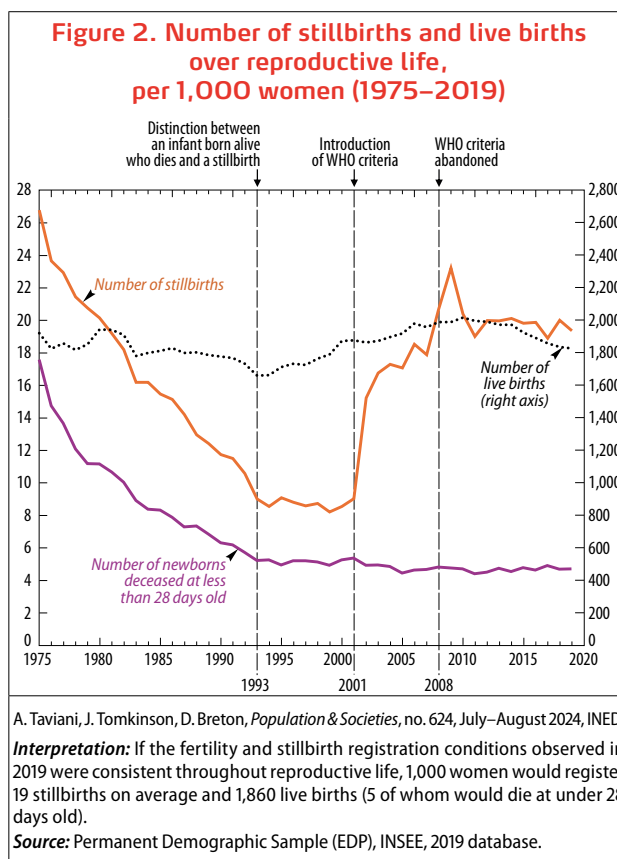
According to UNICEF, the main causes of babies being born without signs of life⁽⁴⁾ are complications during birth (hypoxia, placenta praevia, and other complications), antepartum haemorrhage, infections and maternal disease, and foetal growth restriction [2]. Maternal health may also play a part, and factors such as age, state of health (e.g. obesity, diabetes, and hypertension), and being a smoker may increase the risk of maternal disease and of infant death before or during birth. Women having their first pregnancy or a twin pregnancy are also more at risk. Adverse socio-economic conditions may also increase the likelihood of experiencing a stillbirth, primarily due to an accumulation of the risk factors mentioned above. However, as stated in the latest report from the Euro-Peristat network coordinated by INSERM, for between 30% and 50% of stillbirths where the baby is born without signs of life, no apparent explanation exists [3].

More stillbirths registered since the 2001 and 2008 definition changes

Since the most recent definition of stillbirth became applicable in 2008 and until 2019, around 8,000 stillborn infants, on average, have been declared in civil registration each year in mainland France. If 1,000 women experienced the fertility conditions and stillbirth registration conditions of the year 2019 throughout their reproductive life (15–50 years), 19 stillborn infants would be registered (Figure 2), representing just over 10 stillborn children per 1,000 live births. The increase in the number of stillbirths per woman over time is partly related to

(3) As specified in the Circular of 19 June 2009.

(4) Babies born without signs of life are a subcategory of stillbirths for which we are most aware of the associated risk factors, unlike babies who are born alive but non-viable, and other situations more recently considered stillbirths for registration purposes (such as late miscarriage and medical termination of pregnancy).



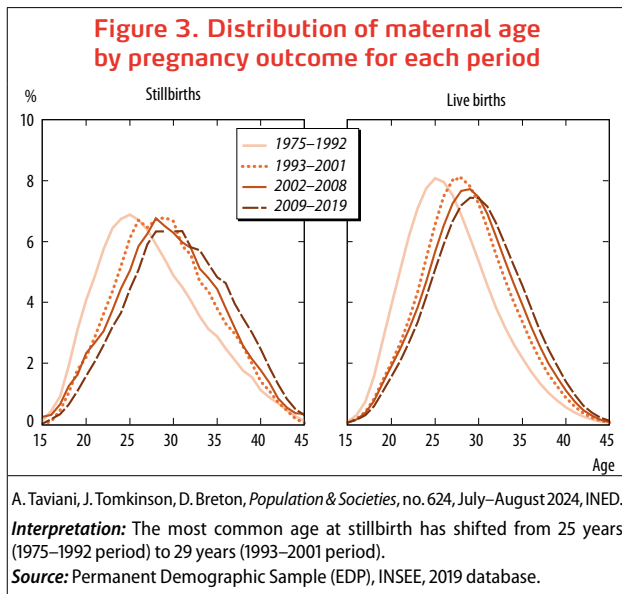
changes in the definition: legal developments have created marked discontinuities in the statistical series, and four main periods can be identified. The first (1975–1992) is characterized by a fall from 27 to 9 stillbirths per 1,000 women, due to the combined effect of improved perinatal healthcare (lower neonatal mortality [4]) and a lower fertility rate at young ages (when the risk of having a stillborn child is slightly higher). The second period (1993–2001) features stagnation around this lower rate (9 per 1,000) due to the combined effect of various phenomena that offset each other: a new definition of stillbirth, slower progress in terms of neonatal healthcare, and a rising fertility rate. The third period (2002–2008) shows a sharp increase in the number of stillbirths per 1,000 women (+6/7 per 1,000), resulting from the WHO’s recommended definition being much broader than the definition used in France at that time (use of a minimum of 22 weeks of amenorrhoea for stillbirths). These developments occur in parallel with a rising fertility rate and in the context of increasing numbers of pregnancies at later ages (when the risk of a stillbirth is higher). After peaking in 2009,⁽⁵⁾ the rate of stillbirths stabilizes at around 19 per 1,000 women over the most recent period.

Stillbirths at increasingly late maternal age

In a society seeing widespread and consistent advances in maternal age, more and more women are experiencing stillbirth at a later point in their reproductive lives (Figure 3). While,

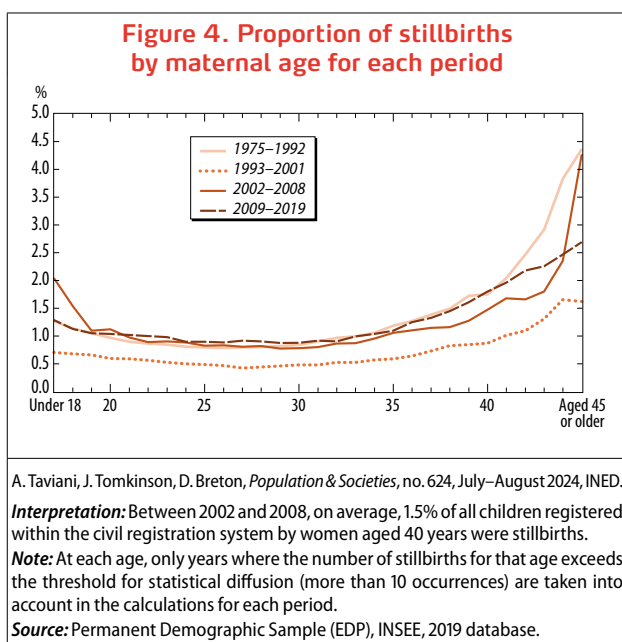
(5) Foetuses may have been wrongly classified as stillbirths during the first half of 2009 due to uncertainties surrounding the 2008 definition of a stillbirth; these ambiguities were clarified in the Circular of 19 June 2009.

prior to 1993, the most common age at which a stillbirth was experienced was around 25 years of age, it is now around 30. Similarly, the average age at which a stillbirth occurs rose from 28.1 years in 1975 (1.5 years older than the average age at childbirth of 26.7 years) to 29.9 years in 2000 (+0.5 years; 29.4 years), and again to 31.7 years in 2019 (+0.9 years; 30.8 years). Stillbirth characteristics have shifted over time (Box 1).



Higher risk in early and late reproductive life

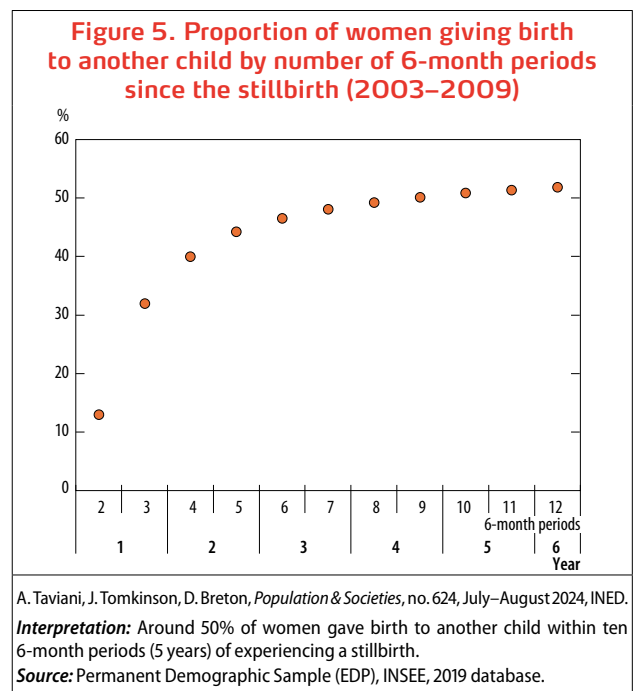
In mainland France, risk of having a stillbirth by age follows a J curve (Figure 4). The same finding is reported in other countries based on civil registration data [5]. At the start and end of reproductive life, proportions of stillbirths are higher. Before the age of 18, between 1% and 2% of registered deliveries are stillbirths. The lowest proportion is reached between 25 and 30 years of age, with less than 1% of births being stillbirths. The rate rises slightly again after age 30, exceeding the level



observed in the youngest age group between 35 and 40, before reaching the highest rate towards the end of reproductive life (around 45 years). At these older ages, between 1.5% and 4.5% of registered deliveries are stillbirths, depending on the definition and time period. Apart from the 1993–2001 period, when the most restrictive definition of stillbirth was applied, the shape of the curve remains similar irrespective of the period considered.

Over half of women who experience stillbirth give birth to another child within 5 years

For women, experiencing a stillbirth does not mean the end of their reproductive journey (Figure 5). In the 6 to 12 months following a still birth, more than 1 in 10 women give birth again. After 2 years, 40% of them have given birth again, and more than half give birth within 4 years of a stillbirth. After this time, further births are less frequent. Just under half of women who have experienced stillbirth have no further births within the following 6 years. Although the civil registration data (Box 2) makes no distinction between them, these women are divided into those who did not try for any more children and those who remained involuntarily childless after the stillbirth (e.g. those who had difficulty conceiving associated with pregnancy at a later age or who experienced repeated spontaneous miscarriages).



Outlook for the future

In France, legal changes have resulted in an automatic increase in the number of stillbirths. Declining neonatal mortality and falling fertility rates may lead to increasing individuation and personalization of the stillborn child by its ‘parents’—for example, the allocation of a first name becoming almost standard [7]—as well as by healthcare professionals. Several factors are driving movement in this direction: first, medical advances that increase the chances of survival

Box 1. Historical characteristics of stillbirths

Before 1993, the number of stillbirths consistently fell over time [6]: in mainland France, more than 30,000 stillbirths were reported annually within the civil registration system in the early 20th century, compared with fewer than 4,000 each year in the 1990s. Historically, as for infant mortality, stillbirths more often involved male babies: they were strongly over-represented in the first half of the 20th century (57% on average). In the second half of the 20th century, this over-representation was progressively eroded, and the typical 'biological' distribution observed in live births (51% boys, 49% girls) was reached in the 1980s. Following the series of definition changes that have occurred since 1993, male stillbirths are once again more common (54% on average). While stillbirths used to be proportionately more common outside of marriage, the distribution by parental marital status is now almost identical to that observed for live births (around 40% of children are born within marriage and 60% outside of marriage).

Box 2. Estimating fertility after stillbirth

The Permanent Demographic Sample (EDP), created in 1967, is a panel of individuals representative of the general population of France. As of 2008, it includes 4% of the population. It involves 'passive' monitoring through various data sources, including birth and stillbirth registrations from the civil registration system. The EDP enables us to reconstruct the reproductive trajectories of women who have registered a stillbirth with the civil registry and, thereby, examine fertility subsequent to these registrations. The results presented here are based on analysis of the reproductive trajectories of 4,732 women over the 2003–2019 period.

for premature infants and thus the propensity to consider them viable increasingly earlier during pregnancy; and second, greater demand for recognition both of the stillborn child and of parental status (including in cases of children born without signs of life or children born alive but not viable). Over the longer term, demographic factors such as increasing age at childbirth and more frequent use of assisted reproduction could drive an increase in the number of stillbirths. Conversely, medical advances might lead to a reduction in the physiological risks associated with delivering a stillborn child and/or to the development of techniques for saving foetuses 'expulsed' before 5 months of pregnancy, resulting in a fall in the number of stillbirths alongside a corresponding fall in infant and neonatal mortality, the latter having stabilized since 2005.

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Abstract

In 1993, France introduced a distinction between a baby born alive who subsequently dies, and a stillborn infant (*enfant sans vie*, literally 'lifeless child'). Since then, the definition of a stillbirth, based on the concept of viability, has increasingly expanded, and legal recognition of these infants has become easier. Since 2008, a medical certificate of delivery is the only thing required to register a stillbirth with the French civil registration system. After a sharp increase due to changes in the law, the number of stillbirths has stabilized at around 19 per 1,000 women. Stillbirths, which are more common among older women, do not signify the end of reproductive life. More than half of women give birth to a living child within 5 years of a stillbirth.

Keywords

stillbirth, fertility, birth, pregnancy, childbirth, miscarriage, abortion, civil status, recognition, parentage