Thieme

History of BCG Vaccination Recommendations in East and West Germany from 1951 to Date

Geschichte der BCG-Impfempfehlungen in Ost- und Westdeutschland von 1951 bis heute

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With the SARS-CoV-2 pandemic still rampaging, attempts have been made to investigate a potential correlation between BCG vaccination and a positive effect on COVID-19 mortality rates. Germany seems to be a "natural" randomized trial setting with different BCG-policies applied during the German separation after World War II till the reunification in 1990.

The authors of a COVID-19 modelling study by Escobar et al. stated that "In West Germany, those 22 y to 59 y old today were vaccinated, while in East Germany, those 45 y to 84 y old received at least one dose of BCG" [1]. These assumptions were based on data derived from the BCGatlas (www.bcgatlas.org), a source often used as international reference on different BCG-vaccine policies. Other publications used other data sources for modelling studies [2].

As we questioned the statement cited above, we reviewed various information on BCG vaccination policies in East and West Germany published in German language publications and historical documents, which may be not available in electronic data sources. Depending on the historic sources used, some dates and years vary for specific policies and differ from the data used for modelling [1]. Here we describe the history of BCG vaccination in Germany.

After World War II almost 2 000 000 children were BCG vaccinated in the Western Sectors of Germany by the Swedish and Danish Red Cross between 1947 and 1949 (1951) [3]. In 1951 (1953), the German Central Committee against Tuberculosis (DZK) recommended voluntary BCG vaccination to the federal state governments for all tuberculin negative individuals at risk for tuberculosis, especially for newborns, toddlers, children and adolescents, but also for medical students, doctors, nurses and other health professionals. In 1955, the recommendations were updated and focused mostly on newborns [4]. The implementation of DZK recommendations is within the responsibility of the federal states. Therefore, vaccination rates varied between federal states, also due to the acceptance of the BCG vaccine, and are not exactly known. In 1975, the vaccination policy changed again, and BCG vaccination was only recommended for newborns and tuberculin negative individuals at high risk of tuberculosis.

In East Germany, BCG vaccination was recommended since 1952 (1951) for all newborns and tuberculin-negative school children and became mandatory in 1961 (1953, 1958) until the German reunification in 1990 [5–10]. High vaccination rates in newborns close to 100 % have been documented [9, 10]. After 1990, BCG vaccination recommendations were adapted to West German policies. Since 1998, vaccination with the currently available BCG vaccine is not longer recommended in Germany (both former west and east) [11] (▶ **Table 1**).

Based on these historic data, nearly 100 % of the population born in East Germany currently aged between 30 and 69 years are thought to be vaccinated (year 2020). The proportion of BCG vaccinated people born in West Germany is more difficult to estimate. Most likely, individuals currently aged between 45 and 69 years have been vaccinated and younger people between the age of 45 and 30 have been vaccinated, if they belonged to a risk group. People younger than 22 years have probably not been vaccinated. The vaccination coverage among school children in the 1950s and 1960s is not exactly known and the

▶ **Table 1** History of BCG-vaccination recommendations in Germany.

1947 – 1949	**Vaccination of 2 Mio children in the Western Sectors**	
1949	**Division of Germany** in	
	West Germany (FRG)	**East Germany (GDR)**
1952/1953 (1951–1955)	1953 (1951–1955): general recommendation for all newborns and people at risk for TB	1952 (1951): general recommendation for newborns and people at risk for TB
1961/1975	Since 1975: recommendation focused on newborns and people at risk for TB	1961 (1953, 1958): mandatory vaccination program
		1990: end of mandatory vaccination program
1990	**German Reunification** Recommendation only for people at high risk for TB including newborns	
1998	BCG vaccination no longer recommended	

assumption, that people currently older than 69 years are entirely vaccinated, should be treated with caution.

Due to the variability of dates found in different sources and missing dates on vaccination coverage for West Germany and for the early years of East Germany (till the mandatory vaccination program started), calculations may lead to wrong assumptions. Also, there is a number of other potential confounders, such as population density or socioeconomic differences in the Eastern and Western Federal States of Germany, which may also influence the COVID-19 mortality rates. Therefore, studies based on BCG vaccination data should be discussed critically.

Conflict of interest

Stefan H. E. Kaufmann is inventor of a recombinant BCG-based vaccine against tuberculosis which has been licensed to Vakzine Projekt Management, Hannover, Germany, and to Serum Institute of India Ltd., Pune, India.
Brit Häcker, Torsten Bauer, Ralf Otto-Knapp: no conflict of interest with topic of article.

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