

Ring Vaccination

[rɪŋ-væk-sɪ'-neɪ-ʃn]

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Ring vaccination (expanding ring, surveillance and containment) is a public health measure designed to prevent spread of disease from infected persons to others. This approach targets persons who have had close contact with confirmed or suspected cases and are at a higher risk of infection by vaccinating them first.

This strategy has shown remarkable success in combating smallpox caused by respiratory droplet/direct contact-based transmission and shortened incubation for the vaccine. The concept of protecting persons closely exposed to smallpox cases might have its origins in the late 18th century, when the London Small-Pox and Inoculation Hospital was established in 1746. Haygarth (1793) and Carl (1799) suggested systematic variolation of the population and isolation of smallpox cases. In 1877, the Leicester Method, which involved prompt notification, isolation, and quarantine of smallpox cases, was introduced in Leicester (a town

in East Midlands, England), and was advocated by local anticompsory vaccinationists. In 1896, the Royal Commission on Vaccination recommended infant vaccination to control smallpox, although C. Killick Millard, Medical Officer of the Health, appealed for reconsideration. The Leicester method was later supplemented with vaccination or revaccination of contacts in the early 20th century.

After World War II in 1946, despite limited vaccine supplies, Dixon eliminated a smallpox outbreak in the Tripolitania (a former province of Libya) using a method termed expanding ring vaccination. In 1967, Foege and colleagues introduced this concept as surveillance and containment in the smallpox eradication campaign in Nigeria. The strategy proved successful for smallpox because of the disease's relatively slow spread, mostly through face-to-face contact. The term ring vaccination is now universally used for this process.

1793–1799	1877	1893	1896	1914	1946	1967
Haygarth and Carl	Dr. William Johnston	Dr. Joseph Priestley	Royal Commission on Vaccination	Dr. C. Killick Millard	Dr. Cyril William Dixon	Dr. William Herbert Foege
London, UK, and Bohemia, Czech Republic	Leicester, UK	Leicester, UK	London, UK	Leicester, UK	Tripolitania, a former province of Libya	Nigeria, West Africa
Variolation and Isolation	Leicester Method	Leicester Method (modifications)	Royal Commission report on vaccination	Vaccination question In the light of modern experience— an appeal for reconsideration	Expanding ring vaccination	Surveillance and containment
Combination of variolation on wide scale and the isolation of smallpox patients	Prompt notification, isolation and quarantine of smallpox cases. A quarantine facility was available on the hospital premises	A quarantine facility was allowed in the homes or lodgings under regular supervision from sanitary inspectors	Recommended the use of infant vaccination in controlling smallpox	Reconsideration of mass vaccination in controlling smallpox	First vaccinating the family having smallpox case(s) followed by vaccination of persons residing in surrounding tents along with close contacts, and further vaccination in the village or group of tents	Surveillance and containment should be given a much higher priority

Figure. Historical concepts and persons associated with development of ring vaccination strategy.

Sources

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DOI: <https://doi.org/10.3201/eid3002.221909>

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