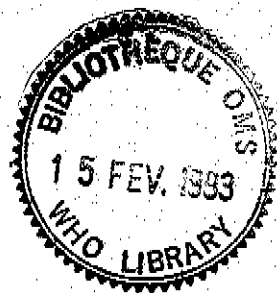


EUR/ICP/EPI 031

OPERATIONAL TARGETS FOR EPI DISEASES



WORLD HEALTH ORGANIZATION
Regional Office for Europe
COPENHAGEN



TARGET 5

REDUCING COMMUNICABLE DISEASE

By the year 2000, there should be no indigenous cases of poliomyelitis, diphtheria, neonatal tetanus, measles, mumps and congenital rubella in the Region and there should be a sustained and continuing reduction in the incidence and adverse consequences of other communicable diseases, notably HIV infection.

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OPERATIONAL TARGETS FOR EPI DISEASES

Report on a WHO Meeting

Milan
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ABSTRACT

Regional health for all target 5, adopted in 1984, calls for the elimination of seven diseases from the WHO European Region by the year 2000, and a 1984 conference endorsed the goal and set operational targets for the period up to 1990. Because most countries did not achieve the operational targets, concern arose about achieving target 5. In response, WHO convened an Expert Group to review target 5 and set new operational targets. The Group noted that eradication had proved more difficult than had been thought, and that conditions in the countries of central and eastern Europe further complicated the situation. The Group proposed new targets for reduced morbidity from six diseases (indigenous measles, congenital rubella, mumps, diphtheria, poliomyelitis and neonatal tetanus), and new operational targets covering immunization coverage, disease surveillance and, where necessary, the control of disease outbreaks.

Keywords

COMMUNICABLE DISEASE CONTROL
HEALTH FOR ALL
MEASLES – prevent/control
RUBELLA
DIPHTHERIA
POLIOMYELITIS
MUMPS
TETANUS
EUROPE
BULGARIA
RUSSIA
SWEDEN

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INTRODUCTION

Target 5 of the regional strategy for health for all included the elimination of indigenous measles, congenital rubella, diphtheria, poliomyelitis, neonatal tetanus, syphilis and malaria from the European Region by the year 2000. In 1984, the participants at the Second Conference on Immunization Policies in Europe, held in Karlovy Vary, endorsed the target and set operational targets for the period up to 1990. The WHO Regional Committee for Europe modified target 5 in 1991, adding mumps to the list of diseases to be eliminated and removing syphilis and malaria. As the 1990 target date had passed, the Regional Office convened an Expert Group to review target 5 in the light of recent knowledge and experience and set new operational targets.

At its sixth meeting, in February 1992, the European Advisory Group (EAG) of the Expanded Programme on Immunization (EPI) was concerned about the likelihood of the achievement of this target. It recommended that the WHO Regional Office for Europe convene an expert group to consider the problem.

The Expert Group Meeting on Operational Targets for EPI Diseases was therefore held in June 1992, with the support of the SmithKline Foundation. The Meeting was chaired by Dr D. Salisbury, Dr N. Begg served as Rapporteur, and Dr G. Oblapenko as Secretary. The working papers and the members of the Expert Group are listed in Annexes 1 and 2, respectively.

DISCUSSION

Most countries have not reached the Karlovy Vary targets. Even in those that achieved their targets, disease elimination has been a more difficult task than had been believed. For measles, in particular, no country has achieved elimination.

The recent political upheavals in central and eastern Europe pose particular problems for the delivery of immunization programmes. Several countries, especially those of the former USSR, suffer from

acute shortages of vaccines. Further, the number of Member States in the Region has increased considerably, with no corresponding increase in resources for the WHO Regional Office for Europe.

Any new targets that are set must be realistic and achievable. Experience has shown that the previous targets were too optimistic. Setting such targets undermines the credibility of WHO and risks damaging the confidence and support of national programme managers. The Expert Group based the targets that it proposed first and foremost on current scientific knowledge of the diseases and the vaccines available to protect people against them. The targets proposed include goals for reduced morbidity and operational targets on immunization coverage, disease surveillance and, where necessary, outbreak response.

Measles

Most of the targets on measles set at Karlovy Vary were not reached. The average immunization coverage for the Region is only 80%, lower than in three other WHO regions. Only eight countries in the European Region have achieved 95% coverage, and coverage remains below 80% in several countries.

Even countries that have achieved very high coverage for many years have not eliminated measles. Outbreaks have been reported in populations with vaccination rates as high as 99%. Two-dose strategies have also failed to eliminate the disease.

The only approach that has not been used in the Region is mass immunization with the aim of interrupting transmission. To be effective, it would have to be carried out simultaneously in all countries and achieve high coverage. The exercise would have to be repeated periodically to prevent the reaccumulation of susceptibles, which would inevitably occur even at very high levels of coverage. Such campaigns would be extremely disruptive and expensive.

Eliminating measles will clearly be much more difficult than previously believed. Even if the financial resources existed, it is doubtful that the supply of high-quality vaccine would be adequate to achieve elimination in the short term (by the year 2000). Thus, while

measles elimination should remain the long-term goal, it is more realistic and practical to set a target for the year 2000 of a substantial reduction in morbidity.

Congenital rubella

Similarly, most countries in the Region have failed to achieve targets for the elimination of congenital rubella. Surveillance is inadequate or nonexistent in several countries, and rubella vaccine has yet to be formally introduced in the national programmes of 12 Member States. Where the vaccine has been introduced, the coverage levels reported range from 25% to 100%.

The principles for the elimination of congenital rubella are clear.^a The first imperative is to protect women of childbearing age, and the second is to interrupt rubella transmission in young children. The new targets for the elimination of congenital rubella are designed to match those set for measles, as young children should be immunized against both with MMR vaccine.

Mumps

Mumps is less infectious than measles and transmission may be interrupted at relatively lower coverage levels. Nevertheless, the coverage targets for mumps match those for measles and rubella, as the MMR vaccine is used against all three. The cost-effectiveness of immunization against mumps justifies the inclusion of the disease in target 5.

Diphtheria

The widespread immunization of infants and preschool children with diphtheria toxoid since the 1940s has resulted in a dramatic decline in both clinical disease and carriage rates. Eliminating the disease should be possible. Human beings are the only known reservoir; the disease

^aHinman, A.R. et al. Rational strategy for rubella vaccination. *Lancet*, 1:39-41 (1983).

is seasonal and thus lends itself to outbreak control and diphtheria toxoid is safe, effective and inexpensive.

There are also obstacles to elimination, however. The immunity gained from vaccination is not life-long and wanes unless boosted. Serological surveys have demonstrated gaps in immunity to diphtheria, particularly in adult populations. An asymptomatic carrier state exists, even in vaccinated populations. The disease is readily misdiagnosed in countries with a low incidence. The Expert Group considered these obstacles in proposing targets.

Diphtheria incidence reached an all-time low in 1980, when only 623 cases were reported in the Region, and at that time elimination seemed imminent. Two upsurges of diphtheria occurred in the Region, however: one during 1981-1985 and a second that began in 1990 and continues. This increase can be attributed almost entirely to the situation in the former USSR, from which 97% of the cases in the Region are now reported.

Poliomyelitis

Following the success of poliomyelitis control in the Region of the Americas, WHO set a target of global eradication by the year 2000. Many countries in the European Region have already eliminated the disease and have high levels of vaccination coverage. Thirteen countries have recently reported cases, however, and there are persistent foci of endemic wild poliovirus transmission in Bulgaria, Romania, Turkey, the former Yugoslavia, and the central Asian and transcaucasian republics of the former USSR. Interrupting transmission in these areas is the first priority. This requires a strong political and financial commitment, which has not been forthcoming. In contrast to the European Region, no confirmed case of wild poliovirus infection has been reported in the Americas for almost a year.

The reporting of poliomyelitis is well established throughout the Region. Active surveillance of acute flaccid paralysis will be essential to prove that the disease has been eradicated, but is still poorly developed. The ability to detect acute flaccid paralysis at a rate of not less than 1 per 100 000 in children is an indicator of the sensitivity of surveillance. Most countries now have laboratories capable of

isolating and classifying polioviruses, although the strains can be typed as wild or vaccine-like in only a few countries. A European bank of polioviruses has been established.

Neonatal tetanus

The elimination of neonatal tetanus requires the achievement of tetanus immunity in women of childbearing age, along with improved maternity care, which includes the attendance of a trained person at every delivery.

A target has been set for the global elimination of neonatal tetanus by 1995. The disease has already been eliminated in most countries in age. The high proportion of institutional deliveries is the main reason for the absence of neonatal tetanus in most countries of the Region. Only 69 cases were reported during 1990, 67 of which occurred in Turkey. In Turkey, Portugal and the former Yugoslavia, a significant proportion (more than 5%) of deliveries takes place without a trained attendant.

RECOMMENDATIONS

1. The budget for the Regional Office should be increased at least in proportion to the number of new Member States in the Region.
2. The Regional Office should expedite the appropriate distribution of this report to ensure the commitment of Member States to the new targets proposed.

Measles

3. The new target should be:

By the year 2000, there should be no deaths from indigenously acquired acute measles in the Region and the annual incidence of confirmed cases of measles in each country of the Region should be less than 1 per 100 000 population.

Operational targets

4. Countries that have achieved an immunization coverage of 90% should achieve 99% coverage by 2 years of age by 1995, and all other countries should do so by 1997.

Because valid contraindications to measles vaccine^a apply to less than 1% of children,^b 99% is a feasible operational target. No eligible child should remain unimmunized. High coverage in young children must be the first priority, although countries with high coverage at 2 years of age may wish to consider introducing a second dose of vaccine at 6–12 years to prevent outbreaks in adults or older children.

5. By 1997, no district in any country should have less than 95% immunization coverage at 2 years of age.

6. Measles should be a routinely notifiable disease in all countries of the Region. Countries where this is not the case should introduce legislation to make measles notifiable by the end of 1993.

Rash and fever occurring 5–14 days after vaccination should not be notified as they are usually associated with the vaccine and of no significance to public health.

7. By 1997, all countries in the Region should have efficient surveillance to identify all cases of measles. Reaching this target will require additional active measures to detect cases through death certificates, and hospital and laboratory records, in addition to routine reporting.

8. Laboratory confirmation should be sought for all sporadic measles cases by 1995, in countries reporting less than 1 case per 100 000 population, and by 1997 in all other countries.

^aExpanded Programme on Immunization. Contraindications for vaccines used in EPI. *Weekly epidemiological record*, 37:279–281 (1988).

^bHewitt, M. Incidence of contraindications to immunisation. *Archives of diseases in childhood*, 64:1052–1053 (1989).

9. From 1997, susceptibility to measles should be less than 10% in all age groups.

Reaching this target will require serological surveillance; infants aged 6–11 months should be included in such surveys. Susceptibility in this age group may be expected to increase as a consequence of being born to a woman with vaccine-acquired immunity.

10. By 1997, all outbreaks of measles (that is, where two or more generations of transmission have occurred) should be investigated and appropriate control measures taken. These measures may include the identification and vaccination of susceptibles and lowering the age at which people are vaccinated.

Congenital rubella

11. The new target should be:

By the year 2000, no indigenous cases of congenital rubella syndrome and no laboratory-confirmed rubella infections in pregnant women should occur in the Region.

Operational targets

12. Countries that have already achieved immunization coverage of 90% by 2 years of age should reach 99% coverage in both sexes by 1995; all other countries should do so by 1997.

13. By 1997, no district in any country should have less than 95% coverage at 2 years of age.

14. By 1995, every country in the Region giving rubella vaccine to schoolgirls should achieve 95% coverage.

It is essential that high coverage be achieved in young children, as low coverage will result in an increased number of cases in older children and adults, possibly with more cases of congenital rubella syndrome. Countries introducing rubella immunization in young children should ensure that the vaccine is also used to protect girls before puberty and women of childbearing age.

15. By 1995, every country in the Region should have a surveillance system capable of detecting all cases of congenital rubella syndrome.

In countries using only a selective vaccination strategy, rubella re-infections in pregnant women are likely to be detected as the sensitivity of surveillance improves.

16. By 1995, all pregnant women with rashes and all pregnant women in contact with rubella should be investigated serologically.

In countries where abortion is legal, rubella-associated terminations of pregnancy are a sensitive proxy for the impact of maternal rubella infections and should be routinely monitored.

Mumps

17. The new target should be:

By the year 2000, there should be no indigenous cases of mumps in the Region.

Operational targets

18. Countries that have already achieved 90% immunization coverage by 2 years of age should reach 99% by 1995; all other countries should do so by 1997.

19. By 1997, no district in any country should have less than 95% immunization coverage at 2 years of age.

As with rubella, high immunization coverage for mumps is essential, as low coverage will result in an increased age at infection and thus more complications.

20. Mumps should be a notifiable disease in all countries of the Region. Countries where this is not the case should introduce legislation to make mumps notifiable by the end of 1993.

Parotitis occurring in the third week after vaccination should not be notified, as it is associated with the vaccine and of no significance to public health.

21. By 1997, all countries in the Region should have efficient surveillance to identify all cases of mumps.

Diphtheria

22. The new target should be:

By the year 2000, there should be no indigenous cases of diphtheria in the Region.

Operational targets

23. By 1995, every country in the Region should achieve 95% coverage with the primary immunizations by 2 years of age.

24. By 1997, no district in any country should have less than 90% coverage with the primary immunizations at 2 years of age.

25. By 1995, every country should include a booster dose of a diphtheria-containing vaccine in children of school age (5–14 years) and achieve either 95% coverage or an immunity rate of 90% as determined by appropriate serological studies.

Countries not currently giving such a booster could consider the use of low-dose diphtheria vaccine in conjunction with tetanus vaccine at school-leaving age. In this situation, the resulting immunity would have to be assessed in young adults (aged 20–30 years).

26. All countries should have effective surveillance to ensure that no cases are missed, and laboratories able routinely to differentiate toxigenic from non-toxigenic strains.

27. By 1995, all reported cases of diphtheria should be classified as indigenous or imported.

28. By 1995, appropriate serological studies should assess the diphtheria immunity status of the adult population in all countries.

If the immunity rate in any 10-year age band, or social or ethnic group is found to be less than 75%, one or more booster doses should be given as appropriate.

29. The occurrence of a single case of diphtheria requires immediate control measures, such as isolation of the patient and the vaccination and chemoprophylaxis of contacts. During an outbreak, special measures must be taken, including mass immunization.

Poliomyelitis

30. The new target should be:

By the year 2000, or earlier if possible, indigenous poliomyelitis due to wild poliovirus should be eradicated from the Region.

Operational targets

31. By 1995, every country in the Region should achieve 95% coverage with the primary immunization by 2 years of age.

32. By 1997, no district in any country should have less than 90% coverage for the primary immunization at 2 years of age.

33. By 1993, every country should have access to laboratory facilities for isolating, typing and characterizing polioviruses as wild or vaccine-like. A regional laboratory network is essential to support this virological activity.

34. In countries reporting less than 10 cases per annum, all people suspected of having poliomyelitis and their contacts should be fully investigated by viral culture of faeces by 1993; this must be achieved by all countries by 1995.

35. By 1995, all countries in the Region should have either surveillance of acute flaccid paralysis or other means of ensuring the detection of any case of poliomyelitis in any age group.

36. By 1993, any country still having areas with cases due to wild virus should implement aggressive control strategies in addition to routine immunization activities.

Neonatal tetanus

37. The new target should be:

By 1995, there should be no neonatal tetanus in the Region.

Operational targets

38. All pregnant women should be able to deliver with the help of a trained attendant. In areas where this cannot yet be achieved, women of childbearing age, including pregnant women, should be targeted for immunization with tetanus toxoid.

39. By 1995, every country in the Region should achieve 95% coverage with the primary immunization by 2 years of age.

40. By 1997, no district in any country should have less than 90% coverage with the primary immunizations by 2 years of age.

41. By 1995, every country should include a booster dose of a tetanus-containing vaccine in children of school age (5–14 years) and achieve either 95% coverage or an immunity rate of 90% as determined by appropriate serological studies.

42. All countries should report cases of neonatal tetanus separately from cases of tetanus.

43. By 1995, all countries should analyse all cases of tetanus by the age and sex of patients. This will allow the identification of risk factors for neonatal tetanus, that is, whether cases are occurring in women of childbearing age.

44. By 1995, appropriate serological studies should assess the tetanus immunity status of the adult population. Special studies of immunity may be needed in groups where low immunity can be expected.

*Annex I***WORKING PAPERS^a**

- | | |
|----------------|---|
| ICP/EPI 031/6 | Feasibility of HFA target 5 for measles
by N. Begg |
| ICP/EPI 031/7 | Feasibility of HFA target 5 for congenital rubella
by D.M. Salisbury |
| ICP/EPI 031/8 | Feasibility of HFA target 5 for diphtheria
by A.M. Galazka |
| ICP/EPI 031/9 | Feasibility of HFA target 5 for poliomyelitis
by G. Oblapenko |
| ICP/EPI 031/10 | Feasibility of HFA target 5 for mumps
by D.M. Salisbury |
| ICP/EPI 031/11 | Neonatal tetanus in the European Region
by F. Gasse and L. Belgharbi |

^aCopies can be obtained free of charge from the Communicable Diseases unit, WHO Regional Office for Europe, Scherfigsvej 8, 2100 Copenhagen Ø, Denmark.

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