

APPENDIX A

RUBELLA CONTROL

As use of MMR or MR vaccines increases and measles eradication programs adopt these vaccines, consideration should be given to certain issues related to the control of rubella and of congenital rubella syndrome (CRS):

1. The development of a specific rubella control strategy.
2. Assessment of the likelihood of achieving and maintaining a high level of immunization coverage in the target groups.
3. Review of CRS surveillance methodologies.

Epidemiology

Rubella is transmitted chiefly through respiratory droplets. Subclinical infection is common, occurring in 40% to 60% of all cases. Peak incidence is in the late winter and early spring. The incubation period ranges from 14 to 21 days, and the disease is most communicable several days before onset of rash until 5 to 7 days after onset of rash. Infants with congenitally acquired rubella may shed the virus in nasopharyngeal secretions and urine for up to one year.

Prior to the widespread use of rubella vaccine, the disease was epidemic in 6–9 year cycles. However, when the vaccine is in wide use and populations achieve higher rubella coverage, the period between outbreaks increases. In addition, as a result of the reduction of rubella circulation among infants and children due to vaccination, unvaccinated children are less likely to come into contact with the wild virus and therefore remain susceptible as young adults.

Of principal concern in rubella control is the prevention of CRS. The most commonly observed anomalies of CRS are ophthalmologic (cataracts, microphthalmia, glaucoma, chorioretinitis), cardiac (patent ductus arteriosus, peripheral pulmonary artery stenosis, atrial or ventricular septal defects), auditory (sensorineural deafness), and neurologic (microcephaly, meningoencephalitis, mental retardation). Also, infants with congenital rubella frequently are growth-retarded and have radiolucent bone disease, hepatosplenomegaly, thrombocytopenia, jaundice, and purpuric skin lesions (“blueberry muffin” appearance).

Laboratory

As with measles, laboratory confirmation is required for rubella and CRS. Virus may be isolated from the blood and nasopharynx during the prodrome until several days after onset of the rash. Rubella virus can be excreted by CRS cases for up to a year after birth. Serologic testing of a single blood specimen for rubella IgM antibodies is commonly used to confirm the presence of acute rubella infection. In CRS, IgM antibodies may be detected for up to a year after birth.

Vaccine Effectiveness

For rubella, vaccine effectiveness has been found to be about 90%. Results from serologic studies on the duration of rubella vaccine-induced antibodies have not been uniform; however, newer, more sensitive tests indicate that loss of antibody does not appear to be a significant problem. Rubella vaccine should not be given to pregnant women or to those likely to become pregnant within 3 months after receiving the vaccine, because of a small theoretical risk to the fetus.

Control Strategies

The primary rationale for rubella immunization is the prevention of CRS. Cost-benefit analysis reveals that the benefits gained from prevention of CRS far outweigh the costs of immunization.

Studies throughout the world have found different levels of susceptibility among populations of women of child-bearing age. Even in countries where susceptibility is extremely low, CRS cases still occur. CRS is preventable through immunization, and three different approaches are commonly followed:

1. Universal immunization of young children, often at the same time as measles immunization. This approach aims at interrupting transmission of rubella. Susceptible pregnant women are therefore protected through decreased risk of exposure to circulating rubella virus.
2. Selective immunization of high-risk groups. Under this approach, girls are immunized around the age of puberty, and vaccine is offered to any susceptible adult women or given post partum to those found to be susceptible on screening during pregnancy. This strategy is based on providing individual protection.
3. Combination of the above two strategies, where both universal immunization of children and immunization of targeted females are provided. Although the most expensive, this approach provides the most rapid and effective control of rubella and prevention of CRS, through interruption of transmission and protection of high-risk groups, as well as reduced circulation of the wild virus by universal immunization.

APPENDIX B

DISTRIBUTION OF DIAGNOSES FOR DISCARDED CASES OF SUSPECTED MEASLES							
<i>JURISDICTION</i> _____							
DIAGNOSIS	YEAR						
		#	%	#	%	#	%
RUBELLA							
SCARLET FEVER							
DENGUE							
WITHOUT DIAGNOSIS							
TOTALS							

APPENDIX E

SUMMARY OF MEASLES SURVEILLANCE DATA AND SURVEILLANCE INDICATORS			
<i>COUNTRY</i> _____			
	19____	20____	20____
MEASLES SURVEILLANCE DATA			
# OF SUSPECTED MEASLES CASES REPORTED			
# OF LAB CONFIRMED MEASLES CASES			
# OF CLINICALLY CONFIRMED MEASLES CASES			
# OF DISCARDED MEASLES CASES			
SURVEILLANCE INDICATORS			
% OF SURVEILLANCE UNITS THAT NOTIFY WEEKLY			
% OF REPORTING SITES THAT REPORTED AT LEAST ONE SUSPECTED MEASLES CASE			
% SUSPECTED MEASLES CASES INVESTIGATED WITHIN 48 HOURS OF NOTIFICATION			
% SUSPECTED MEASLES CASES FULLY INVESTIGATED, INCLUDING COLLECTION OF A BLOOD SPECIMEN			
% OUTBREAKS WITH KNOWN SOURCE OF INFECTION			
% LABORATORY RESULTS RECEIVED WITHIN 7 DAYS OF SAMPLES' RECEIPT BY THE LABORATORY			

APPENDIX F

SAMPLE MEASLES ALERT NOTICE

Children with measles have been found in your neighborhood, and YOUR CHILD MAY BE AT RISK of getting this disease!

This type of measles is also called the 10-day red measles and can cause SEVERE ILLNESS with pneumonia, ear infections, brain disease, and EVEN DEATH.

If your child has a FEVER AND RASH ILLNESS, inform a doctor or health worker of this illness now.

Measles can be PREVENTED BY MEASLES VACCINE. ALL CHILDREN 6 MONTHS OF AGE AND OLDER should NOW receive the vaccine. Even if your child has already had a measles vaccination, an additional dose should be given to be sure that this disease will be prevented.

The measles vaccine is very safe and effective and will help to keep YOUR CHILD HEALTHY. Please contact your doctor or clinic to get your vaccine.

APPENDIX G

MEASLES OUTBREAK RESPONSE SUMMARY FORM									
Name of index case _____				CASE ID _____					
PROVINCE/STATE _____				COUNTRY _____					
MUNICIPALITY/COUNTY _____				VILLAGE/CITY _____					
List neighboring areas which also have measles outbreaks: _____									
Date of measles rash onset of earliest case: ___/___/___ Date of measles rash onset of last case: ___/___/___									
NUMBER OF CASES BY AGE (YEARS)									
	<1	1	2	3	4	5-9	10-14	>15	TOTALS
Suspected									
Confirmed									
IMMUNIZATION STATUS OF CASES					COMMUNITY COVERAGE				
AGE	CONFIRMED MEASLES CASES				AGE	1 + DOSES			
	Not Immunized	Documented Vac. History		Unknown		Total No.	%		
		1 Dose	2+ Doses						
<1					<1				
1-2					1-2				
3-4					3-4				
5-9					5-9				
10-14					10-14				
15+					15+				
TOTALS					TOTALS				
IMMUNIZATIONS FOR OUTBREAK CONTROL				<1	1-4	>5	TOTAL		
Date first started ___/___/___		Number vaccinations given:							
Date ended ___/___/___		Number of households visited _____							
LIST VILLAGES/CITIES WHICH WERE VISITED IN THE COURSE OF THE INVESTIGATION									
Name	Date	# Immunized		Comments (cases found?)					
_____	___/___/___	_____		_____					
_____	___/___/___	_____		_____					
_____	___/___/___	_____		_____					
_____	___/___/___	_____		_____					
Describe control activities: _____									
Describe follow-up activities: _____									
Name of investigator _____ Place _____ Date ___/___/___									

Appendix I

WEEKLY REPORTS SUMMARY							
COUNTRY _____				YEAR _____			
WK #	# SITES IN SYSTEM	# SITES NOTIFYING	% REPORTING	WK #	# SITES IN SYSTEM	# SITES NOTIFYING	% REPORTING
1				27			
2				28			
3				29			
4				30			
5				31			
6				32			
7				33			
8				34			
9				35			
10				36			
11				37			
12				38			
13				39			
14				40			
15				41			
16				42			
17				43			
18				44			
19				45			
20				46			
21				47			
22				48			
23				49			
24				50			
25				51			
26				52			
				53			