SPECIAL ARTICLE

The Changing Pattern of Certain Pediatric Infectious Diseases

by

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Abstract

In Indonesia results of efforts to attain a better quality of life in general, and the health development sector in particular are encouraging. Reduction of the number of cases admitted has been observed, and disease pattern seems to be changing. This article reviews the changing pattern of some infectious diseases in the Communicable Disease Ward, Department of Child Health dr Soetomo Hospital Surabaya. Further on it deals with the application of observations in respect of the Tridarma of the University e.i. Research, Education and Public/Medical service. Medical students, nowadays, have less practical experiences especially of the immunizable diseases. In the aspect of patient management, laboratory facilities seem to become more important, as the clinical manifestations of the diseases are less characteristic. Studies on the establisment of standard procedures for diseases that potentially become public health problems are needed.

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Introduction

In Indonesia efforts to attain a better quality of life in general and improvements in the health sector in particular shows encouraging results. Results of a study by the Central Bureau of Statistics and evaluation by the World Bank ascertain that the Indonesian development during the last decade has brought improvements of prosperity level. There was a reduction of poverty proportion, and the number of the poor/have nots has been reduced from 22% (1987) to 17% . The Ministry of Health has published a book "The Five Year Plans of Health Sector" which contains the principle goals to be achieved; a reduction of crude death rate from 7.9. (the condition at the end of *Repelita IV*) to 7.5 per 1000 population, infant mortality rate from 58 to 49.8 per 1000 live births and child mortality rate from 10.6 to 6.5 per 1000 by the end of the *Pelita V* [1]. At the end of the *Pelita IV*, the complete immunization coverage (polio-3 as the indicator) had reached 73% , and the coverage for measles 64% The UCI (universal child immunization) goal by 1990 is not considered as a problem. While reaching and maintaining the high coverage, several provinces had shifted the aim to the control phase, e.i elimination of polio and neonatal tetanus.

This article will describe the changing pattern of certain infectious diseases at the Department of Child Health, dr Soetomo Hospital Surabaya. The next part will deal with the application of such observations to the *Tridarma* of the University.

Disease trend

In general, there is an impression that the number of cases admitted is decreasing. The changes are presented in Table I. The table shows that there has been a reduction of the number of cases since 1982. The number of cases in 1984 was less than that in 1974. In 1989, 125 cases of diphtheria were admitted compared 689 cases in 1979. The number of tetanus cases (child and neonatal) (Table II and Table III) also showed a declining trend. Eventhough the coverage level of TT immunization was only 50 % in 1989, the trend of neonatal tetanus cases was more impressing. Overall, the trend of tetanus cases was similar to that of diphtheria cases. EPI (expanded program on immunization) started to include measles immunization in 1982/83. Though data showed an increase in coverage, the number of cases admitted remained relatively constant, as shown in Table IV Other diseases gave different impressions. The number of cases with fever of less than 1 week, including dengue hemorrhagic fever, and patients with fever of more than 1 week, including typhoid fever, did not follow the same trend. On the contrary one might feel concerned to observe the situation. These diseases have the potential to become public health problems in the near future. The Ministry of Health anticipates accordingly. A diagnostic approach of dengue hemorrhagic fever using a kit (a multicenter study) is underway. In the next *Pelita* typhoid fever will be taken into consideration. Current situation of typhoid fever and dengue hemorrhagic fever in the Dr. Soetomo Hospital are presented in Table V, Table VI and Figure 1. Some points should be brought out into view. As shown in Figure 1, the third and fourth grade of Dengue Hemorrhagic Fever cases in 1989 took a higher proportion than those in the preceding year.

Moreover a standard of management procedures has not been established yet. Until a vaccine against this disease becomes at the public disposal, patient management manual awaits further improvements.

Table I. *Number of diphtheria cases at Dr. Soetomo Hospital, 1970 - 1989*

Year	Total	Deaths	%	Year	Total	Deaths	%
1970	234	10	4.3	1980	500	21	4.2
1971	394	26	6.6	1981	411	17	4.1
1972	372	44	11.8	1982	570	29	5.1
1973	400	39	9.7	1983	482	33	6.8
1974	466	34	7.3	1984	359	14	3.9
1975	495	46	9.3	1985	290	15	6.2
1976	405	28	6.9	1986	223	10	4.5
1977	505	28	5.5	1987	203	15	7.4
1978	568	34	6.0	1988	171	8	4.7
1979	689	38	5.5	1989	125	5	4.0

Source : Annual report of tropical and communicable diseases [2]

Table II. *Number of tetanus cases at Dr. Soetomo Hospital 1970 - 1989*

Year	Total	Deaths	%	Year	Total	Deaths	%
1970	78	9	11.5	1980	164	16	9.7
1971	96	10	10.4	1981	143	11	7.7
1972	109	17	15.6	1982	124	15	12.1
1973	128	14	10.9	1983	123	13	10.6
1974	125	23	18.4	1984	79	6	7.6
1975	92	19	20.6	1985	99	17	17.2
1976	146	24	16.4	1986	62	10	16.1
1977	146	31	21.2	1987	58	5	8.6
1978	140	28	20.2	1988	49	-	-
1979	113	20	17.7	1989	45	2	4.4

Source : Annual report of tropical and communicable diseases [2]

Table III. *Number of neonatal tetanus cases at Dr. Soetomo Hospital 1970 - 1989*

Year	Total	Deaths	%	Year	Total	Deaths	%
1970	48	27	56.2	1980	41	16	39.0
1971	52	24	46.1	1981	37	19	51.3
1972	58	37	63.8	1982	24	13	54.2
1973	66	49	74.2	1983	32	17	53.1
1974	60	30	50.0	1984	20	8	40.0
1975	61	29	47.5	1985	22	9	40.9
1976	52	22	42.3	1986	18	6	33.3
1977	51	27	52.9	1987	11	4	36.4
1978	38	23	60.5	1988	8	5	62.5
1979	47	21	44.7	1989	7	2	28.7

Source : Annual report of tropical and communicable diseases ward [2]

Table IV. *Number of measles cases at Dr. Soetomo Hospital 1970 - 1989*

Year	Total	Deaths	%	Year	Total	Deaths	%
1970	72	9	12.5	1980	394	33	8.4
1971	68	13	19.1	1981	326	43	13.2
1972	94	23	24.5	1982	322	20	6.2
1973	205	53	25.8	1983	233	32	13.7
1974	84	20	23.8	1984	272	32	12.9
1975	98	19	19.4	1985	146	15	10.3
1976	226	41	18.1	1986	299	15	5.0
1977	233	35	15.0	1987	163	11	6.7
1978	243	47	19.3	1988	114	2	1.7
1979	258	45	17.4	1989	126	6	4.8

Source : Annual report of tropical and communicable diseases ward [2]

Table V. *Number of typhoid fever cases at Dr. Soetomo Hospital 1970 - 1989*

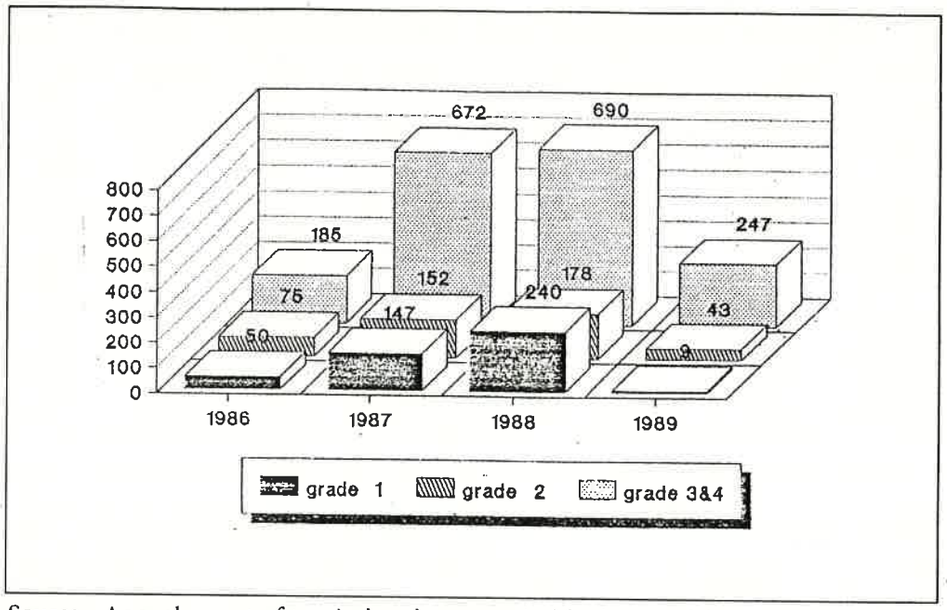
Year	Total	Deaths	%	Year	Total	Deaths	%
1970	55	-	0.0	1980	109	-	0.0
1971	135	8	6.0	1981	110	1	0.9
1972	143	9	6.3	1982	112	-	0.0
1973	166	10	6.0	1983	156	-	0.0
1974	152	5	3.3	1984	143	1	0.7
1975	150	5	3.3	1985	135	-	0.0
1976	169	2	1.2	1986	128	-	0.0
1977	372	4	1.1	1987	237	5	2.1
1978	181	1	0.6	1988	241	1	0.4
1979	190	1	0.5	1989	163	2	1.2

Source : Annual report of tropical and communicable diseases ward [2]

Table VI. *Number of DHF cases at Dr. Soetomo Hospital, 1970 - 1989*

	1986		1987		1988		1989	
Grade	Total	Deaths	Total	Deaths	Total	Deaths	Total	Deaths
I	50	-	147	1	240	1	9	-
II	75	-	152	2	178	-	43	-
III	110	-	488	3	497	8	152	1
IV	75	10 (13.3%)	184	51 (27.7%)	193	27 (14.0%)	95	18 (18.9%)
Total	310	10 (3.2%)	971	57 (5.9%)	1108	36 (3.2%)	299	19 (5.4%)

Source : Annual report of tropical and communicable diseases ward [2]



Source : Annual report of tropical and communicable diseases [2]

Figure 1. *Distribution of DHF cases by severity*

Discussion

The data should stimulate us to anticipate accordingly and to have a proper planning for the coming years. We are optimistic with the results of the national developments, the Ministry of Education has already started to implement compulsory education at the junior high school level. It will raise and improve the literacy level and people will become more aware and will more easily digest health informations/educations as well as comprehend fully the meaning of a healthy life. Science and technology are now undergoing a period of rapid development in every sector, e.g. telecommunication, electronic, etc. In the health sector we are experiencing developments of sophisticated diagnostic procedures, molecular biology, ultrasonography, echocardiography, scanning etc. Immunology has opened a new medical horizon; therapeutic, preventive and promotive developments enrich the treasury.

Educational aspects

Many medical students now complete training without sufficient experiences in the aspect of immunizable diseases. Consequently, some physicians may have lost sight of the possible impact those diseases may have on child health. Severely dehydrated patients are rarely seen, subsequently the students will have less skill to do needle insertion for intravenous fluid drip. It will be difficult for a tutor to demonstrate a specific diphtheritic pseudomembrane, general convulsion of tetanus, the "whoop" of pertussis, radiographic pictures of miliary tuberculosis etc. The resurgence of pertussis resulted from slackening of immunization coverage. The epidemiologic changes of immunizable diseases shifted the risk groups of the pop ulation, and attempts to develop improved vaccines are being made. Thus to continue lecturing topics on immunizable diseases is an obligation where in turn it is high time to develop educational aids (audio-visual) as a means of support.

Research aspects

Complete knowledge on risk factors, pathogenesis and pathophysiology etc. of immunizable diseases are lacking. Moreover standardized patient management has not been established yet. Clinical manifestations of those diseases vary from subclinical infections to the fatal type or may become chronic. Eventhough the morbidity is deacreasing, the mortality of certain diseases is constant or do not show a declining trend. We must grab every chance available to study the infectious diseases with special attention paid to the immunizable diseases.

Public medical services

The study on the effectiveness of oral typhoid fever vaccine has been conducted. Though the vaccination resulted in protection it is considered unsatisfactory. Studies on vaccine development against dengue hemorrhagic fever, malaria and hepatitis are being carried out. Until new and improved vaccines are established, improvements of patient management should continue to be attempted in the clinics. Early, simple, and inexpensive diagnostic procedures awaited intensive studies. A positive impact of the result is evident. Hospital resources, family and community health expenditures could be minimized. The quality of life could be improved if every family is empowered with essential informations. We are now facing the communication challenge and we are in the era of information. WHO, UNICEF and UNESCO have jointly published a manual "The Facts for Life". The messages put forward should be disseminated to all parents and the community. We are responsible to spread its valuable messages in collaboration with the worldwide scientific concensus on essential child health information. This information can help save the lives of many millions of children in the developing world, drastically reduce malnutrition and help protect the healthy growth of the next generation, be put into practice by almost all parents, in some degree, at very low cost, bringing a step closer to the common goal - Health for all by the year 2000.

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