



REPORT of the
DIRECTOR OF PUBLIC HEALTH
SOUTHERN HEALTH BOARD

Southern Health Board
Bord Sláinte An Deisce



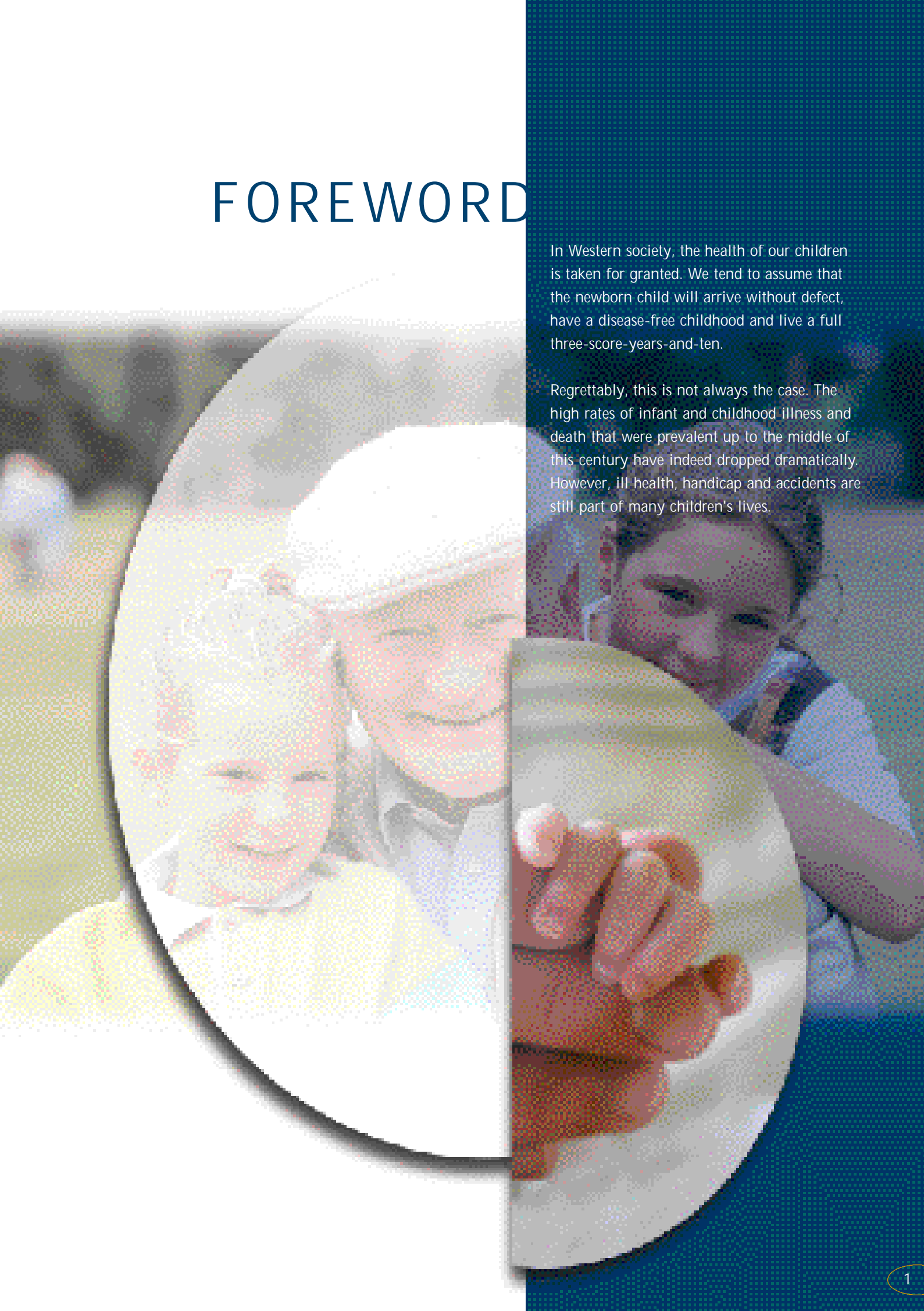
DEPARTMENT of public health

November 1999

FOREWORD

In Western society, the health of our children is taken for granted. We tend to assume that the newborn child will arrive without defect, have a disease-free childhood and live a full three-score-years-and-ten.

Regrettably, this is not always the case. The high rates of infant and childhood illness and death that were prevalent up to the middle of this century have indeed dropped dramatically. However, ill health, handicap and accidents are still part of many children's lives.



THIRD REPORT OF THE DIRECTOR OF PUBLIC HEALTH, SOUTHERN HEALTH BOARD

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Particular thanks to Dr. Finbarr O'Leary, Consultant Child and Adolescent Psychiatrist, for providing data on psychological health and helpful comments on the chapter.

There is increasing evidence that our health in adulthood is influenced in a major way by our lifestyle in childhood. Adverse outcomes that can result from an unhealthy childhood include mental illness, failure to thrive, obesity, delinquency and unemployment.

This, the third report of the Director of Public Health, gives a profile of the health status of the people of Cork and Kerry, with a focus on our children. Healthwise, all of our children do not fare equally well. We need to explore the reasons for this. We need to produce practical health messages for parents, teachers and carers.

A complete picture of the health of our people is an impossible task. No single source can provide information on their range of health problems. By piecing together information from different sources, we have developed a composite picture of the health of the people of Cork and Kerry. This outline gives us clear direction of where to orientate our health services to truly meet their needs.



Dr Elizabeth Keane
Director of Public Health

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CORK & KERRY

OUR PEOPLE

The Southern Health Board seeks to improve the health and quality of life of the people of Counties Cork and Kerry. To do this, we need to look at the structure of the population, its size, distribution and age profile. The social and economic context of the people is also vital.



THE REGION'S POPULATION

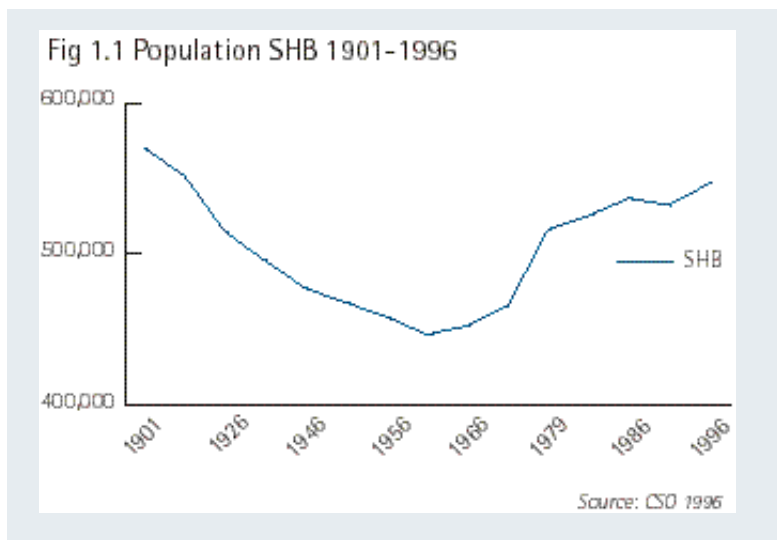
The Southern Health Board has a population of 546,640, which is 15% of the national population. It is the second largest health board in the country. The population density of the region is 115 persons per square mile. In general, the population density is quite low (Table 1.1), reflecting a rural region with its associated problems of access. However, nearly a quarter of the population lives in Cork City, with its attendant urban problems.

Table 1.1 Population Density

	Cork City	Cork Co	Kerry	SHB	Ireland
Population	127,187	293,323	126,130	546,640	3,623,087
Area (sq mile)	15	2,880	1,856	4,751	26,955
Density (persons/sq mile)	8334	102	68	115	135

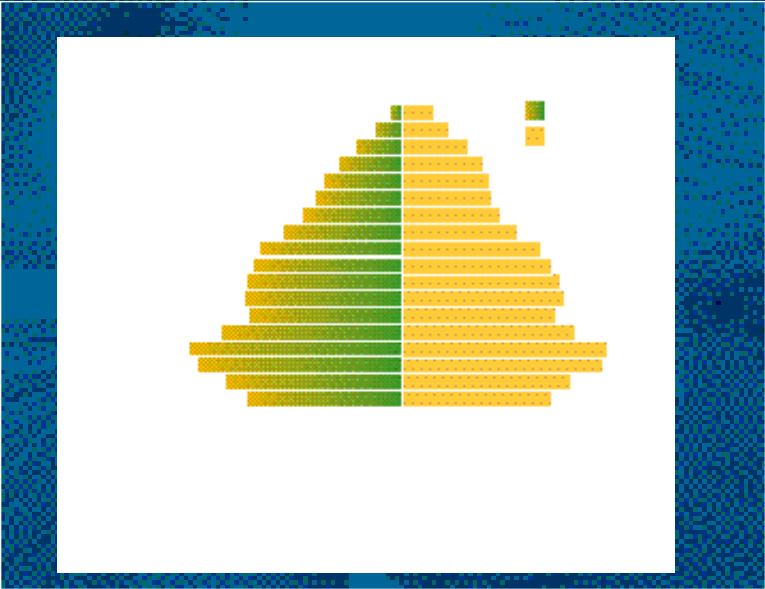
Source: CSO, 1996

For the first two thirds of this century, the population of the region showed a steady decline (Fig 1.1). This pattern reversed with a sharp rise in the early 1970s and the rise continues, though more slowly than previously.



Looking more closely at the 1990s, this increase is not uniform. The population of the inner city of Cork has remained the same. Much of the growth has occurred in the suburbs of the city, which has experienced an increase of over 13%, during the 1990s. Large towns such as Midleton and Kinsale have also grown significantly. Equally, in Kerry, much of the growth has been in and around the larger towns such as Killarney and Tralee.

The population pyramid of the region has a well-recognised pattern (Fig 1.2). There are more males than females in the younger age groups (up to the age of 29) and more females than males after the age of 65.



VULNERABLE AGES

The most vulnerable of any population are the very young and the old. The proportion of these groups can be measured using the dependency ratio, which is the ratio of the population aged under 15 and over 65 to the rest of the population (aged between 15 and 64). Kerry has a higher dependency ratio than either Cork City or Cork County (Table 1.2).

	0-14 yrs [% total]	15-64 yrs [% total]	65+ yrs [% total]	Dependency Ratio	Total Population
Cork County	72,439 [24.7]	187,476 [63.9]	33,408 [11.4]	0.56	293,323
Cork City	25,735 [20.2]	86,448 [68.0]	15,004 [11.8]	0.47	127,187
Kerry	29,832 [23.6]	78,583 [62.3]	17,715 [14.0]	0.60	126,130
SHB	128,006 [23.4]	352,507 [64.5]	66,127 [12.1]	0.55	546,640
Ireland	859,424 [23.7]	2,352,781 [64.9]	413,882 [11.4]	0.54	3,626,807

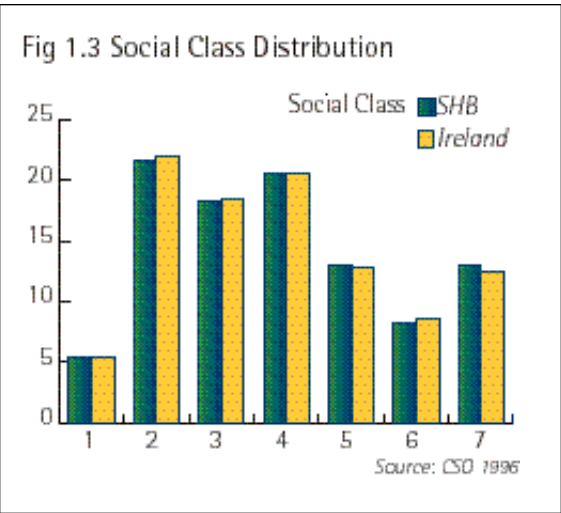
Table 1.2 Dependency Ratios for each county/county borough, SHB and Ireland

LIFE EXPECTANCY

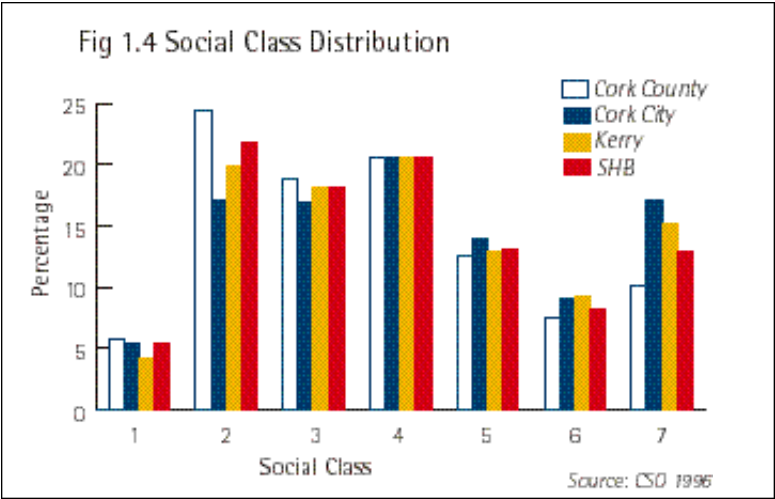
A child born in Ireland today can expect to live 73.2 years, if male and 78.7 years, if female. Irish males have a similar life expectancy to their European counterparts (73.3 years). Irish females fare less well than their European neighbours (79.9 years).

SOCIAL CLASS

Social Class is an indicator of a person's circumstances, with Classes 1 and 2 being more privileged and 5 and 6 more disadvantaged. The distribution of the population in each social class in the Southern Health Board is similar to the national picture (Fig 1.3).



Cork City, in common with all urban areas, has a higher proportion of disadvantaged social classes (Fig. 1.4).



UNEMPLOYMENT

In 1996, almost 13% of the population of the Southern Health Board area were unemployed. Economic growth in the last few years however has seen a dramatic decline in the percentage out of work (Table 1.3) and an increase in the employment participation rate.

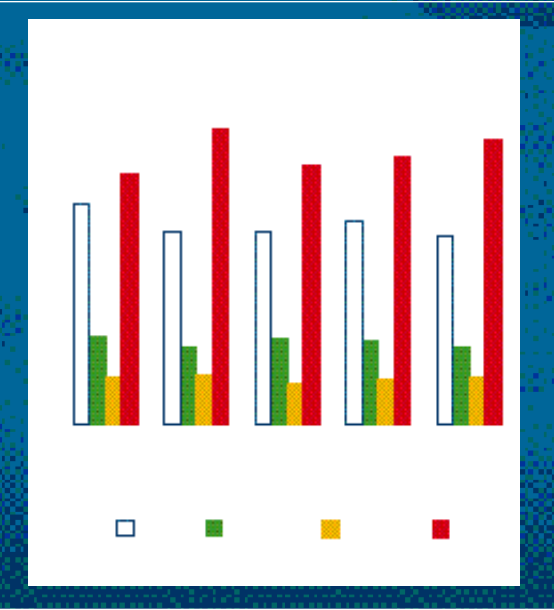
Table 1.3 Unemployment in the Southern Health Board Region

	Unemployed 1000s	Unemployment Rate	Labour Force Percentage Rate
Apr 1997	20.2	9.1	52.5
Sep-Nov 1997	24.6	10.4	55.8
Dec-Feb 1998	20.2	8.7	54.8
Mar-May 1998	18.3	7.9	54.5
Jun-Aug 1998	18.2	7.5	56.7
Sep-Nov 1998	14.7	6.4	54.7

LFS '92 & QNHS period Sep-Nov '98

The recent dramatic drop follows a steady decline in the unemployment rate over the last six years. In 1992, 27,000 people were unemployed in the Southern Health Board region compared with under 15,000 at the end of 1998.

Those who have been unemployed for a long time have greater difficulty in getting back to work. 39% of those who are unemployed in Cork City have been out of work for 3 or more years, slightly higher than the national figure (37.5%). Kerry at 34% is lower than the national picture (Fig 1.5).

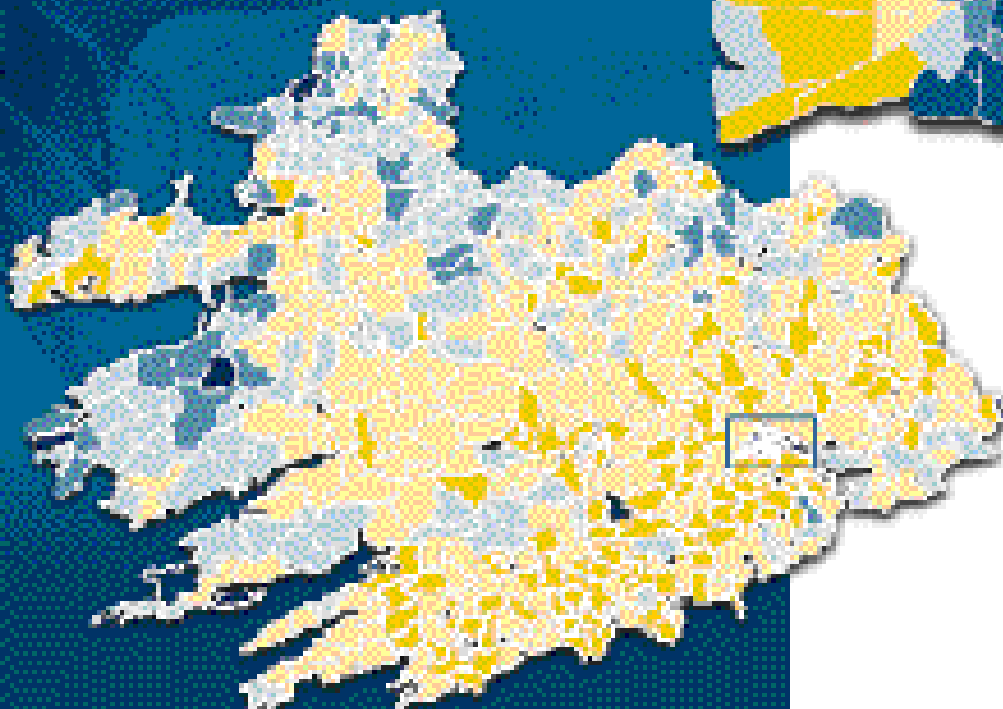


POVERTY AND DEPRIVATION

Health and wealth are closely associated. Those who are disadvantaged socially, economically or educationally are more likely to have poor health. Deprivation is difficult to measure. A deprivation index is an attempt to measure deprivation, using data from the census.

A material deprivation index has been recently developed for Ireland. The Irish index uses five indicators of deprivation: social class, unemployment, car ownership, living in rented accommodation and overcrowding. When the index is applied to the region (Fig 1.6), it suggests that Kerry, as a county, is more deprived than Cork county. Examining Cork City in detail (Fig 1.7), a substantial proportion of the city is identified as being more deprived. This index gives clear direction as to where health services should be targeted.

BELOW: MATERIAL DEPRIVATION INDEX
FOR THE SOUTHERN HEALTH BOARD




ABOVE: MATERIAL
DEPRIVATION INDEX
FOR CORK CITY



DEATHS

In 1997, there were 5,129 registered deaths in Cork and Kerry (Table 2.1). The proportion of premature deaths (i.e. deaths before the age of 65) in the SHB region is similar to that in Ireland as a whole.



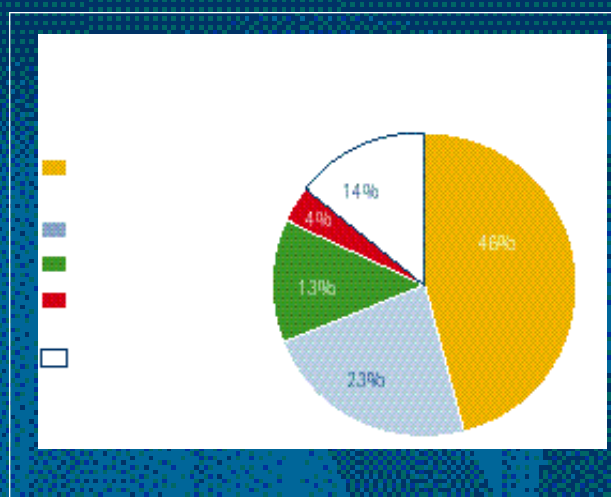
	Cork City		Cork County		Kerry		SHB		Ireland	
	no.	rate	no.	rate	no.	rate	no.	rate	no.	rate
Births	1743	13.7	4096	14	1576	12.5	7415	13.6	52311	14.3
Deaths total	1357	10.7	2436	8.3	1426	11.3	5219	9.5	31605	8.6
- male	659		1283		755		2697		16461	
- female	698		1153		671		2522		15144	
Premature deaths	303		492		222		1017		6512	

Table 2.1 Births and Deaths in the SHB and Ireland: Numbers and Crude Rates per 100,000 for 1997

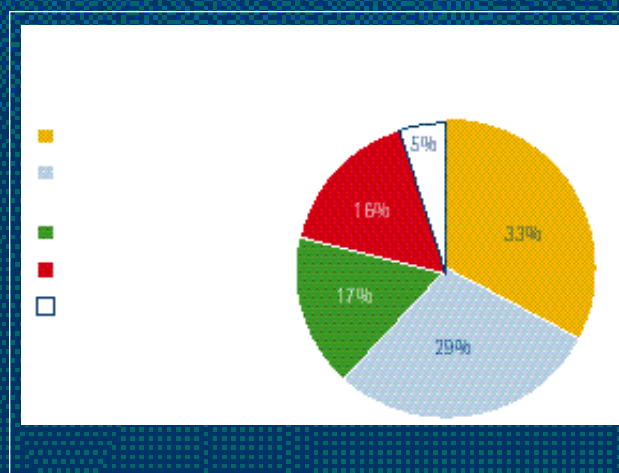
source: CSOVital Statistics, 1997

PRINCIPAL CAUSES OF DEATH

The major causes of death for both sexes in Cork and Kerry are circulatory diseases (including heart attacks and strokes), cancer, respiratory disease and injury or poisoning (Fig 2.1). This is very similar to the national pattern.

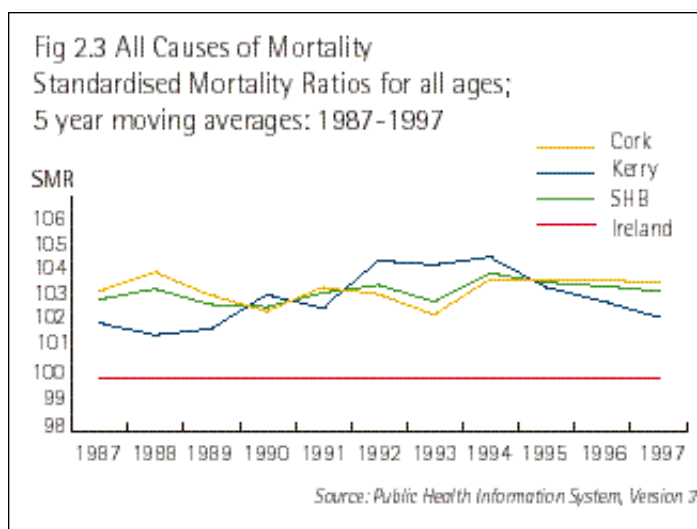


As the expected life span is at least three score and ten, premature deaths (deaths under 65 years) are particularly tragic (Fig 2.2). Here we can see that the pattern changes. The commonest cause of death in this age group is cancer, with circulatory system diseases now in second place. Again, the proportion in each category is very similar to national proportions.

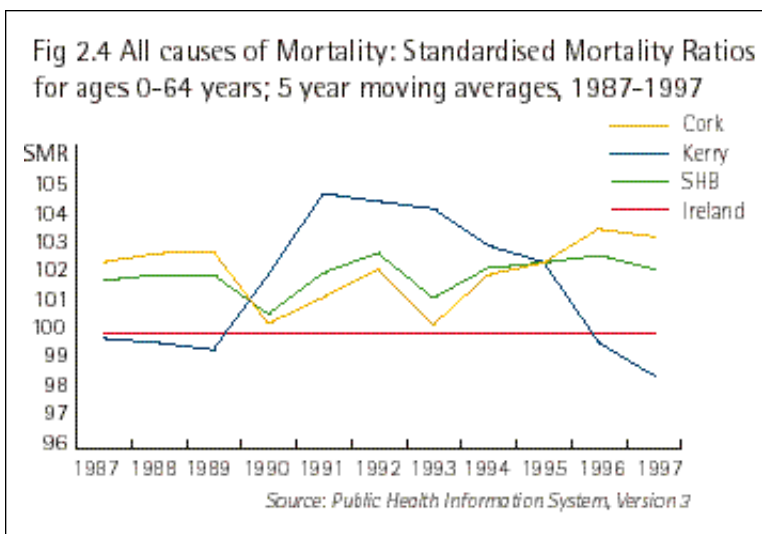


ALL CAUSES MORTALITY - ALL AGES

Regions differ in their age structure, which naturally affects the number of deaths per year in a particular area. Regions with a larger number of older people will have a greater number of deaths. The **Standardised Mortality Ratio (SMR)** is an overall measure of mortality, which takes account of the variations in age distribution between one region and another. The average for the country is taken as 100. A figure of over 100 is worse than the national average and less than 100 is better. The SHB region has a higher mortality rate than the national rate (Fig 2.3). Indeed, it is one of the highest in the country. Ratios are presented as 5 year moving averages, that is, the average ratio over a 5 year time span, to minimise annual fluctuations in the SMR.



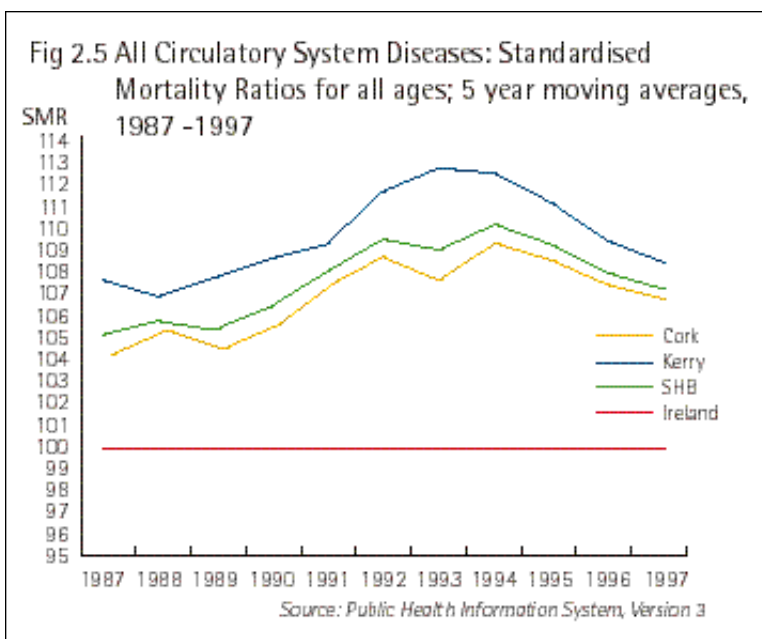
PREMATURE DEATHS - ALL CAUSES



Premature deaths in the Southern Health Board region as a whole have remained pretty stable throughout the period 1983-1997 (Fig 2.4). Cork has a higher level of premature mortality than the national average and this discrepancy is widening. Kerry's picture, on the other hand, has been improving.

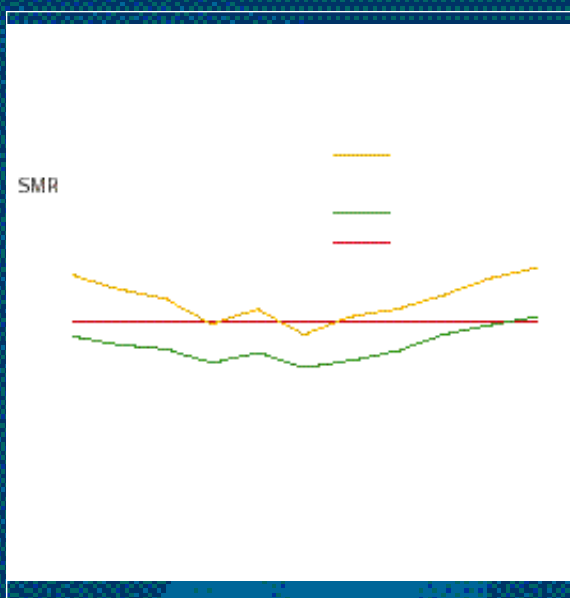
CIRCULATORY DISEASES

Looking at circulatory diseases, the experience in Cork and Kerry is consistently worse than the national average (Fig 2.5). As many of the risk factors for circulatory disease are related to an unhealthy lifestyle, changing the patterns of our behaviour will reduce the number of these avoidable deaths.



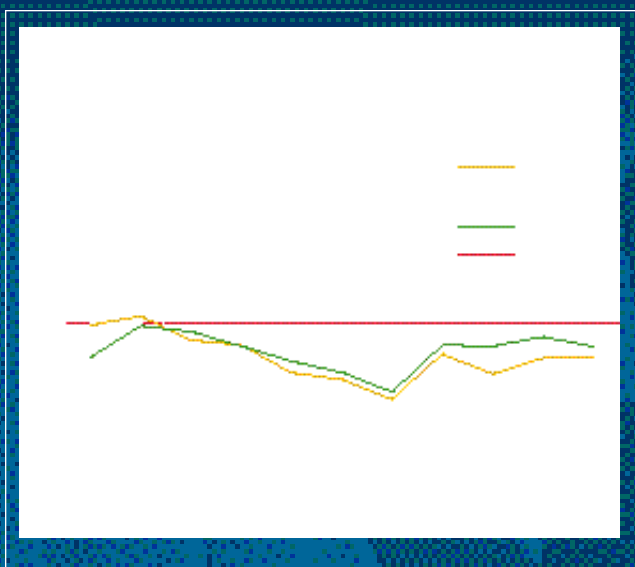
CANCER

The SMR for cancer at all ages in the Kerry area has been lower than the national average throughout this period (Fig 2.6). Cork's figures have not been so favourable and have been rising over the recent 5 years.



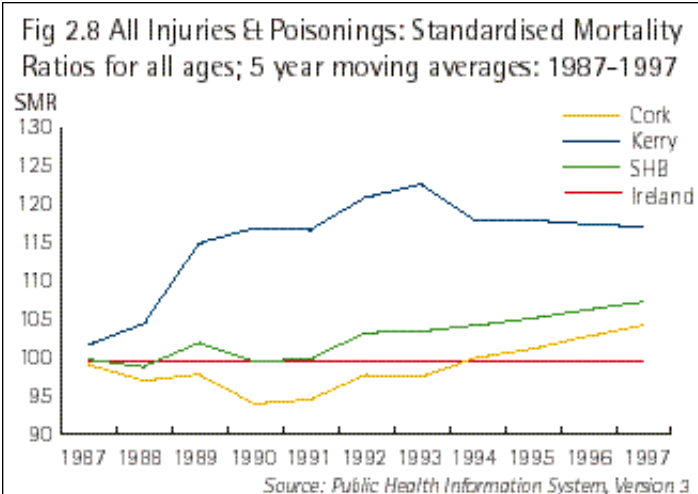
RESPIRATORY DISEASES

Mortality from respiratory diseases is lower in the Southern Health Board region than nationally (Fig 2.7). Ratios were particularly low in Kerry over this period, though in the last 3 years, trends have been rising.



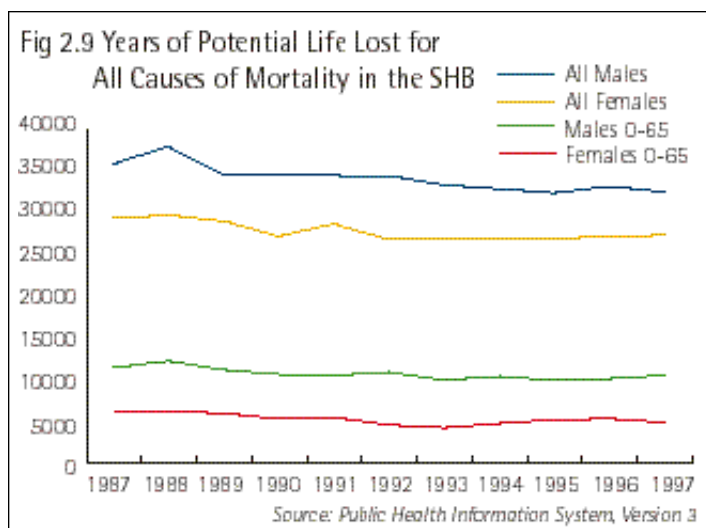
INJURIES AND POISONING

From an initially favourable position, the SMR for injuries and poisonings has shown a steady increase in the Southern Health Board region since 1983 (Fig 2.8). This is particularly the case in Kerry. The burden of fatal injuries impacts predominantly on the young.



YEARS OF POTENTIAL LIFE LOST (YPLL)

Another way of examining the impact of death, particularly among young people, is to measure the number of years lost by an individual if she/he had lived a full life span (Fig 2.9). This measure is known as YPLL or 'Years of Potential Life Lost'. The population of Cork and Kerry has been increasing for a number of decades. If mortality experience remained the same, we would equally expect an increasing YPLL. The static trends observed imply that more people are living their full life span.



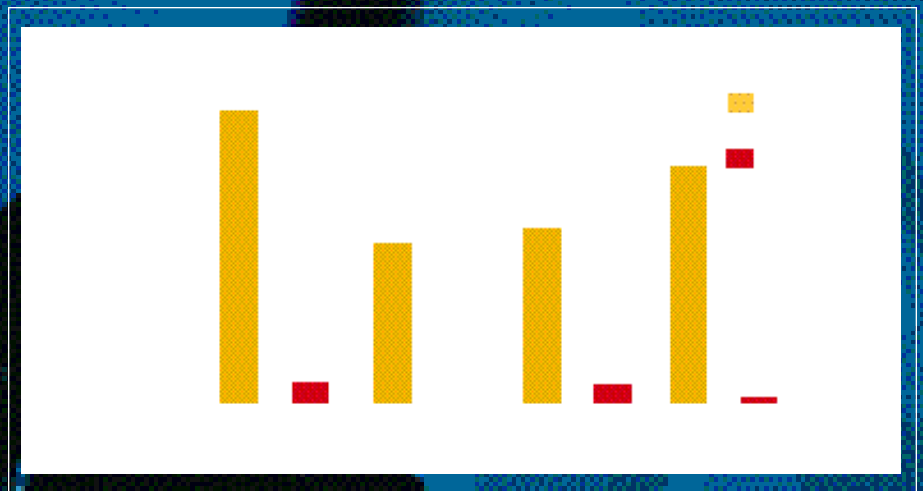
chapter three

INFECTIONS

In Ireland, as in the rest of the Western World, infections are no longer the major killers that they were at the start of the century. However, they are still a major cause of illness and hospitalisation, particularly in children.

MENINGOCOCCAL DISEASE - THE PICTURE FOR 1998

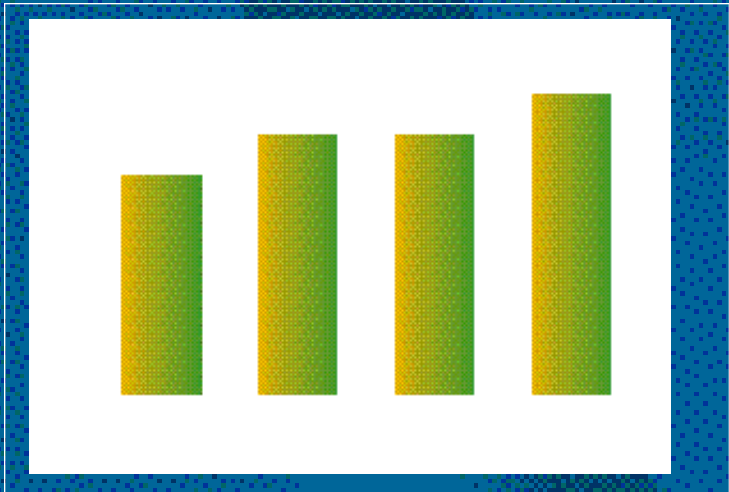
The figures for 1998 show an increase in the number of cases of meningococcal disease compared to 1996 and 1997 (Fig 3.1). There was 1 death in 1998 compared to 5 deaths in 1997.



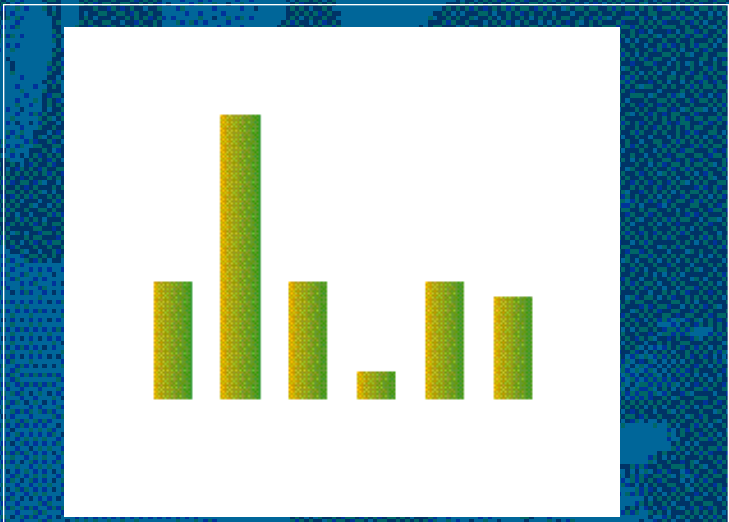
In 1997, the Meningococcal Reference Laboratory was established in The Children's Hospital, Temple Street, Dublin. This is a specialist laboratory providing a range of tests to assist in the diagnosis of meningococcal disease. The establishment of this laboratory has improved our ability to diagnose the infection and has increased the proportion of suspected cases that are confirmed as definite cases.

The meningococcus organism has three main strains - A, B and C. In 1998, Group B was the commonest group, comprising 53% of cases.

Meningococcal disease tends to occur more commonly in winter and spring months. In 1997 and 1998, the seasonal distribution was unusual with no decrease in cases recorded in the summer months, usually a time of low incidence (Fig 3.2).



Young children are most at risk of acquiring meningococcal disease. Figure 3.3 shows the breakdown of cases, with 52% of cases occurring in the under five year olds.



Following a significant decrease in 1996, the number of cases of meningococcal disease increased in 1997 and 1998.

In the absence of an efficient vaccine, it is important to ensure that parents and carers are alert to the early signs and symptoms of meningococcal disease. In recent years, the Departments of Public Health and Communications in the Southern Health Board have conducted an extensive media campaign of public information on meningitis, (focusing on meningococcal disease). This has been augmented by campaigns by the Meningitis Research Foundation and the Student Health Services in the third level institutions.

An evaluation of this media campaign was carried out to assess the impact on public knowledge and to assist in planning ongoing information campaigns.

OTHER TYPES OF MENINGITIS

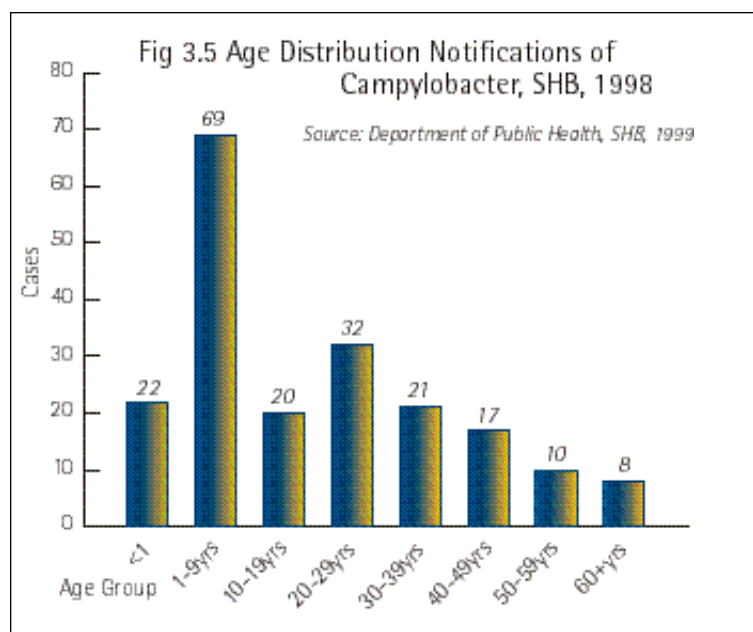
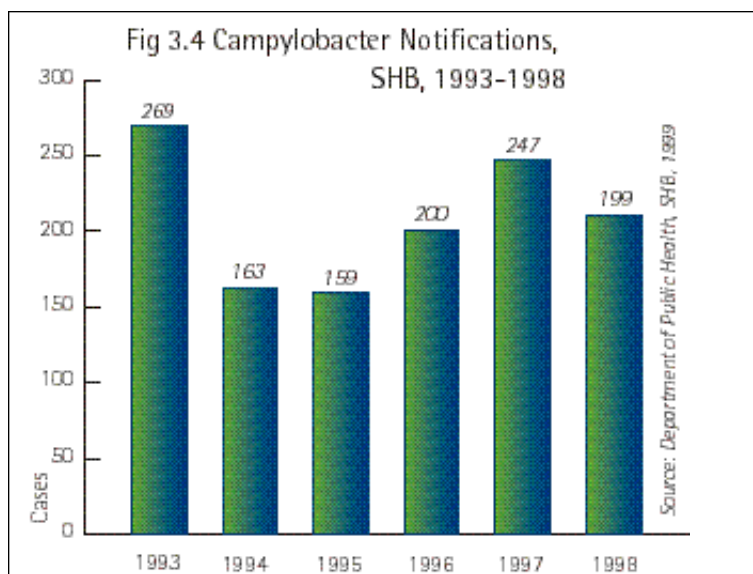
Other causes of bacterial meningitis include Haemophilus influenza type b (Hib) and Pneumococcal. There were three cases of pneumococcal meningitis in the Southern Health Board area in 1998 with one death.

FOODBORNE DISEASE IN CORK AND KERRY. WHO CAME TO DINNER ..?

Worldwide, the threat posed by foodborne disease has increased and all sectors of the food industry and consumers are being made aware of well recognised and emerging challenges.

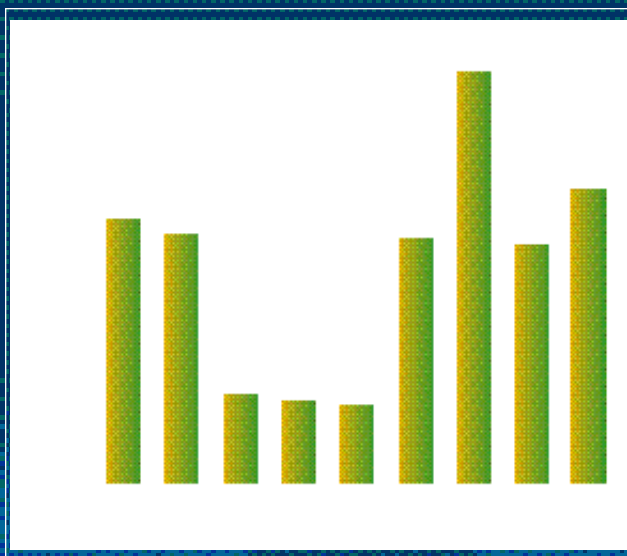
The commonest foodborne infections reported in Western Europe are Salmonella and Campylobacter. In Ireland, and specifically in the Southern Health Board area, this pattern also exists. It is useful to review the current situation of these pathogens together with that of E.coli 0157 which has become prominent as a serious global public health concern.

Campylobacter notifications have increased slightly over the 2nd half of the 1990s in our region (Fig 3.4).

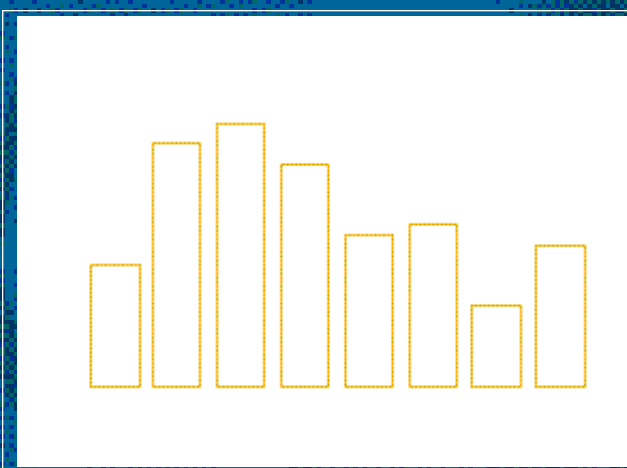


No outbreaks were identified in 1998 and the 199 cases were apparently sporadic. The age distribution of cases is of interest (Fig 3.5), with 57% of cases being in children under 10 years of age. The male:female ratio was 5:4 and two thirds of the cases were notified in the latter half of the year.

The *Campylobacter* bacterium causes gastroenteritis with crampy abdominal pain and diarrhoea. It can be eliminated from food by thorough cooking particularly of meat and poultry. Some research on the causes of the rise of *Campylobacter*, which is an international phenomenon, are being conducted but the organism does not command the same attention as other foodborne infections because it does not have long-term health consequences and is therefore not seen as top of the list of research priorities.



Salmonella human cases in 1998 were on a par with the previous year (Fig 3.6). Teenagers and young adults were at greatest risk from salmonella infection (Fig 3.7). There was a marked seasonal increase in cases in the late summer months with 47% of reported cases occurring in the three month period July to September. Different animal sources give rise to different Salmonella serotypes and the pattern in the Southern Health Board was consistent with that of 1997, i.e. S.typhimurium (mainly pork and beef in origin) predominated, while 22% of cases were due to S.enteritidis (mainly poultry in origin).



E.coli O157 has emerged as a serious global public health concern.

In Ireland, the number of reported cases has increased steadily from 8 in 1996 to 76 in 1998. This incidence is high in comparison with other European countries. In the Southern Health Board area, we had a record number of cases in 1998. Of the 16 cases, 5 were children (<19 years) and 5 were young adults in the 20-29 year age group. Minced beef was implicated in a quarter of the cases. Although five patients required hospitalisation they all recovered fully in time. Half the cases (8) were family outbreaks involving 3 families.

A number of outbreaks of gastro-enteritis occurred in 1998 (Table 3.1). These were thoroughly investigated and the summary findings are given in the table. Settings that we would consider to be at risk because of mass catering predominated, as did the more vulnerable types of food - mainly meat dishes and uncooked vegetables.

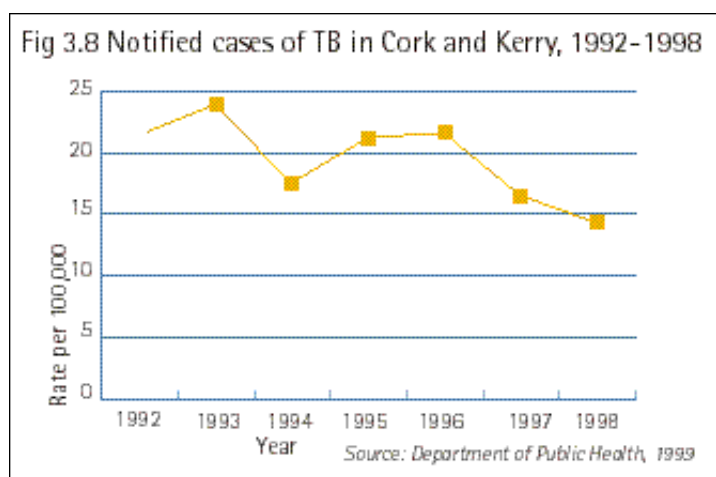
Table 3.1 Outbreaks of Gastro-Enteritis, Southern Health Board 1998

Month	No.	Micro-organism	Setting	Probable Source	Hospitalised Cases
April	2	E.coli O157	Household	Minced Beef	1
May	74	Norwalk-like virus	School outing	Water	0
May	5	Salmonella infantis	Restaurant	Salad Vegetables	1
July	4	E.coli O157	Household	Unknown	3
July	5	Salmonella typhimurium	Institution	Eggs	4
Sept	58	Unknown	Wedding	Chicken	0

Source: Department of Public Health, 1999

TUBERCULOSIS (TB)

Last year saw the welcome continuation of the downward trend in TB notifications in Cork and Kerry (Fig 3.8). This trend reflects the decreasing national incidence pattern.



Overall TB notifications alone, however, mask significant epidemiological features of this infectious disease, key elements of which are highlighted.

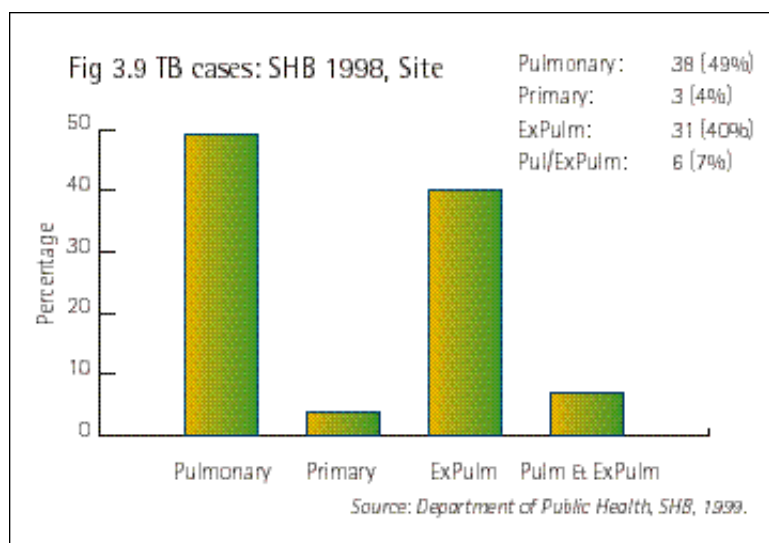
Age: The time is now well past when TB was predominately a disease of older people. Last year, as in 1997, the under 30 age group accounted for approximately one third of cases (Table 3.2).

Table 3.2 Age group of TB cases in Cork and Kerry, 1998

Age Group	Number (%)
<18	5 (6)
18-30	21 (27)
31-65	26 (33)
>65	26 (33)
ALL	78 (100)

Source: Department of Public Health, SHB, 1999

Site: Extrapulmonary TB (i.e. TB in a body site other than the lung) comprised 40% of cases in 1998 (Fig 3.9). Tuberculosis infection in a site other than the lung often presents a diagnostic challenge to clinicians, emphasising the need for ongoing clinical awareness of the possibility of TB infection.



Infectivity: Patients with TB who cough up infected sputum (i.e. with sufficient tubercle bacilli to be seen on direct microscopy) are regarded as infectious. Overall, 32% of cases in 1998 were infectious at the time of diagnosis. This significant rate of infectivity reinforces the need for immediate notification of all newly diagnosed cases to enable early commencement of contact tracing.

Multi-drug Resistant TB (MDR TB): There are a limited number of antibiotics available to treat TB. The development of resistance to any one of these drugs is a concern; the emergence of multi-drug resistance requires a concerted prevention and control strategy. Between 1983 and 1990, there was one case of MDR-TB in this region. In 1998, a case notified the previous year developed MDR-TB. The potential exists for an increase in MDR-TB notifications.

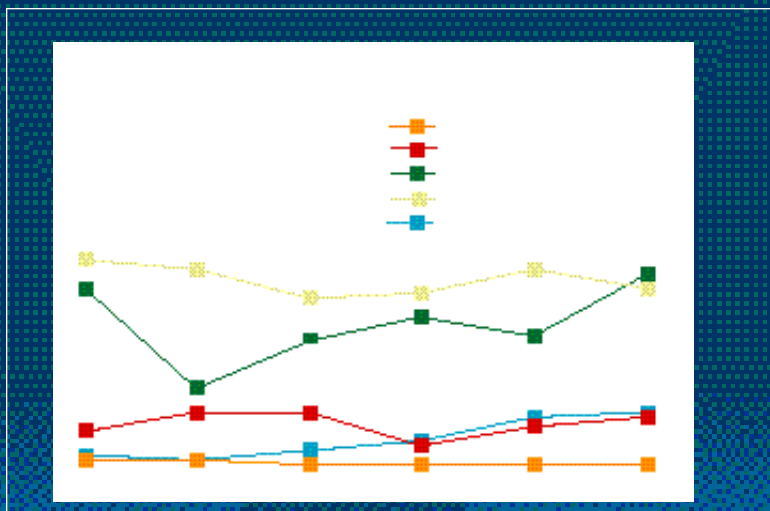
Non-Nationals: Two cases of TB among our non-national community were notified in 1998 (there were five in 1997). As part of a new surveillance programme being introduced in 1999 in the Southern Health Board Area, refugees, asylum seekers and immigrants will be offered screening for a variety of infectious diseases, including TB.

Surveillance is defined as the ongoing systematic collection, collation, analysis and interpretation of data, and the dissemination of information to those who need to know in order that action may be taken.

Since the publication of the 'Report of the Working Party on Tuberculosis' in November 1996, enhanced TB Surveillance is underway at local, regional and national level. A Regional Collaborative TB Committee was established in 1997, representative of key professional groups involved in the control of TB. Armed with timely and improved information, the Committee is actively utilising this surveillance data to guide and enhance prevention and control programmes in the region.

The importance of compliance with prescribed anti-tuberculous treatment is central to achieving good cure rates for tuberculous and preventing the emergence of drug resistance.

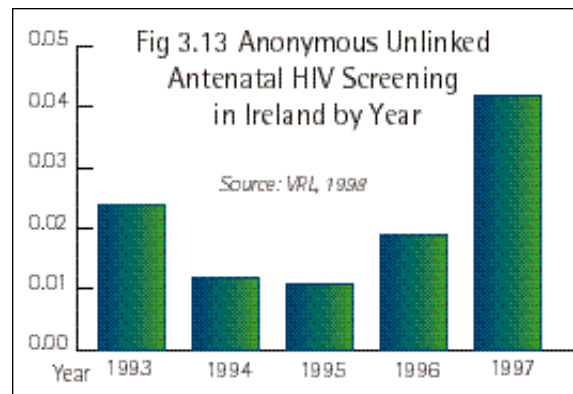
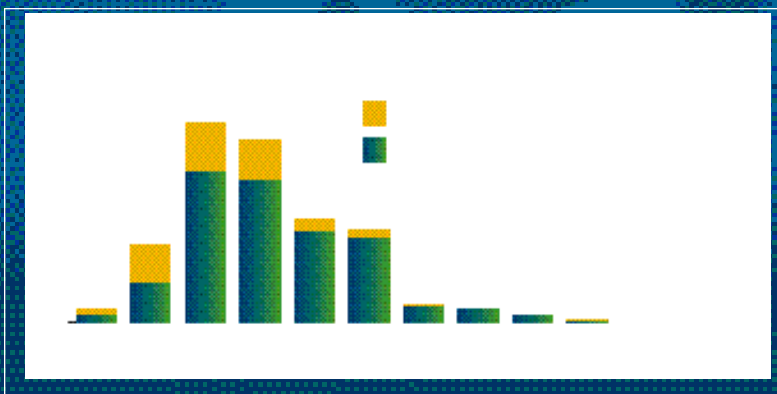
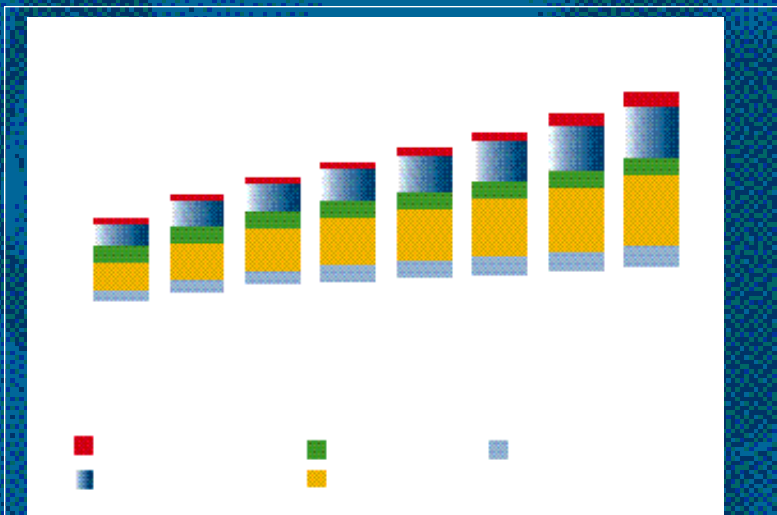
In addressing non-compliance problems in Cork and Kerry there have been several recent instances of close collaboration between staff working in public health, community care and hospitals with regard to directly observed therapy. This rigorous monitoring of patient adherence to treatment is utilised to improve compliance in difficult circumstances.



HIV INFECTION

Surveillance figures suggest an increasing prevalence of HIV infection in the heterosexual population in Ireland. Fig 3.10 shows the number of new HIV infections per annum in Ireland for 1992-7 by mode of transmission. A shift in the main source of infection from intravenous drug abuse to sexual spread is apparent (Fig 3.11).

Young men are more likely to take risks and are thus more likely than young women to get infected (Fig 3.12). However the national anonymous HIV testing programme of pregnant women shows an increasing prevalence of infection while the numbers of those found to be infected remains low overall (Fig 3.13). So far 8 children in Ireland have died of AIDS and another 14 are currently being treated.



When a pregnant woman has HIV infection, the baby she is carrying in her womb is also exposed to the infection and the baby may go on to develop HIV infection and subsequently AIDS. Up to 30% of babies exposed in this way may be infected. By the end of 1998, 160 children had been born in Ireland to mothers who were carriers of HIV (Human Immunodeficiency Virus), the virus that causes the illness AIDS. Forty-two (26.3%) of these children were infected with the virus.

In 1994, effective treatment became available which greatly reduces the risk of infection to the baby in the womb, provided the pregnant mother takes the treatment in time. Since then, HIV infected mothers identified in time are treated. Their children were free of infection at birth. The need is clear to identify mothers positive for HIV so that treatment can be offered to help safeguard the unborn child from infection. A national programme has been recently introduced to arrange for the routine testing of all pregnant women to identify those who need the treatment. Mothers who are HIV positive should not breast feed, as the virus is present in the breast milk.

CONCLUSIONS:

All indicators point to the increasing importance of heterosexual transmission (sex between men and women) in the spread of HIV infection in Ireland. Younger adults are most at risk of infection. There is a need to increase public awareness of the facts of HIV infection and on mode of transmission (how the infection is caught). The good outcome of children born to pregnant women who were identified in time for treatment supports a policy of routine voluntary antenatal HIV testing.

chapter four

CORK & KERRY
OUR CHILDREN

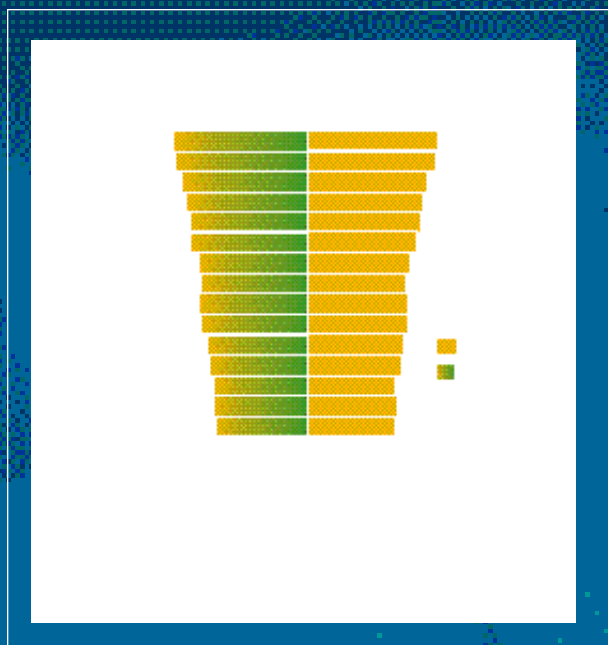
Ireland has a comparatively young population. Almost a quarter of our citizens is aged under 15 years (Table 4.1). This proportion, although declining steadily over the past decade (29% in 1986), well exceeds that of our fifteen European Union neighbours where the average population 0-14 years is 18%.

Table 4.1 Age breakdown of the population aged 0-14, SHB and Ireland

	0-4 yrs	5-9 yrs	10-14 yrs	Total 0-14 yrs	Total pop	0-14 as % of total pop
Cork Co	21,018	23,779	27,642	72,439	293,323	24.7
Cork City	7,708	8,446	9,581	25,735	127,187	20.2
Kerry	8,224	9,738	11,870	29,832	126,130	23.7
SHB	36,950	41,963	49,093	128,006	546,640	23.4
Ireland	250,394	282,943	326,087	859,424	3,626,6087	23.7

Source: CSO, 1996

The population pyramid for this age group reflects the fall in birth rates in the region in the early part of this decade (Fig 4.1).



BIRTHS

There were 7,415 babies born in Cork and Kerry in 1997, which was 14% of the total number of babies born in Ireland that year. The crude birth rate (numbers of births per thousand population) enables us to make comparisons between regions. The Southern Health Board crude birth rate was 13.6 per 1,000 in 1997, which was lower than the national rate (14.3 per 1,000). Birth rates declined both regionally and nationally up to 1995 (Fig 4.2). Since 1995, rates have begun to climb again. The pattern is steady for Ireland, but birth rates in the Southern Health Board area fell slightly in 1997.

Family size has also fallen. The best measure of fertility over time is the Total Fertility Rate (TFR), which is the expected number of births per woman if the age specific rates applicable to a given year were to remain unchanged throughout a woman's fertile years. The replacement of the population requires a TFR of 2.1. There has been a dramatic drop in TFR over the last two decades and the TFR is currently running below the replacement rate both regionally and nationally (Fig 4.3).

Fig 4.2 Crude birth rate, SHB and Ireland, 1988-1997

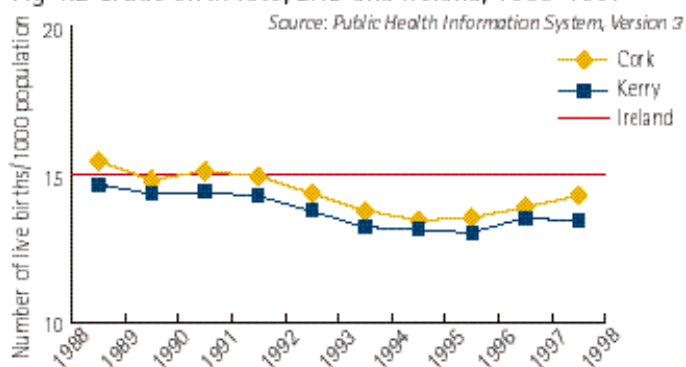
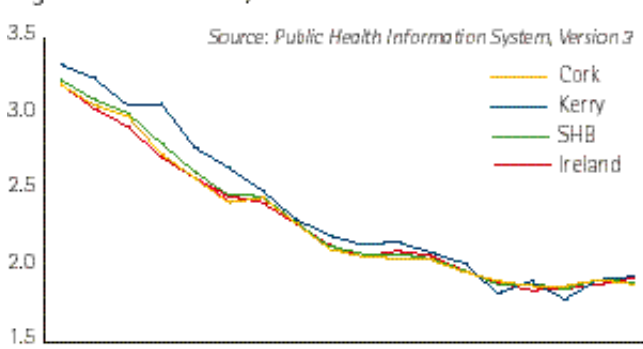
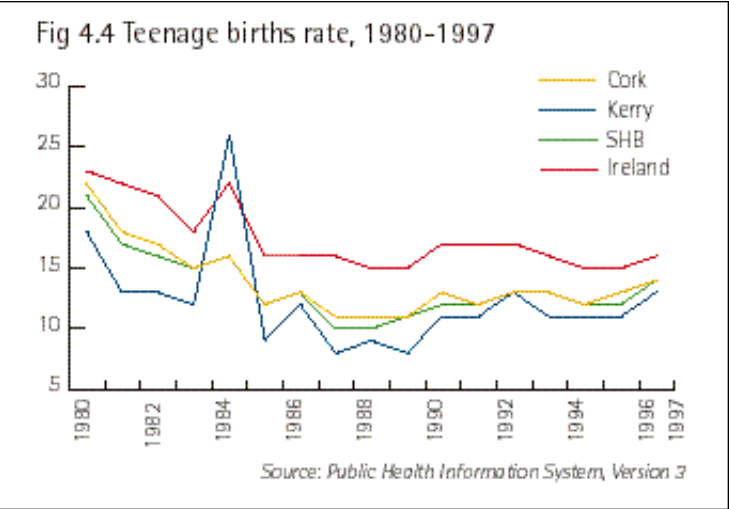


Fig 4.3 Total Fertility Rate 1980-1997



TEENAGE PREGNANCY

Young mothers and their babies are at a higher risk of both social and health problems. Teenage pregnancy rates have been falling since the early 1980s, both locally and nationally (Fig 4.4). Rates for the Southern Health Board are lower than the national rates.



However, there is little room for complacency. Table 4.2 shows that between 4 and 6 babies are born every year to a mother that is under 15 years old in the SHB and over 4% of births are to 16-19 year olds.

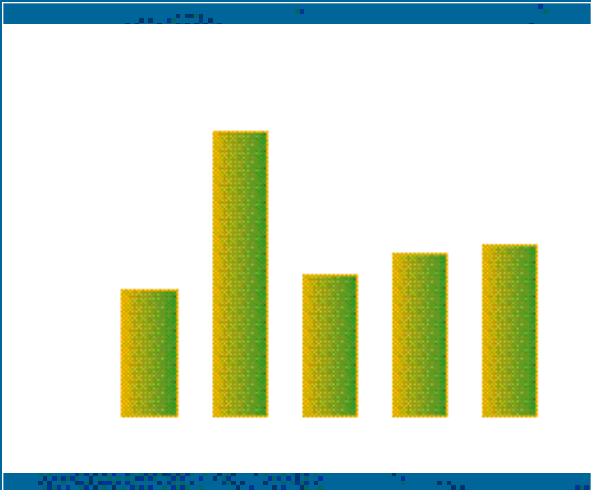
Table 4.2 Births to Teenage Mothers, SHB, 1992-1996

	SHB	SHB	Total Births
	<15 yrs (%)	16-19 yrs (%)	SHB
1992	6 (0.08)	296 (4.0)	7,391
1993	6 (0.08)	294 (4.1)	7,133
1994	6 (0.08)	263 (3.7)	7,101
1995	4 (0.06)	309 (4.3)	7,080
1996	4 (0.05)	333 (4.5)	7,396

Source: Report of the MWHB, Department of Public Health, 1997

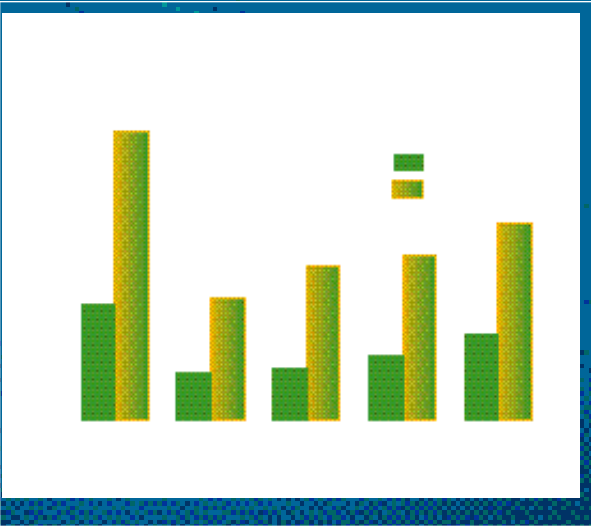
LONE PARENT HOUSEHOLDS

Parenthood is challenging for everyone who experiences it, but lone parents can encounter particular difficulties. Just over 13% of families in the SHB with children under 15 years of age are lone parent households, which is similar to the national picture (Fig 4.5). There is a greater proportion of lone parent households in Cork City than in Cork County or in Kerry.



BIRTHS OUTSIDE MARRIAGE

There has been a significant increase in the past decade in the percentage of babies born outside marriage (Fig 4.6). Cork city, as is common in urban settings, has a significantly higher proportion than the national average.



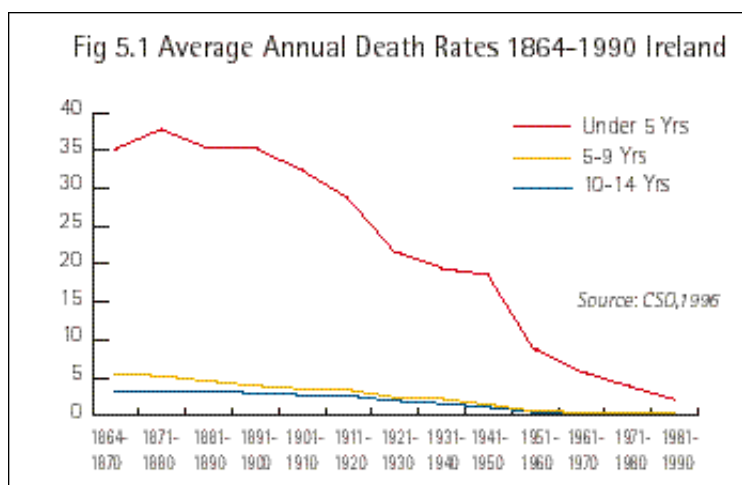
chapter five

DEATHS

Fifty years ago the vast majority of deaths in Irish children aged between one and five years were caused by infectious diseases, including pneumonia, tuberculosis, whooping cough, measles, gastro-enteritis and diphtheria.

In older children aged between five and fifteen years, the most common cause of death was tuberculosis. Major changes in the pattern of mortality have evolved since that time (Fig 5.1).





Ireland, like most Western European countries, has experienced a reduction in overall mortality in the last half century. The general improvement in economic and social standards over that time has played an important part in reducing mortality. Effective health services, relating to prevention and care, have also contributed towards this better outcome. Preventive services have especially reduced mortality amongst infants and children, particularly in the area of infectious diseases. The reduction of infectious disease mortality in infancy and childhood has been due largely to effective immunisation programmes.

AGE-RELATED DISTINCTIONS

Causes of death differ between the very young and the older child. This is particularly so for the first week of life compared with later infancy, but also for the first year of life as compared with later childhood years. Hence, childhood mortality is not examined as a homogeneous entity but is generally broken down into quite distinct age bands. This chapter will concentrate on three age-related divisions: perinatal mortality, infant mortality (Table 5.1) and mortality among children beyond the first year of life.

Table 5.1 Childhood Death Rates: Divisions & Definitions

Stillbirth Rate	Perinatal Mortality Rate	Infant Mortality Rate
Number of stillbirths per 1,000 live and stillbirths per year	Number of stillbirths and deaths in the first week of life per 1,000 live and stillbirths per year	Number of deaths in the first year of life per 1,000 live births per year

PERINATAL MORTALITY

Up to the first quarter of this century, childbirth was an event that threatened the life of both mother and baby. Thankfully, this is no longer the case, but some babies still die in the period around birth, the so called "perinatal period". Between 1988-1993, there were 44,135 babies born in the Southern Health Board region. Just over 1% died in the perinatal period.

A national Perinatal Reporting System has been developed which provides national statistics on perinatal events. This gives the characteristics of mothers and babies, the pregnancy outcomes, especially perinatal mortality, and considers aspects of perinatal care. Since 1973, perinatal mortality rates in Ireland have dropped from 24 to 9.1 in 1993, reflecting marked improvements in obstetric and neonatal care.

Official reports have placed Ireland as having one of the highest perinatal mortality rates in the EU. However, making such comparisons between countries is a meaningless exercise as apparently low rates in other countries are attributable to the availability of abortion.

Perinatal mortality is affected by a myriad of factors, but the main ones can be classified as low birth weight, maternal age, parity (number of pregnancies that a mother has had prior to the present one) and social class. Many of these factors are interrelated, as low socio-economic status and teenage pregnancy are associated with both low birth weight and perinatal deaths. Their independent contribution is hard to assess.

INFANT MORTALITY

In 1930, in Cork City, 77 out of every 1,000 babies died before their first birthday. The Annual Report of the Medical Officer of Health at that time commented that "the figure of 77 per 1,000 births was the third lowest during the whole period from 1881.... and the trend is definitely and decidedly downward."

This decline in infant deaths has continued since the 1930s and in 1997 only four of every 1,000 babies died before their first birthday, a total of 30 babies in Cork and Kerry in 1997. Figure 5.2 shows the infant mortality rate (the number of deaths in the first year of life per 1,000 live births) in the Southern Health Board compared to the national figures for the years 1988 to 1997.

International differences in infant mortality rate (IMR) must be interpreted with caution, as there are significant international variations in clinical practices and the methods used to register live births. Nevertheless, socio-economic, cultural and perhaps geographic factors influence infant mortality. Thus, IMR is often regarded as an indicator of a community's overall quality of life. In 1996, IMRs were lowest in Japan (3.8 per 1,000 births) and Scandinavia (4.0 per 1,000 births); moderate in the United States (7.3 per 1,000 births) and highest in developing countries (30-150/1,000 births). The IMR rate in Ireland compared favourably at 5.5 per 1,000 births.

Fig 5.2 Infant Mortality Rate, SHB & Ireland, 1988-1997

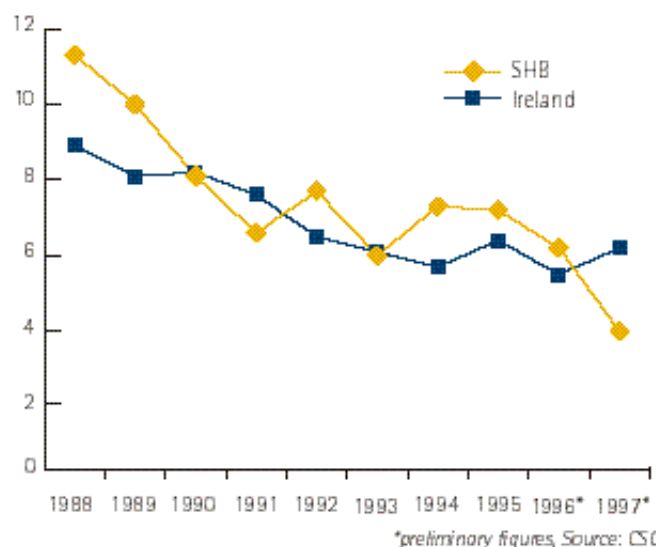


Fig 5.3 Infant Mortality Rate, SHB, 1988-1997

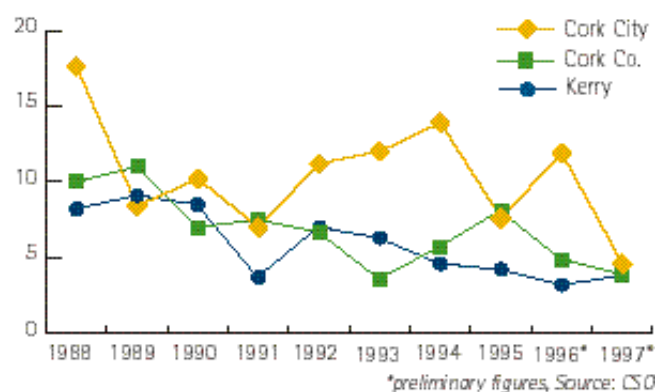


Figure 5.3 shows the infant mortality rate in the three Southern Health Board areas over the ten year period 1988-97. It is apparent that the Cork City area tends to have a higher rate than the other two areas.

The term Low Birth Weight (LBW) refers to infants who weigh less than 2,500 grams. It is a major determinant of infant death. Low birth weight infants are 40 times more likely to die during the first month of life than normal birth weight infants. They are also three times more likely to experience serious health and developmental problems throughout their childhood. Cork City has had a consistently higher percentage of low birth weight babies compared to County Cork and Kerry over the last ten years (Table 5.2).

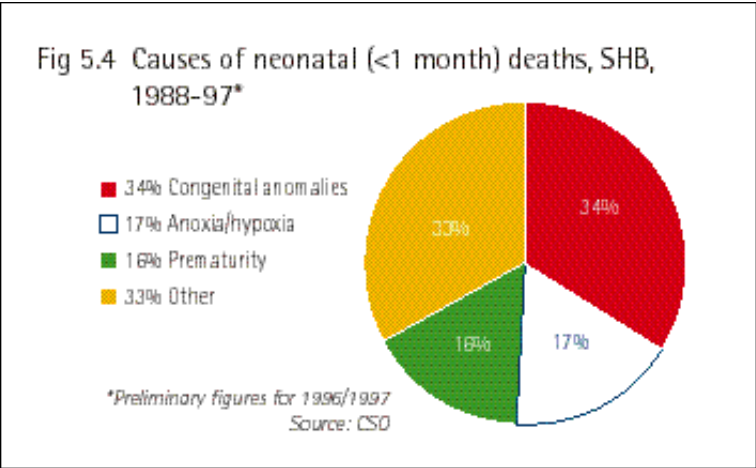
Table 5.2 Live births <2,500g as percentage of total live births, 1988-1997

	1988	1993	1997*	Mean percentage (1988 - 1997)
SHB (%)	4	3.9	4.3	4.2
Cork City (%)	6.1	4.5	5.1	5.3
Cork County (%)	3.4	3.6	3.7	3.8
Kerry (%)	3.3	4	5.2	4
Ireland (%)	4.2	4.1	4.8	4.3

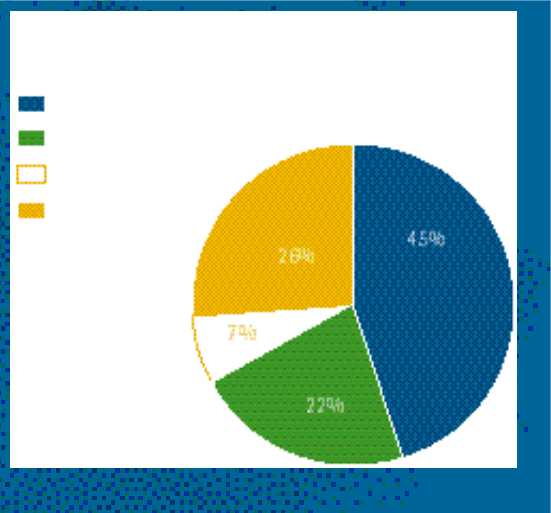
*preliminary figures. Source:CSO

When considering why babies die, it is useful to consider deaths in the first month (neonatal mortality) and deaths in babies between one month and one year (postneonatal mortality). Different factors influence death rates in these two age groups.

The main causes of death in infants under one month of age are congenital anomalies, i.e. birth defects, followed by hypoxia (a deficiency of oxygen reaching the tissues) and prematurity, see Fig 5.4.



After the first month of life the commonest cause of infant death is Sudden Infant Death Syndrome (SIDS), commonly called cot death. SIDS accounts for almost half of all deaths in this age group, (Fig 5.5). The number of deaths due to SIDS has decreased over the ten year period. However, it is a cause for concern that the provisional figures for 1997 indicate an increase in deaths from SIDS. In the Southern Health Board area, the SIDS mortality rate (number of deaths from SIDS per 1,000 live births) increased from 0.4 per 1,000 in 1996 to 1.6 per 1,000 in 1997. This increase was also recorded nationally with a rate of 0.8 in 1996 and 1.4 in 1997.

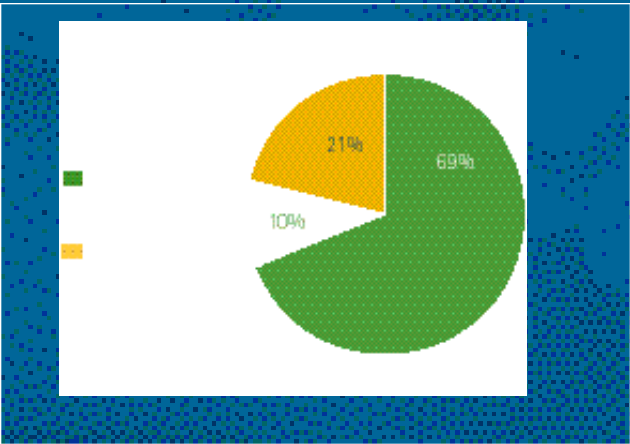


MORTALITY BEYOND INFANCY

It is important to be mindful of mortality and its causes in the child beyond the first year of life (i.e. 1-14 years inclusive). Although more deaths occur in infancy than in the subsequent thirteen years combined, mortality beyond infancy is of critical significance - most especially in relation to the potential for prevention.

MORTALITY TRENDS -THE CURRENT SITUATION

Of the 470 childhood deaths in 1997 in Ireland, just under one-third (146) occurred among children aged 1-14 years (Fig 5.6)



There were 32 deaths among children 1-14 years in the Cork/Kerry region in 1997 (Table 5.3).

Table 5.3 Deaths in Children 1-14 yrs SHB/Ireland 1997

	SHB	Ireland
1-4 years	15	49
5-14 years	17	97
Total	32	146

Source:CSOVital Statistics: Fourth Quarter and Yearly Summary, 1997

THE COMMON CAUSES

Beyond the infant stage, where congenital anomalies, perinatal causes and sudden infant death syndrome are the most common causes of death, 'injury & poisoning' becomes an increasingly significant cause of death among older children. The term 'injury' rather than 'accidents' is much used now as it is increasingly recognised that many accidents are in fact predictable and preventable and the term 'injury' emphasises the potential that exists for injury risk reduction. In 1997, 'injury & poisoning' was responsible for 25% of deaths among Irish 1-4 year olds (Table 5.4) and a whopping 44% of deaths among 5-14 year olds (Table 5.5). Three 1-14 year olds from the Cork/Kerry region died from injury/poisoning in 1997 out of a total of 32 deaths there in that year.

Table 5.4 Principal Causes of Death in Children 1-4 yrs Ireland 1997

Cause of Death	Number	% of all deaths 1-4 years
Injury & Poisoning	12	25%
Malignant Neoplasms	8	16%
Congenital Anomalies	6	12%
Other Causes	23	47%
Total	49	100%

Source:CSOVital Statistics: Fourth Quarter and Yearly Summary, 1997

Table 5.5 Principal Causes of Death in Children 5-14 yrs Ireland 1997

Cause of Death	Number	% of all deaths 5-14 years
Injury & Poisoning	43	44%
Malignant Neoplasms	12	12%
Congenital Anomalies	6	6%
Other Causes	36	37%
Total	97	100%

Source:CSOVital Statistics: Fourth Quarter and Yearly Summary, 1997

ACCIDENTAL DEATH: A PERSISTING SHADOW

Overall, accidents are by far the most frequent cause of death in children between their first and fifteenth birthdays. They are a major public health problem, being responsible for about 40% of all childhood deaths and for 20% of all childhood hospital admissions in this country. Accidents also lead to a sizeable toll of disability.

Accidental death is more common among boys than girls. The main causes of death nationally from accidents are illustrated, deaths from road traffic accidents being the outstanding feature (Table 5.6).

Table 5.6 Deaths from accidents, poisonings and violence

	1-4 years	5-14 years	Total
Road Vehicle Accidents	6	27	33
Accidental Poisonings	1	1	2
Accidental Falls	2	1	3
Fire, Explosions, Burns	4	1	5
Accidental Drowning	-	7	7
Suicide and Self-Inflicted Injury	-	6	6
Other	2	5	7
Total	15	48	63

Source: Report on Vital Statistics, 1995, CSO

Of the 449 people killed on Irish roads in 1996, twenty-four were children under 15 years (National Roads Authority, 1996). The majority of these children were either pedestrians or car passengers (Table 5.7).

Table 5.7 Road Traffic Accidents Children 0-14yrs

	Pedestrians	Pedal Cyclists	Motor Cyclists	Car Passengers	Total
0-5 years	1	2	0	3	6
6-9 years	3	1	0	3	7
10-14 years	6	1	1	3	11
Total	10	4	1	9	24

Source: Road Accident Facts Ireland, 1996, National Roads Authority

PREVENTION: A POSSIBILITY?

Much injury is preventable and controllable. Sweden has been the most successful country in the world in preventing childhood injury. A three-pronged approach to injury prevention was developed:

- * Support of injury surveillance systems and injury prevention research
- * Ensuring safer environments and products through legislation and regulation
- * A broad based safety education campaign using coalitions of existing groups.

In an Irish study published in 1995 to identify the main causes of injuries requiring hospital admission, it was noted that most serious unintentional injury to children under 5 years happened at home. This was mainly due to falls (40%), with head injuries and poisoning being the main reasons for hospital admission.

Like the 0-4 year age group, falls accounted for the largest proportion of injuries in the 5-14 year olds. *This older age group, however, were at greater risk on the road than their younger counterparts.*

Effective prevention strategies rest on the tripod of education, environmental change and legislation. Educational measures alone are ineffective.

While young children are a priority for prevention at home, a strategy for preventing accidents in older children and young adults must be directed towards road safety. As pedestrians, pedal cyclists and car occupants, this latter age group are at particular risk. Preventive actions that have been shown to be successful include increased bicycle helmet use, greater use of seat-belts and child vehicle restraints, control of speeding and random breath testing. Public awareness campaigns are ongoing, highlighting these issues.

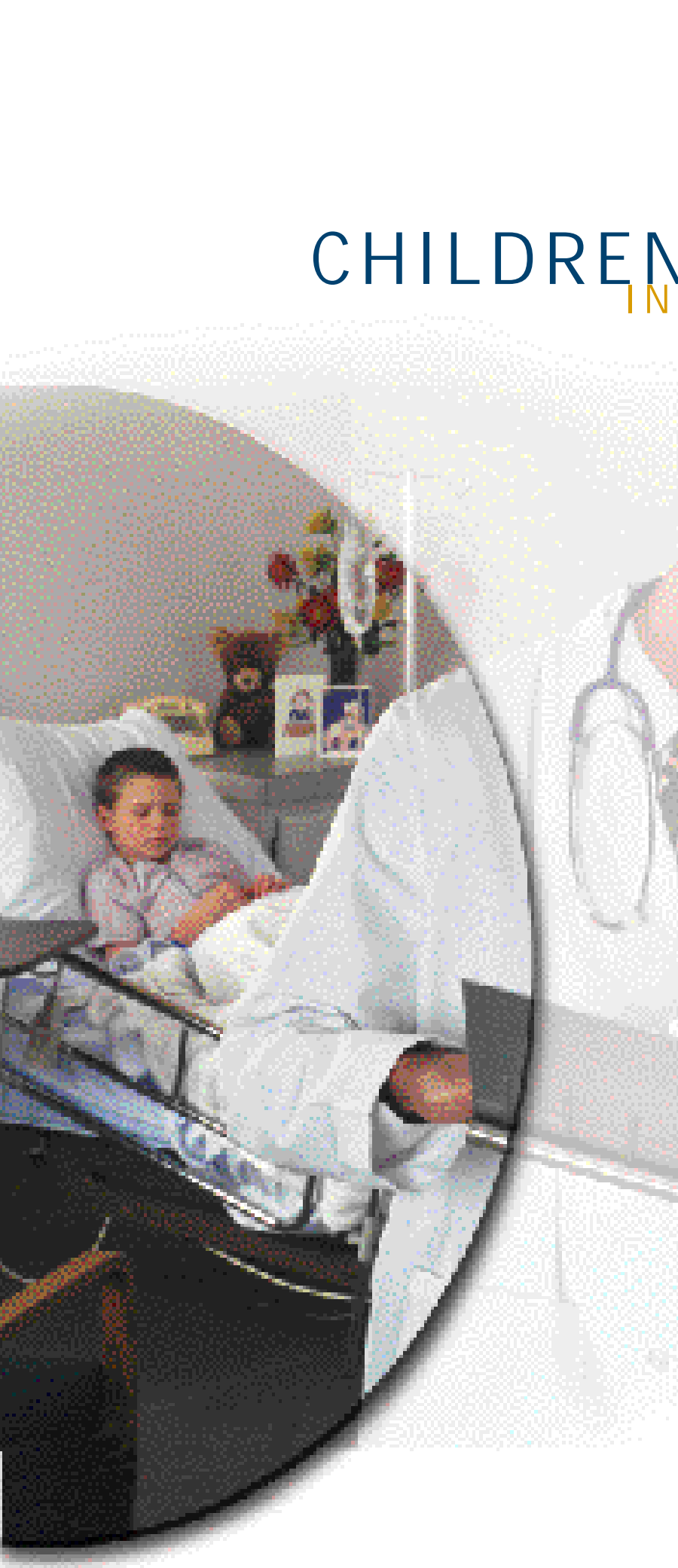
CONCLUSION

In Ireland, accidents remain the commonest single cause of death in childhood between the ages of one and fifteen years. In 1997, they were nearly three times as common as the next most common cause, cancer. Road traffic accidents are the main culprit.

Recent years have seen accidents assuming relatively greater importance as a cause of childhood death because of the decline of other competing causes such as serious infection. Non-fatal accidents are also important as a cause of both immediate morbidity and of later disability. There can be no doubt that childhood accidents constitute a major health problem and that their prevention remains a major public health issue.

CHILDREN IN OUR HOSPITALS

Many minor episodes of illness resolve spontaneously with time and rest. Medical attention is not always sought for mild symptoms. When medical review is necessary the first port of call is to the family general practitioner (GP). Over 90% of illness that presents to the GP is dealt with at the time. However, there is very little national or regional data on these episodes of illness.



Further investigation of symptoms is needed in some instances with referral to casualty or to the hospital outpatient department. Perhaps a half of those referred by the GP for further investigation or treatment will be admitted to hospital. It is clear that hospitals deal with a smaller proportion of childhood ill health, at the severe end of the range of illness. Hospital admission can be a very stressful experience for both the child and parents and so warrants attention.

ADMISSIONS

Worldwide, there has been a steady rise in the number of acute admissions to hospital. A similar trend is apparent in children's admissions. There is a seasonal trend to these admissions with a peak in January-February. In Cork University Hospital, more boys than girls are hospitalised and children under 1 year old account for nearly one fifth of childhood admissions. Children are admitted to hospital most commonly for respiratory illnesses such as bronchitis and asthma (Fig 6.1). Gastroenteritis and other infectious diseases also play a major role.

Avoiding an overnight stay is particularly important as sleeping in a strange environment is stressful for many children. Day case work accounts for 16.5% of in-patient paediatric care (Fig 6.2). Giving blood transfusions and undertaking minor surgery are most commonly carried out as a day case.

Fig 6.1 Main Diagnostic Categories for Paediatric Admissions

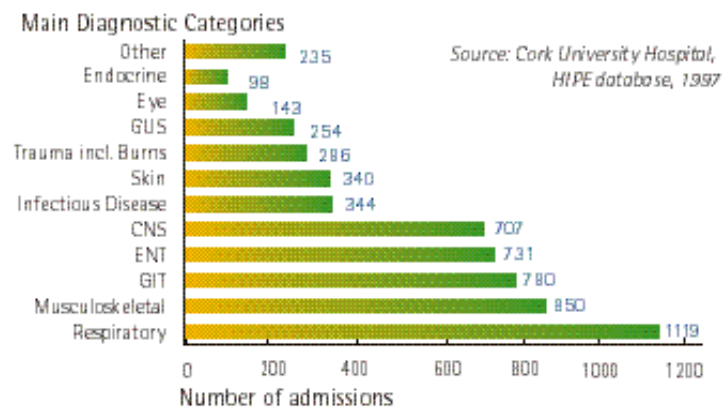
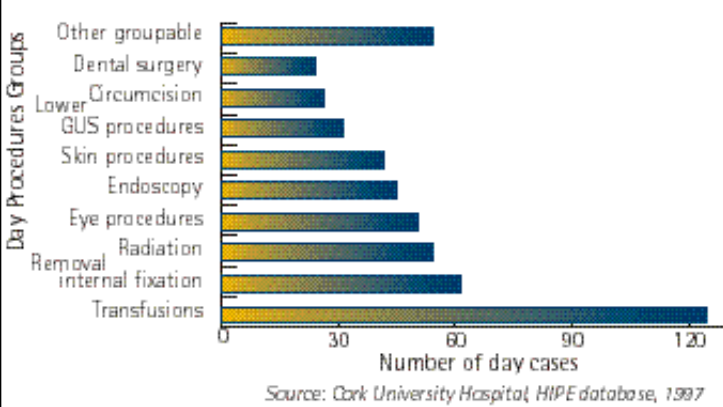
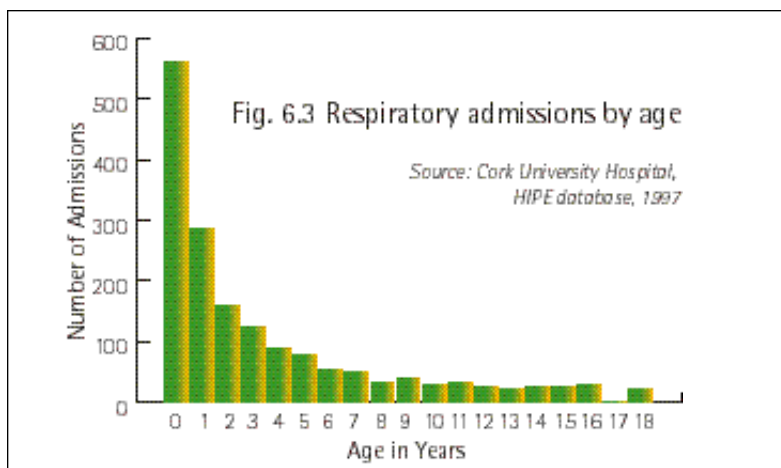


Fig 6.2 Main day procedure groups

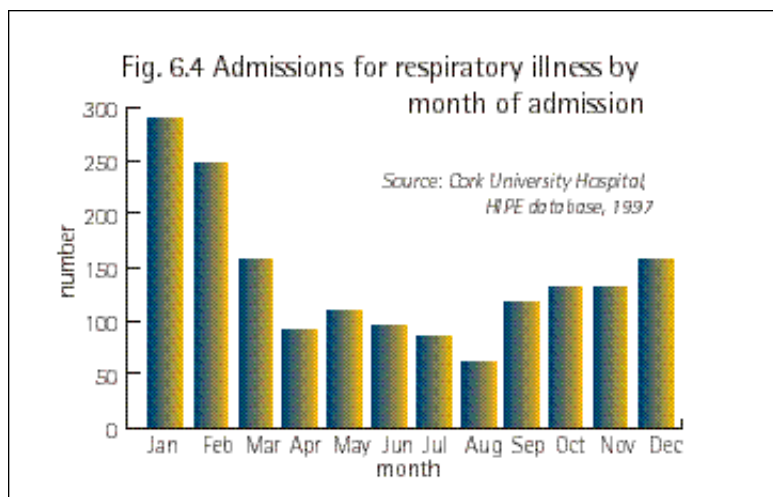


RESPIRATORY ILLNESS

Infants and pre-school children are most commonly admitted for respiratory illness (Fig 6.3).



These children usually suffer from upper respiratory tract infections. Older children, if admitted, will usually be suffering from bronchitis or asthma. There is a seasonal variation in admissions for respiratory illness with fewer admissions during the months of April - August (Fig 6.4).



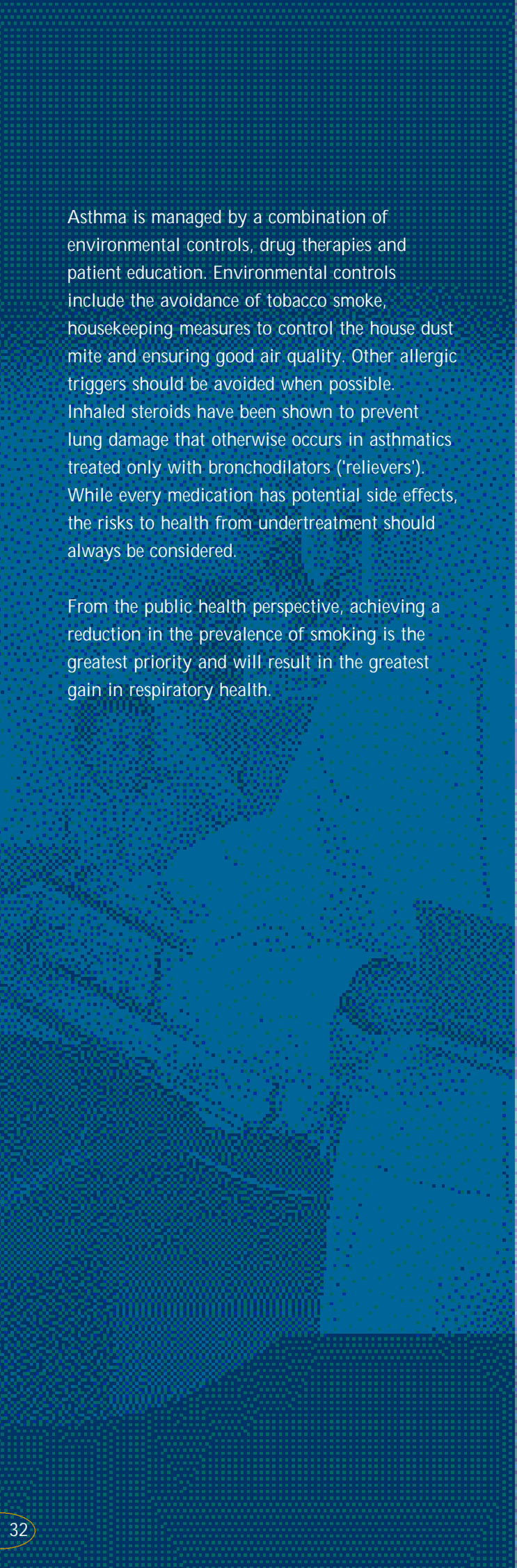
ASTHMA

Asthma is a common childhood condition and is increasing worldwide, particularly in Western countries. The cause for this increase is not clear. In one Irish study in 1995, 15% of 13-14 year olds were found to be asthmatic. A large international study placed Ireland near the top of the asthma league table, with similar rates to the UK, Australia and New Zealand.

Whether or not an individual will develop asthma depends on a number of factors. Some people are born with a tendency for asthma, genetic susceptibility. In addition to being prone to the condition the individual must be exposed to an irritant in their environment in order to develop symptoms of asthma. The domestic house dust mite, a microscopic insect that is found in common dust, is the most common and important trigger for asthma in susceptible individuals. Other causes of asthma include animal, cockroach and fungus allergens, and allergens such as pollens from trees, grasses and weeds. The commoner allergens seem to be associated with western lifestyle.

Smoking on its own may cause asthma.

In someone who has asthma, being exposed to polluted air can make the condition worse. Likewise respiratory viral infection is closely associated to the development of asthma in childhood. On its own, neither air pollution nor viral infections cause asthma. Rather, asthmatics have more symptoms at times of greater air pollution and viral infection.



Asthma is managed by a combination of environmental controls, drug therapies and patient education. Environmental controls include the avoidance of tobacco smoke, housekeeping measures to control the house dust mite and ensuring good air quality. Other allergic triggers should be avoided when possible. Inhaled steroids have been shown to prevent lung damage that otherwise occurs in asthmatics treated only with bronchodilators ('relievers'). While every medication has potential side effects, the risks to health from undertreatment should always be considered.

From the public health perspective, achieving a reduction in the prevalence of smoking is the greatest priority and will result in the greatest gain in respiratory health.

TRAUMA

Admissions for trauma peak in July and August, during the school holidays. The number of admissions due to trauma increase with increasing age in children. Boys significantly outnumber girls. Nearly half of all trauma admissions are due to upper limb injuries. Over a quarter have a head injury and about 5% each are due to burns, poisoning and facial injuries. Spinal and eye injuries are uncommon.

OTHER ADMISSIONS

Some other public health challenges are highlighted by looking at other reasons why children end up in hospital. Five children, 4 male (14 years) and 1 female (12½) were admitted for treatment of toxic effects of alcohol. Children of all ages were admitted for the treatment of poisoning or the toxic effect of drugs, accounting for 124 admissions to the CUH in 1997. With the noted national increase in suicide, it is a worry to note that 26 children aged 15-17 (5 boys and 21 girls) were admitted following drug overdose.

chapter seven

VACCINES PREVENT ...

A widescale immunisation programme is in place to prevent the infectious diseases of childhood (such as whooping cough, measles, rubella, poliomyelitis) which can still have serious consequences.

The number of pertussis (whooping cough) cases (Fig 7.1) decreased in 1998, with 24 notifications compared to 64 in 1997. The age range was one month to 18 years, but the majority of cases (56%) were in children under five years and over one third were infants under one year. Almost two thirds (62%) had not been immunised or had incomplete immunisation against pertussis. Those with incomplete immunisation were mostly infants who developed pertussis prior to completion of their primary immunisations.

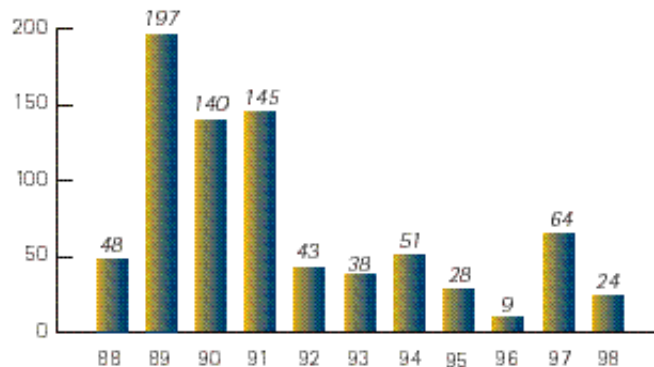
There was a dramatic decrease in Mumps notifications in 1998 (Fig 7.2), with only 6 notifications received. This would indicate that the outbreak, which commenced in 1996 and continued in 1997, has abated.

There were 25 notifications of measles in the Southern Health Board area in 1998 (Fig 7.3), an increase from nine in 1997. Almost two-thirds of the cases were aged under five years. Of the 19 cases whose immunisation status was known, 12 had not been immunised. A number of the parents were recorded as having refused immunisation.

There were only 5 notifications of rubella in the Southern Health Board in 1998 (Fig 7.4). The immunisation status was recorded in 3 cases, none of whom had been vaccinated.

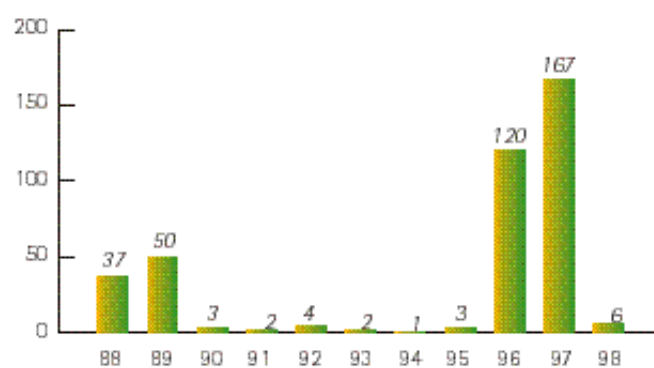
There were no cases of Haemophilus Influenza type b (Hib) infections in children in the Southern Health Board area in 1998 (Fig 7.5).

Fig 7.1 Whooping Cough Notifications, SHB, 1988-98



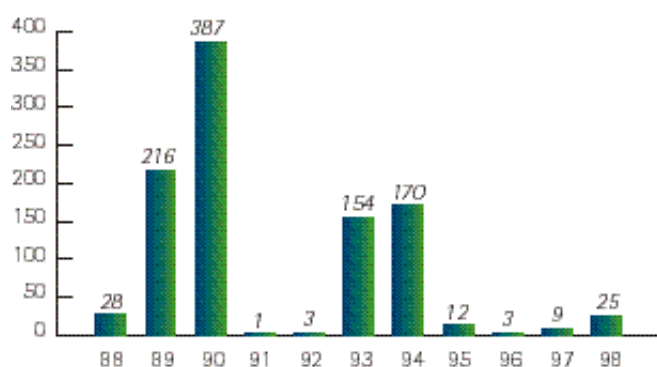
Source: Department of Public Health, 1999

Fig 7.2 Mumps Notifications, SHB 1988-98



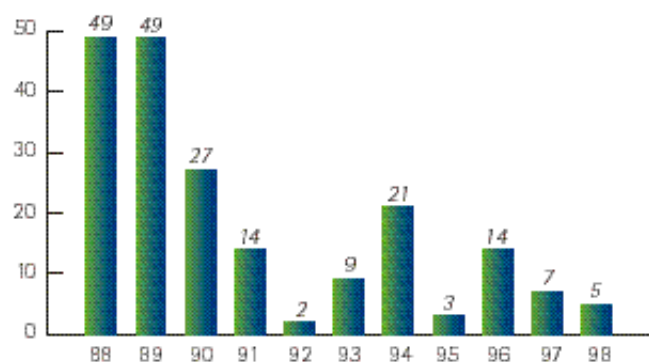
Source: Department of Public Health, 1999

Fig 7.3 Measles Notifications, SHB 1988-98

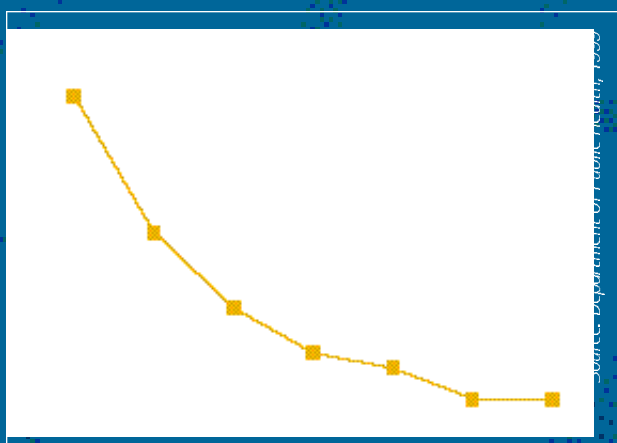


Source: Department of Public Health, 1999

Fig 7.4 Rubella Notifications, SHB 1988-98



Source: Department of Public Health, 1999



Source: Department of Public Health, 1999

IMMUNISATION UPTAKE

Monitoring of the uptake levels in the Southern Health Board area indicates that 87% (Table 7.1) of children are immunised against Polio, Hib and Diphtheria/Pertussis/Tetanus (DPT) or Diphtheria/Tetanus (DT) by their second birthday. This is considerably less than the national target of 95% uptake.

The uptake of Measles, Mumps and Rubella (MMR) vaccine is lower still at 75% by age two years. MMR vaccine is recommended for children at 15 months of age.

Table 7.1 Uptake Levels of Primary Vaccinations in the SHB, cohort: children born from the 1/1/1997 to 31/3/1997

	DT (%)	DPT (%)	Polio (%)	Hib (%)	MMR
Uptake @ 12 mths	3	79	82	82	N/A
Uptake @ 24 Mths	4	83	87	87	75

Source: Childhood Immunisation Database, 1999

It is a concern that recent adverse publicity regarding the alleged link between Measles, Mumps and Rubella (MMR) vaccine and inflammatory bowel disease and autism has caused undue anxiety and confusion among parents and a decrease in the uptake of the vaccine. If children are denied immunisation, they are at risk of contracting these potentially serious vaccine preventable infections. Measles can be complicated by convulsions, pneumonia and encephalitis (inflammation of the brain). Mumps can cause encephalitis and deafness. If a woman gets rubella early in her pregnancy, the unborn baby may be affected and be born with deafness, vision defects or brain damage. It is important to remember that children are much more likely to be harmed by these infections than by the vaccines given to prevent infection.

The Department of Health and Children has clearly stated that there is no evidence to support any link between MMR vaccine and the subsequent development either of chronic inflammatory bowel disease or of autism. The MMR is a highly effective vaccine and parents are strongly advised to continue to have their children immunised at 15 months.

INFLUENZA IN IRELAND 1998/99

Influenza is a seasonal infection, tending to occur between October and March. This season, cases of influenza began to occur in early January and continued over the following months. Cases occurred in all areas of the country, including Cork and Kerry, and in all age groups. Both influenza A and B strains were identified, all of which were covered by the vaccine available for the season.

Annual immunisation of people at risk reduces influenza-related deaths and illness. For the winter of 1998/99, the Irish recommendations for vaccine were extended to include all people over 65 years. A major influenza campaign took place in October to raise awareness of the need for immunisation. Evaluation of that campaign has shown that approximately 50% of people over 65 years had influenza vaccine over the winter. Undoubtedly, the increase in vaccine use in the over 65 age group helped to prevent illness and hospitalisation for influenza during the winter season.

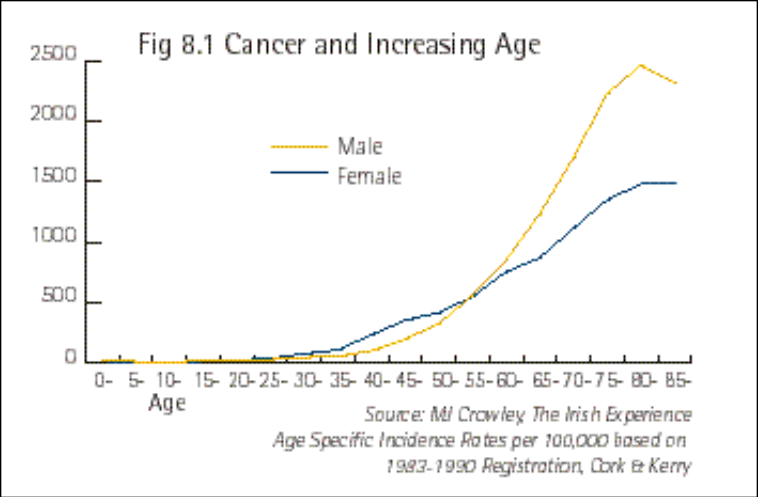
chapter eight

CHILDHOOD CANCER

Children's cancers are rare. Each year in Ireland about one hundred new cases of cancer are diagnosed among children under 15 years. One-fifth of these occur in the Cork/Kerry region.



Compared with adult cancer, the incidence of the disease in children is very low (Fig 8.1).



Despite its rare occurrence, childhood cancer receives an understandably high profile due to the emotional and psychological consequences wrought on young patients and their families.

THE SIZE OF THE PROBLEM

New Cases: The most recent Irish cancer incidence data available from the National Cancer Registry relates to the 1996 period. One hundred and four new cases of childhood cancer were registered in Ireland in that year (Table 8.1). Over 40% of all new cases nationally in 1996 occurred in children aged 4 years and under.

Table 8.1. Childhood Cancer Cases /Age Profile - Cork & Kerry 1996

	0-4 yrs	5-9 yrs	10-14 yrs	Total
Cork	9	1	7	17
Kerry	3	1	1	5
SHB	12	2	8	22
Ireland	45 (43%)	24 (23%)	35 (34%)	104

Source: National Cancer Registry, 1999

Childhood cancer is most common in the 0-4 year age group. The age-specific incidence rates are highest in that group for both boys and girls (Table 8.2).

Table 8.2 Age Specific Incidence rates (per million) - Ireland 1996

	Males	Females
0-4 years	186.4	172.6
5-9 years	61.9	109.0
10-14 years	131.4	81.9
Total (0-14 years)	124.6	117.2

Source: National Cancer Registry, 1999

In general, boys have higher rates than girls. Of the 22 newly diagnosed cases in the Southern Health Board area in 1996, 15 were boys.

Deaths: Cancer is currently responsible for over twenty childhood deaths each year in Ireland. In 1996, there were 26 childhood deaths from cancer nationally; seven of these occurred in Cork and Kerry (Table 8.3).

Table 8.3 Childhood Cancer Deaths /Age Profile - SHB/Ireland 1996

	0-4 yrs	5-9 yrs	10-14 yrs	Total
SHB	2	2	3	7
Ireland	10	9	7	26

Source: National Cancer Registry, 1999

WHICH CANCERS?

Children's cancers contrast quite markedly with cancers affecting adults. They tend to occur in different parts of the body and respond differently to treatment. Modern treatment regimes have resulted in a high survival rate and the prognosis for childhood cancer is now very good. Cure rates for children are much higher than for most adult cancers, and over 60% of all children can now be completely cured.

While cancers of the skin, bowel, breast, lung and prostate are the most frequently occurring cancers in adults in this country, childhood cancers take on an entirely different spectrum. Leukaemia and brain tumours account for approximately half of all childhood cancers. Details of the sites of childhood cancers in Cork and Kerry for 1996 are presented (Table 8.4, overleaf).

Table 8.4 Childhood Cancer Cases / Primary Site Profile -
Cork & Kerry 1996

Site	No
Haematopoietic & Reticuloendothelial	6
Brain	5
Bones, Joints of Limbs	4
Lymph Nodes	2
Colon	1
Skin	1
Eye	1
Nasopharynx	1
Endocrine	1
All Cancers	22

Source: National Cancer Registry, 1999

THE COMMON CANCERS

Leukaemia: Leukaemias are the most common cancer in children, making up about one third of all childhood cancers. There is a peak in incidence between 2 and 5 years of age. The vast majority of children with Leukaemia will have Acute Lymphoblastic Leukaemia (A.L.L.), which has a very good prognosis. A small minority will have Acute Myeloid Leukaemia (A.M.L.), the treatment for which is much more intensive. Survival rates for acute leukaemia in children have improved markedly over recent years so that now about 60% survive over five years.

Brain Tumours: Approximately 20% of childhood cancers present as brain tumours. In Ireland in 1996, twenty children developed brain tumours (thirty-three in 1995). Treatment consists of surgery often followed by radiotherapy and / or chemotherapy. Cure rates vary depending on the site and type of the tumour. With many types of tumour about 50% of children are cured, while some have a cure rate as high as 80%.

IS PREVENTION POSSIBLE?

It is widely believed that as many as four-fifths of all adult cancers are preventable. Our National Cancer Strategy has set targets to reduce the risks of developing cancer in adults. Regrettably, most childhood cancers have no known specific cause and are not known to be preventable.

Possible causes of childhood leukaemia have been the subject of much international research in recent years and remain controversial. Among the most thoroughly investigated include:

- * a rare reaction to a common infectious agent/s
- * exposure to radiation, before or after birth
- * exposure to chemicals, before or after birth
- * exposure to electromagnetic fields from power-lines
- * genetic factors

In Ireland, a considerable amount of public concern has been expressed over the effect of electromagnetic fields (such as power lines and pylons) and the relationship with childhood cancers. To date the bulk of the evidence suggests either no effect or an insignificant one. International research continues in an attempt to categorically specify the relationship, if any.

THE FUTURE

Many of the more common adult cancers are preventable. They have associated risk factors which are amenable to health promotion activities and behaviour change. Examples include lung cancer and smoking; bowel cancer and diet.

The same is not true of childhood cancers. Until more is known about the causes of childhood cancers, no effective prevention programme can be implemented.

It should, however, be remembered that childhood cancer is relatively rare and that the prospects for many of those children who do develop cancer have improved dramatically with advances in therapy.

A composite image featuring a child's hand in a green sleeve reaching towards a wheelchair wheel. The background is split: the left side is a light, textured grey, and the right side is a dark blue with a fine grid pattern.

chapter nine

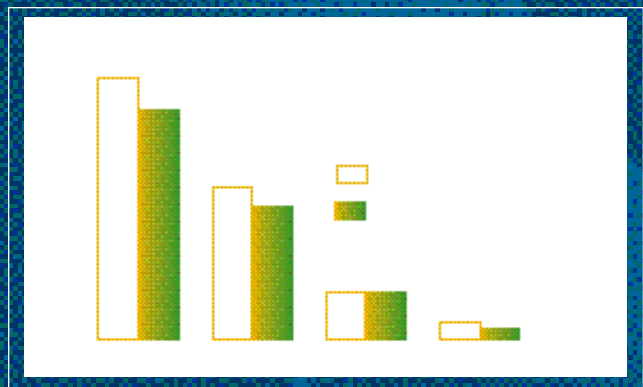
DISABILITY

Many diseases have long term impacts. In some, the result is disability, which can result in a child experiencing loss or limitation of physical function, intellectual disability, reduced opportunities socially, negative attitudes and prejudice. Aside from disease, disability can arise through other causes such as birth defects and accidents.

Disability is broadly categorised into two main groups: *Intellectual disability* arising from varied levels of intellectual impairment and *Physical and Sensory Disability*. Many children suffer from a combination of both.

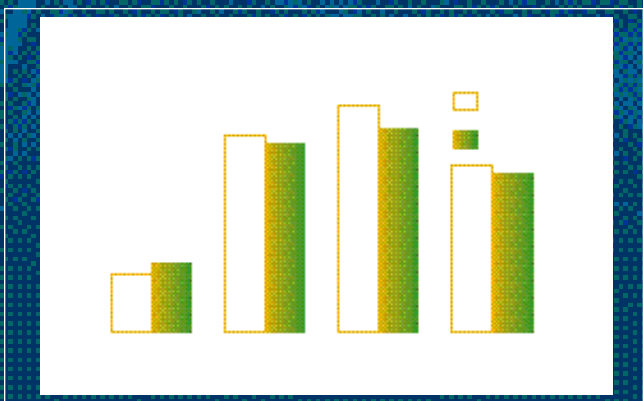
INTELLECTUAL DISABILITY

A national Intellectual Disability Register was established in 1995 for all those receiving services for intellectual impairment. In the Southern Health Board region in 1996, there were 1,003 children under 15 years with intellectual impairment (Fig 9.1), excluding borderline and undetermined grades. Mild impairment is the commonest (41%), Moderate impairment is next most common (32%). Severe and Profound grades were much less prevalent, at 15% and 7% respectively.



MODERATE TO PROFOUND GRADES OF INTELLECTUAL IMPAIRMENT

Children in these categories of intellectual impairment will never be able to live independently. They are therefore a great cause for concern for their parents and will always be dependent on them and the health services for their day-to-day care. In the 0-18 year old group, 15% of those with moderate or worse handicap were in residential care, compared with only 3% of those in the mild range. As shown in Fig 9.1, those in the more severe end of the range of intellectual disability are in the minority of the intellectually disabled group. Fig. 9.2 shows that the prevalence of severe intellectual disability seems to be lower both regionally and nationally in the younger age groups.

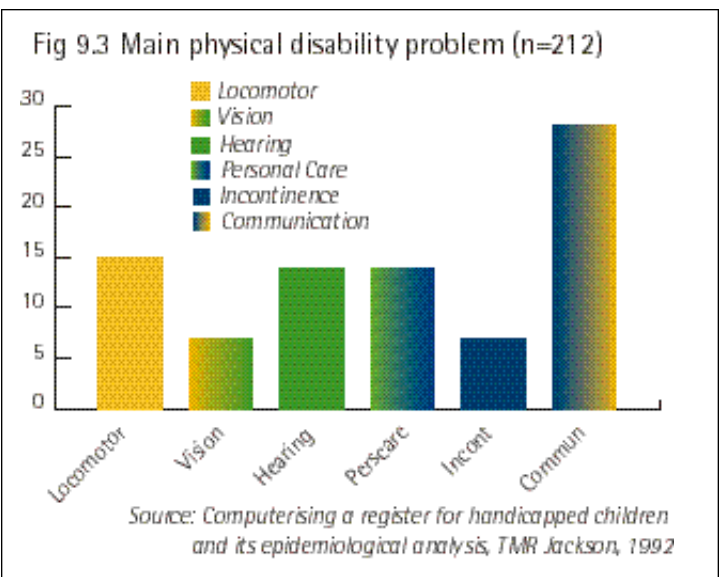


PHYSICAL AND SENSORY DISABILITY

Physical and sensory disability encompasses a much wider range of problems. It is more difficult to classify as people can vary greatly in the impact which the disease process has on them. International studies suggest that nearly 3% of children under 16 years have some disability and that the vast majority of these are living at home.

There is no nationally available data on disability. One study in Kerry reviewed children whose parents received the Domiciliary Care Allowance, an allowance that is paid to parents whose children have a disability that requires care significantly in excess of that required by the average child of the same age. This study does give a picture of such children living in the community. Children in residential care (thought to be about 2% of the total) were excluded from this.

Looking at some of the results of this study, communication problems were the most common (Fig 9.3). 15% had some difficulty with movement, 7% vision, 14% hearing, 14% personal care and 7% incontinence problems.



Many children will have more than one disability.

Measurement of disability is complex, and this report illustrates the issues involved and shows some estimates of the burden of intellectual and physical disability in the community. Ultimately, services must be planned in a more precise way to match functional loss.

chapter ten

HEALTHY MINDS



Until now, health services, nationally and internationally, have given precedence to promoting physical wellbeing. This is changing slowly as a large body of research is emerging that is beginning to suggest that initiatives which aim to promote physical wellbeing to the exclusion of mental and social wellbeing may be doomed to failure.

Psychological problems in children may be defined as abnormalities of emotion, behaviour or social relationships sufficiently marked or prolonged to cause suffering or risk to optimal development in the child or distress or disturbance in the family or community.

Psychological disturbance in children can become manifest as a disturbance in physical symptoms (headache, abdominal pain in the school-refusing child), in feelings (depression, anxiety), in behaviour (inappropriate babyish behaviour, clinging, aggression or hyperactivity) or in performance (learning difficulties). Unresolved psychological distress in childhood has been shown to increase the risk of psychological distress in adulthood.

The risk of psychological disturbance is increased if a child is exposed to physical stresses such as birth defects, physical injury, inconsistent and contradictory parenting, marital conflict, child abuse and neglect, overindulgence, chronic illness. Most disturbance is multifactorial and its expression depends on many variables, including temperament, developmental level, nature and duration of the stress, past experiences and the coping and adaptive abilities of the family.

Parents are frequently concerned whether the particular behaviours of their children are 'normal' or whether they represent problems that require intervention. Some behaviours, though difficult to deal with, may be part of normal development (e.g. toddler temper tantrums). Depending on the age of the child, and the frequency and intensity of symptoms, a behaviour may be judged to be a developmental variation or evidence of a more serious problem. The decision of the parents to seek help is influenced by the characteristics of their children's behaviour, the amount of distress it is causing children, parents and teachers and the parents' own ideas of 'normal' behaviour.

Adults' perception of children's behaviour is one of the variables that needs to be considered when assessing the psychological health status of our children. We can estimate expected figures by applying the population prevalence of certain diseases based on international studies to the population of Cork and Kerry (Table 10.1).

Table 10.1 Estimated *population prevalence of psychological problems in Cork and Kerry.*

Condition	Total	Cork City & S. Cork		N. Cork	W.Cork	Kerry
		N Lee	S Lee			
Population	546,000	144,000	157,000	71,000	48,000	126,000
0-16 (<16) years	138,000	37,000	39,000	18,000	12,000	32,000
16-18 years	21,000	6,000	5,000	3,000	2,000	5,000
Overall prevalence of psychological problems 20%	28,000	7,400	7,800	3,600	2,400	6,400
Moderate/severe problems 10%	14,000	3,700	3,900	1,800	1,200	3,200
Disabling problems 2%	2,800	740	780	360	240	640
Reading Retardation 10%	14,000	3,700	3,900	1,800	1,200	3,200
Recurrent Abdominal Pains 10%	13,800	3,700	3,900	1,800	1,200	3,200
Emotional / Anxiety 5%	6,900	1,850	1,950	900	600	1,600
Conduct Disorder - serious 3%	4,100	1,110	1,170	540	360	960
Mental Handicap IQ 50-70 2.5%	3,500	925	975	450	300	800
Hyperkinetic Disorder 2%	3,000	740	780	360	240	640
Mood Disorders 1%	1,400	370	390	180	120	320
Physical & Psychiatric Illness 1%	1,400	370	390	180	120	320
Anxiety States (16-18) 5%	1,000	300	250	150	100	250
Mood Disorders (16-18) 3%	630	180	150	90	60	150
Mental Handicap - IQ <50 0.3%	400	111	117	54	36	96
Autism/Mental Handicap 20:10,000	276	74	78	36	24	64
Obsessional Disorder (16-18) 1%	210	60	50	30	20	50
Eating Disorders (Girls 16-18) 1%	102	29	27	14	9	23
Parasuicide (16-18), 400:100,000	84	24	20	12	8	20
Autism, 4:10,000	55	15	16	7	5	13
Schizophrenia (16-18), 3:10,000	6	2	1	1	1	1
Suicide (16-18), 3:100,000	1	-	-	-	-	-

While these norms and estimates may assist the planning of services, their appropriateness for adaptation to different societal and cultural circumstances needs exploration.

It is estimated that about a quarter of all children with psychological problems will need specialist mental health input. In one clinic in Cork, 993 children were referred in the four-year period ('95 -'98) since the clinic opened.

Twice as many boys were referred as girls (Fig 10.1). Almost half of the referrals were aged between 6 and 12 years old (Fig 10.2).

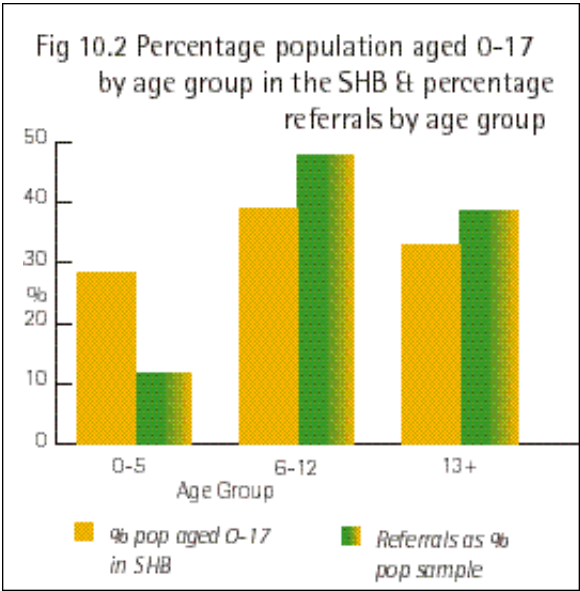
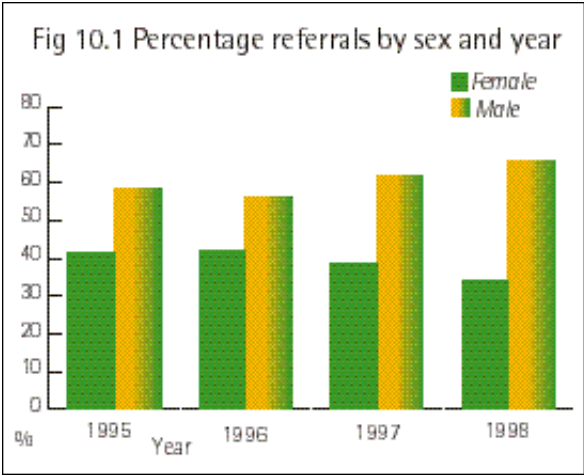


Fig 10.2 compares the age profile of those children referred to the clinic with the age profile of the general child population in the Southern Health Board. It is clear that young children (<5 years) are considerably less likely to be referred than older children. One reason may be the difficulty in distinguishing behaviour that is a normal variant and that which requires intervention.

Children referred to the Cork mental health service are initially coded based on their referral letter. The classification used is a complex one as it considers the myriad of life experiences that are linked to emotional well being. A child may be subject to several influences across five classification categories (Table 10.2).

Table 10.2 Multiaxial Classification in Child Psychiatry

Axis 1	Emotional /Psychiatric Disorders diagnosed within the child
Axis 2	Specific Developmental Problems within the child e.g. Dyslexia, Speech & Language Disorders
Axis 3	Child's overall developmental level i.e. intelligence
Axis 4	Medical Conditions
Axis 5	Child's Psychosocial Environment radiating outwards from family factors, to school, to the wider community

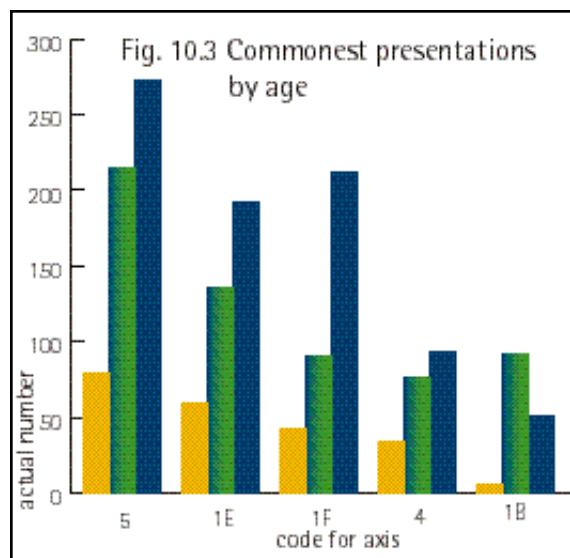
Distortion of the child's psychosocial environment is the commonest presentation within the classification system (Table 10.3). Some examples of such stresses are over or under family involvement, inadequate parenting, poor living conditions or bullying in school. Next commonest presentations are conduct and hyperkinetic disorders, emotional disorders, medical conditions and mood disorders. Psychological problems are more likely to be exhibited as conduct disorders in boys than girls, who are more likely to exhibit emotional disorders.

The commonest condition overall, i.e. boys and girls and all age groups, is psychosocial situation problems, which means that these children are living in an environmental situation such as poor economic conditions or marital conflict, which impacts negatively on their mental health (Table 10.3). Next commonest conditions are conduct and hyperkinetic disorders, "emotional" disorders, medical conditions and mood disorders. Psychological problems are more likely to be exhibited as conduct disorders in boys than girls, who are more likely to exhibit emotional disorders.

Table 10.3 Commonest Presentation within the Classification Systems by Age Group Ranked in Order of Frequency

	Axis	0-5	6-12	13+	age not recorded	Total
Psychological situation problems	5	79	215	273	12	579
Conduct & hyperkinetic disorders	1E	60	135	192	5	392
Emotional Disorders & adult neurotic disorders	1F	43	90	212	9	354
Medical Conditions	4	34	77	93	2	206
Mood Disorders	1B	6	92	51	3	152
Specific Developmental disorders	2	13	23	46	0	82
Intentional Self-harm	1J	0	56	20	1	77
Mental Retardation	3	5	16	17	0	38
Psychoactive substance use disorders & others	1H	0	32	5	0	37
Eating Disorders	1D	0	18	9	1	28
Pervasive developmental disorders	1C	4	0	3	0	7
Organic mental disorders	1I	0	1	5	0	6
Schizophrenia, schizotypal & delusional disorders	1A	0	2	2	0	4
Personality Disorders	1G	0	2	0	0	2
Coding Unspecified	1K	0	0	0	0	0

Fig 10.3 examines the breakdown of psychological problems by age group.



The most common problems are similar for the various age groups - except mood disorders, being more common than conduct and hyperkinetic disorders in the older age group (13-16).

The foregoing local data is supportive of the statement that behavioural and developmental problems in children are among the most pervasive sociological issues today.

This preliminary examination of best data available gives some indication of the problems affecting the mental health of our children. Severe psychiatric disorders are, thankfully, relatively rare. Emotional and behavioural problems of childhood are far more common. The mutual interaction between a child and his/her parent is very important as it can increase or decrease the risk of a disorder occurring. The evidence showing that parenting programmes can both reverse certain emotional and behavioural problems and prevent their emergence is robust. School mental health programmes have also been evaluated and found to impact positively on emotional wellbeing. Through developing empathy and respect, both initiatives improve self-esteem in children and parents and increase their ability to give and receive social and emotional support.

CHILD HEALTH SURVEILLANCE

Child health services were introduced in Ireland and the United Kingdom in the early part of this century, following the scandal that three out of every five recruits for armed service in the Boer War were unfit for service. Screening programmes were developed, where children were examined at regular intervals throughout their childhood. Because of these services and the staff working in them, many children have had problems detected at a stage which has allowed much earlier intervention than would otherwise have been possible.



WHAT IS CHILD HEALTH SURVEILLANCE?

In recent years, the concept of child health surveillance has broadened beyond the idea of routine regular examinations. There is increasing recognition of the central role and abilities of parents in detecting problems with their children's health. More emphasis has been placed on preventative health care and surveillance now comprises five main activities (Box 11.1).

BOX 11.1 PRINCIPAL COMPONENTS OF CHILD HEALTH SURVEILLANCE

- * Monitoring the physical, social and emotional health and development of children
- * Measuring and recording physical growth
- * Monitoring developmental progress, offering intervention when necessary
- * Providing a programme of effective infectious disease prevention
- * Participation in health education and training of parents

Although there is now an increased emphasis on the prevention of physical, emotional and behavioural disorders, the early detection of disorders still plays an important part in child health surveillance.

DOES EARLY DETECTION MATTER?

There are several good reasons why defects should be discovered at the earliest possible stage of the disease rather than when they are obvious. Firstly, parents want to know as early as possible. Even in cases where the disorder is not amenable to treatment, parents find that an early diagnosis, with adequate counselling, helps them to adapt to the problems created by disability. In some disorders, detection and treatment at the presymptomatic stage improves outcome (e.g. hypothyroidism). In others, an early diagnosis allows genetic counselling, which informs parents of the chance of having another child with the same condition (e.g. cystic fibrosis).

Many of the conditions that are picked up are relatively minor in nature, such as minor visual and hearing defects. However, early identification and treatment of these conditions prevents the child from developing secondary disabilities such as impaired language development or difficulties with school work.

BEST HEALTH FOR CHILDREN

A recent review, *Best Health for Children*, has been undertaken of the screening and surveillance services for children in Ireland. The strengths and weaknesses of the current system have been highlighted and recommendations made to modernise the services. A new model has been devised to put children and their parents at the centre of the process (Box 11.2).

BOX 11.2 SHIFTING FROM THE OLD MODEL TO THE NEW

OLD MODEL	NEW MODEL
Bureaucratic	Flexible
Service centred	Child centred
Static	Dynamic
Based on orthodoxy	Based on evidence

Source: *Best Health for Children*, 1998

New evidence about the effectiveness of screening has been reviewed and recommendations made about the optimal content and timing of the core child health surveillance programme. The package of recommendations is condensed into checks at birth, at discharge from hospital, 6 weeks, 3 months, 7-9 months, 18-24 months, 3½ years and school-going children. Guidelines have been set as to the relevant examinations that should be carried out at the particular stages, the topics that should be discussed with parents and their children and the relevant professional that should be carrying out those checks.

SCREENING AT BIRTH

At birth, all babies have a full physical examination, whose aim is to detect congenital defects such as heart problems, dislocated hips, visual and hearing problems etc. Five days after birth, all babies are screened for disorders of their metabolism, by means of a heel prick (Guthrie) test. Initially established to screen for phenylketonuria, this screening programme now also includes galactosaemia, maple syrup urine disease, hypothyroidism and homocystinuria. All of these disorders, if left untreated, result in severe mental handicap. All testing is done in the National Neonatal Screening Laboratory in Temple Street Hospital, Dublin. Between the years 1995-1997, 13 cases of hypothyroidism were detected in Cork and Kerry, 2 cases of phenylketonuria and one case of maple syrup urine disease were identified.

CONGENITAL ANOMALIES

For parents, having their newborn baby diagnosed as having a serious congenital defect is always an extremely traumatic experience. Such defects, although relatively rare, have major repercussions with respect to the child's quality of life. Early detection of defects can be lifesaving, for example with congenital heart defects. The thalidomide disaster of the 1960s has taught us that it is equally important to examine congenital defects on a population basis. Then, a large number of babies were born with severe and unusual malformations due to the drug thalidomide, taken by their mothers in early pregnancy. A delay in recognising that these malformations were linked with thalidomide meant that mothers continued to take the drug and many more children were affected. Since then, a number of countries have established a birth defect surveillance system. These were initially set up to act as an early warning system for possible changes in the rates of birth defects due to drugs or environmental agents. The objectives have now broadened.

BOX 11.3 OBJECTIVES OF THE SHB CONGENITAL ANOMALIES REGISTER

- * To provide baseline epidemiological information on congenital anomalies in the Southern Health Board.
- * To detect/investigate trends in the frequency of congenital anomalies to assess the impact of known or suspected risk factors.
- * To evaluate the effectiveness and efficiency of health services (including prenatal diagnosis).
- * To act as a database for research on the aetiology of conditions.
- * To act as an information centre e.g. for the assessment of impact of environmental accidents or change.
- * To enable the evaluation of reported clusters.

The SHB register is a population-based register, which includes all babies born to mothers living in Cork or Kerry at the time of delivery (approximately 7,000 births per year). Information is collected on anomalies noted at birth (e.g. neural tube defects) and those diagnosed later (e.g. congenital heart disease). Table 11.1 outlines the prevalence at birth of selected congenital anomalies for 1996 -1997.

Table 11.1 Birth prevalence rates (per 10,000 births) of selected anomalies SHB, 1996 -1997

Congenital Anomaly	no cases	prevalence rate
Congenital Heart Defects	82	55.4
Neural Tube Defects	38	25.7
Down's Syndrome	30	20.2
Cleft Lip/Palate	21	9.5
Other Chromosomal Anomalies	14	14.2
Limb Reductions	6	4.0

Source: Congenital Anomaly Register, SHB (Provisional data)

The most commonly occurring congenital malformations in the Southern Health Board region are congenital heart anomalies and neural tube defects. The causes of most specific congenital heart defects are still unknown. However, recent advances in molecular genetics may soon permit identification of specific chromosomal abnormalities associated with many of these defects. For example, 50% of children with Down's Syndrome have an associated heart defect. Two to four percent of cases are associated with environmental or adverse maternal conditions such as diabetes, phenylketonuria, congenital rubella syndrome or drugs such as alcohol, lithium or anticonvulsants. Further analysis of data from the register will help to clarify the aetiology of congenital heart disease in the SHB.

Neural tube defects (NTDs) are commoner in Ireland than in other European countries. The Southern Health Board region is no exception, with a prevalence rate of 2.5 per 1,000 births. It has been shown that taking 400 microgrammes of Folic Acid in the weeks before conception and during the first twelve weeks of pregnancy can prevent up to 71% of NTDs. A survey was carried out in 1997, of Cork women who had recently given birth. Folic Acid had been discussed with 78% of women during their pregnancy and nearly three quarters of the women had taken it at some stage during the pregnancy. However, only 32% had started taking it before becoming pregnant. Women in higher socio-economic groups were more likely to take Folic Acid and to start taking it significantly earlier. Increasing the pre-conceptual uptake of folic acid is a major public health challenge and strategies such as the fortification of one or more staple foods are currently being debated.

PRE-SCHOOL SCREENING

Children in the SHB are offered a developmental examination in the first year of life. Examinations are done by either a public health doctor or nurse. The commonest suspected defects are shown in Table 11.2.

Table 11.2 Presumed defects on initial examination by doctors at the nine month developmental examination in the SHB, 1996 and 1997

Presumed diagnosis	1995 (%)	1996 (%)	1997 (%)
Hearing problem	83 (4.2)	107 (6.4)	99 (5.9)
Squint	74 (3.7)	99 (6.0)	89 (5.3)
Developmental delay	111 (5.6)	101 (6.1)	99 (5.9)
No. attended examination	1,990 (100)	1,659 (100)	1,668 (100)

SCHOOL SCREENING

All children have a visual screen for defects at school entry. A full examination (including hearing and vision) is undertaken in first class. Another vision examination is carried out in sixth class. Boys are also screened for colour vision problems and girls are screened for scoliosis, a rare problem with the curvature of the spine (Table 11.3).

Table 11.3 Presumed defects diagnosed at school examinations in the SHB, 1996 and 1997.

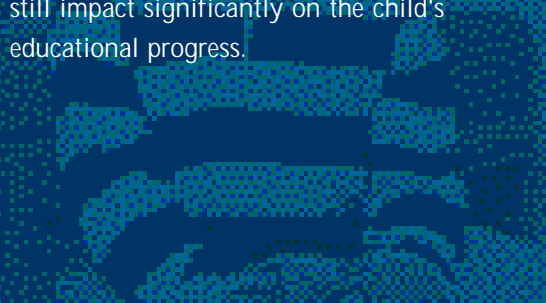
Presumed diagnosis	1995 (%)	1996 (%)	1997 (%)
Vision defects			
(6/12 in either eye)	1,613 (7.2)	1,584 (7.0)	1,921 (8.3)
Squint	350 (1.6)	244 (1.1)	592 (2.6)
Impaired hearing	620 (2.7)	531 (2.3)	462 (2.0)
Speech defect	128 (0.6)	124 (0.5)	77 (3.3)
Psychological/social and emotional problems	484 (2.2)	361 (1.6)	564 (2.4)
Undescended testis	78 (0.3)	77 (0.3)	66 (2.9)
No. children examined	22,504 (100)	22,629 (100)	23,080 (100)

Changes will be made in the near future to the Child Health Surveillance programme, following the recommendations of *Best Health for Children*.

CONCLUSIONS

Hearing problems in children are important because of their potential effect on developing language and communication skills. These in turn affect the psychological and educational progress of the child. Early identification and treatment is essential. Current thinking on screening is turning towards universal neonatal screening. Such a programme involves a highly technical test, which examines how the baby's hearing system responds to noise. It requires much organisation to ensure that all children are screened and that all personnel are trained in the technique. Properly done, however, the age at which babies are identified can be reduced from an average of 12-18 months with the present distraction test to 2 months.

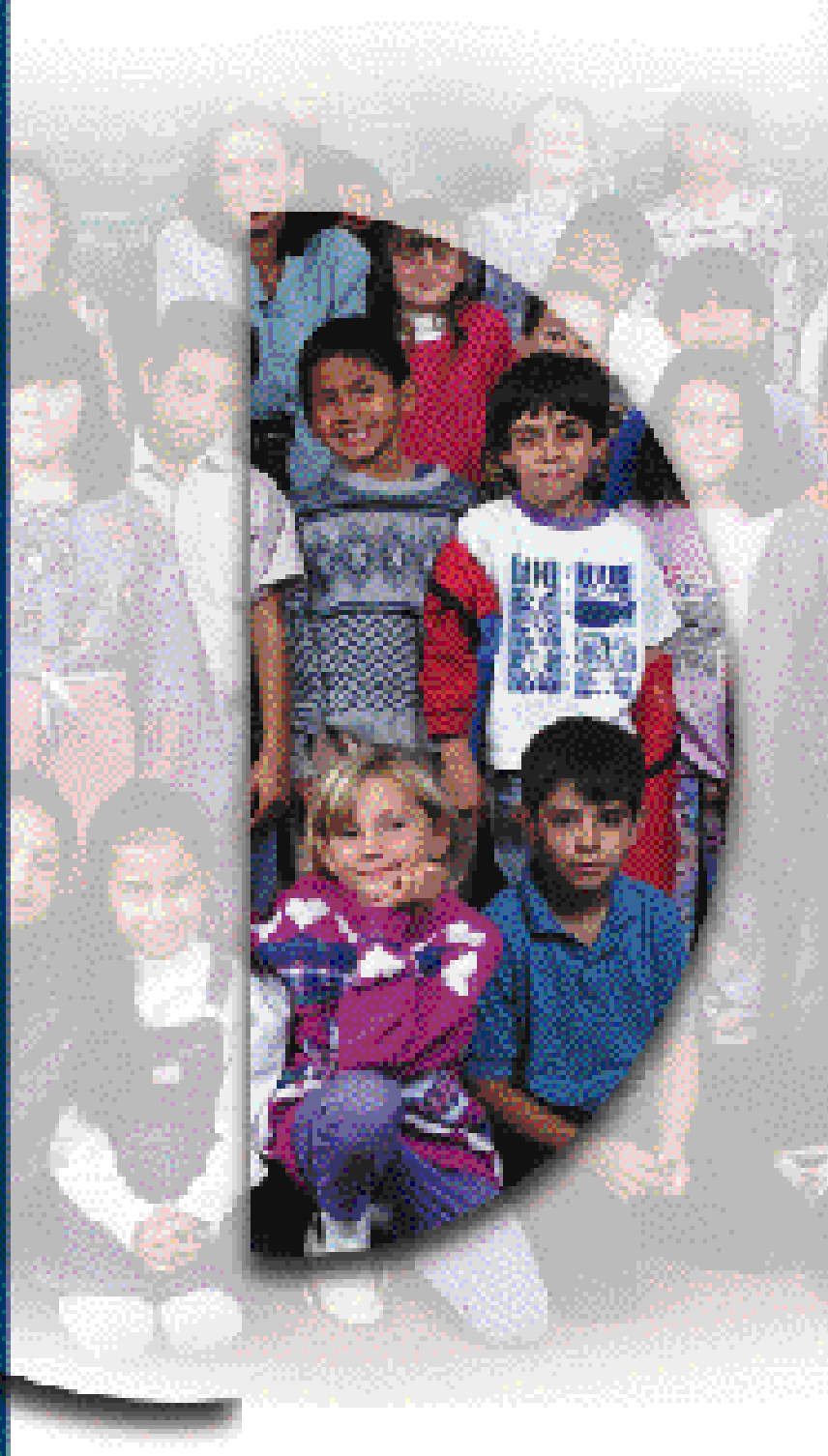
Serious visual defects are rare, but their detection is important as some are treatable (cataract, glaucoma), many have genetic implications and occasionally they are indicators of severe systemic disease. Early detection also enables early developmental and educational advice to parents. Other defects such as refractive errors, squints, colour vision discrimination problems and amblyopia are more common and less incapacitating, but can still impact significantly on the child's educational progress.



chapter twelve

CHILDHOOD: PROMOTING A HEALTHY ADULTHOOD

At all stages of childhood from conception, there is potential to enhance the health of children. We now recognise the importance of the early years in influencing the health of the next generation.



A healthy child is a result of many complex factors and, with the possible exception of our inherited genes, most of these factors are amenable to influence. While remediable risk factors affecting health occur throughout the life course, childhood is a particularly critical and vulnerable stage. Adverse outcomes that can result from an unhealthy childhood include mental illness, short stature, obesity, delinquency and unemployment. It is clear that the scope for health promotion for children is very wide and the potential benefits great.

In considering child health in its widest sense, and it is obvious that this wide view is appropriate, the influence of such socio-economic factors as income, education and material environment is all-important. Unfortunately there is increased risk of poverty amongst families with many children, additional children having a much greater impact on the standard of living of poorer than better off households. Therefore social deprivation impacts particularly on the health of children and needs to be considered in this equation.

The influences on the health of our children in Cork and Kerry are many. This chapter will detail key issues during the three stages of childhood; pregnancy, early childhood and the school years.

INFLUENCES ON CHILD HEALTH DURING PREGNANCY

While there may be some debate about the long-term value of such pursuits as talking to the unborn baby in the womb, we are now clear that the pregnant mother's wellbeing and lifestyle have a major bearing on the outcome of her pregnancy. Four areas that amply demonstrate the scope for positive health promotion before birth in the Cork and Kerry context are Rubella infection, folic acid intake in food or tablets and smoking and alcohol consumption in young women.

Rubella (German Measles) is preventable. The MMR vaccine protects against this infection, which is very mild in children and not much of a problem in adults, but causes Congenital Rubella Syndrome in over 25% of infants born to women infected during the first twelve weeks of pregnancy. Babies born with Congenital Rubella have multiple major defects including blindness, deafness, heart defects and mental handicap.

There has not been a reported case of Congenital Rubella Syndrome in the Southern Health Board in recent years. However, there is now cause for anxiety as MMR immunisation uptake levels have fallen. Current uptake is around 75% and with this level, we know that young women of childbearing years are being left at risk. A recent survey of 250 new mothers in the Southern Health Board area confirmed that almost 2% of these recently delivered mothers were not immune to rubella and could therefore have contracted the infection during pregnancy, placing their unborn baby at great risk.

Folic Acid, which is a B vitamin, is known to provide a major degree of protection (approximately 70%) against the defects of the spine present at birth called Neural Tube Defects. Recent survey evidence, generated in the Southern Health Board region, indicates that levels of knowledge about Folic Acid are high but women are either taking it too late in pregnancy or not at all. The protective value of Folic Acid against NTDs is pre-conception and during the first six weeks before the neural tube closes. Since almost 50% of pregnancies are unplanned, there is a strong argument for fortifying some staple foodstuff with Folic Acid. Our American colleagues use flour. Younger mothers, smokers and public patients in the Southern Health Board area were found to be less knowledgeable and most at risk of this largely preventable spinal defect.

Alcohol intake and its effects on pregnancy outcome is now a relevant issue in today's Ireland. Most young women drink alcohol, 75% of young women in the Southern Health Board region are current drinkers and only 11% of young Irish women claim they never drink. Recent evidence indicates that approximately one in ten Irish women in their childbearing years consumes more than the recommended alcohol limits. There is a social class difference in excess alcohol consumption in these women, with 11% of the highest social classes 1-2, 16% of social classes 3-4 and 8% of the lowest social classes 5-6 involved.

The effect of a small intake of alcohol during pregnancy is unclear. However the adverse effects of excess alcohol are well documented. Strong evidence links alcohol abuse in pregnancy with Foetal Alcohol Syndrome, which includes facial defects and mental handicap. Impaired growth resulting in low birthweight has been related to lower consumption of alcohol where the mother consumed more than 140 grams of absolute alcohol a week or two drinks a day.

Tobacco use is an important preventable cause of miscarriage, low birthweight, deaths from placental disorders and the Sudden Infant Death Syndrome. In repeated major studies conducted in many countries, it has been shown that smoking during pregnancy places the unborn baby in danger. Unfortunately, even with intense efforts, there is a low success rate of smoking cessation among pregnant women (Table 12.1). The level of smoking amongst our women of childbearing years is disappointingly high.

Table 12.1 Percentage of Women Smokers, SHB and National Smoking amongst women

Age group	15-44	18-34
Survey and year	SHB 1997	Slán 1998
% current smokers	38%	40%

Furthermore, there is a social class differentiation with 45% of social class 5-6 women in this age group as opposed to 36% of the more privileged groups.

Although smoking levels amongst middle aged and older women do fall to less than 20%, a major focus for our health promotion activities must be on preventing nicotine addiction amongst young women.

INFLUENCES DURING EARLY CHILDHOOD

There is much evidence to support the traditionally held belief that those early pre-school years are particularly formative. Breastfeeding, pre-school education, passive smoking and support for parents are used as examples to illustrate the potential for positive intervention at this stage.

Breastfeeding decreases the incidence and severity of many infections in infancy and may have a protective effect against some chronic diseases in adulthood. It has also been shown to assist in the bonding process between mother and baby. Nationally and locally, breastfeeding levels are very low. A recent survey of Cork mothers indicated that only 31% commenced breastfeeding and the most recent national figures give a level of only 15% after three months.

Pre-school education of a high quality has been shown in well conducted studies to result in improved social and educational achievement in children. Indeed, a number of randomised trials have been conducted to study any effects and one project - The Perry Highscope project - followed up children for twenty seven years. Most of the studies targeted families of lower socio-economic status and nearly all included home visiting and targeted parental training. While few studies directly measured physical health, there were sustained and multiple health-related outcomes, e.g. persistently higher educational performances, fewer teenage pregnancies, better employment and housing prospects. The content and quality of programmes was found to be crucial and involvement of the parents in their child's education was particularly advantageous.

The Irish Commission on the Family (1998) reports that one in five households uses the services of a crèche, nursery or pre-school playgroup. We do not have Irish data on the availability of these facilities to those children in most need. The relationship between health and education is strong, and pre-school time is vital in influencing whether children are emotionally and educationally prepared for school and life.

At present, the provision of pre-school support for families in Cork and Kerry is disparate and there are likely to be many gaps, overlaps and deficiencies. An Early Child Prevention Strategy and study of existing service provision is planned for 1999.

'Passive Smoking' is the breathing in of tobacco smoke in our immediate vicinity. Children are the so-called 'passive smokers', as they are not generally in a position to articulate their objections on discomfort. We know that upwards of 40% of young Irish parents smoke and therefore may expose their children to risk. Research indicates that passive smoking contributes to glue ear, asthma, bronchitis, pneumonia and reduced exercise tolerance in children. The risk of asthma associated with environmental tobacco smoke is particularly well founded. There is a dose-response relationship consistent across a variety of settings and tobacco smoke as an irritant could plausibly unmask reactive airway disease.

The ideal solution to passive smoking in childhood is that the adults, with whom they come in contact, quit their smoking habit. However adults need not feel fatalistic about our children being exposed to tobacco smoke as there are many practical measures they can take (Box 12.1).

BOX 12.1

- Keep most rooms in the house smoke-free
- Only go to smoke-free restaurants etc with children
- Do not smoke in the car
- Ask other adults not to smoke in child's presence

Parenting Programmes and parental support generally can both reverse emotional and behavioural problems and prevent their emergence. Research clearly shows that unresolved emotional distress in childhood is an important cause of emotional distress in adulthood. Furthermore emotional distress in adulthood and stress related habits such as smoking and the consumption of high fat foods are linked to physical disease. It therefore follows that parental support, both formal and informal, improves the health and wellbeing of children.

The availability of preventive supports is very limited and those that are in existence are not always seen as being accessible to those who would perhaps most benefit from them. The Community Mother's programme in the Eastern Health Board showed considerable gains for mothers and their children. The provision of these programmes in Cork and Kerry needs to be reviewed.

INFLUENCE ON CHILD HEALTH DURING SCHOOL YEARS

Schools are one of the few contexts in which Health Promotion interventions can reach most children and young people. The concept of the health promoting school in line with the WHO/EC initiative encompasses three main elements (Box 12.2).

BOX 12.2

HEALTH PROMOTING SCHOOLS

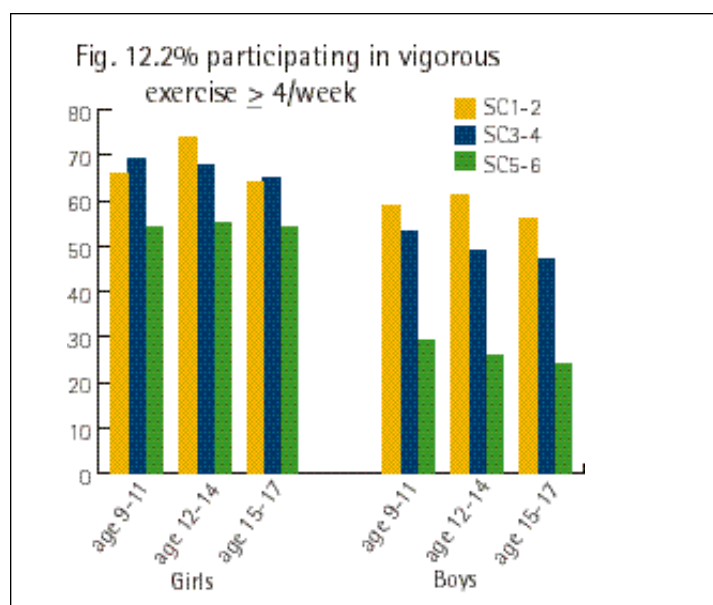
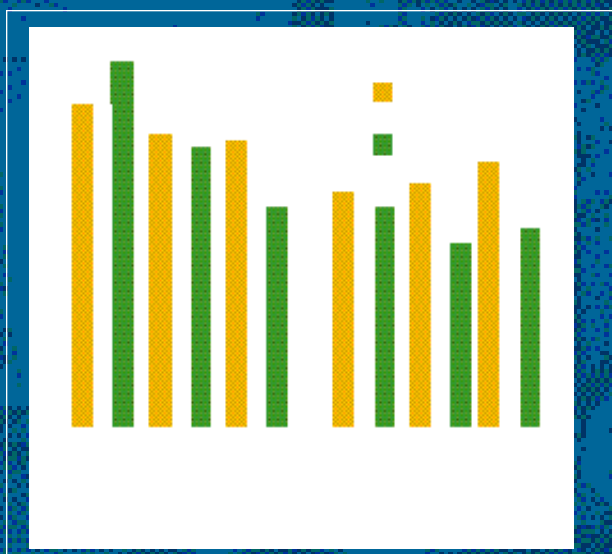
- Enhanced education for health - formal curriculum
- Improvements in the physical and social environment for pupils and staff (aspects that encourage healthy living)
- Expansion of school-community links

A major evaluation of health promoting schools in 1997 found that it leads to gains in pupil's knowledge, attitudes, self-esteem and health behaviours, particularly in primary schools. Unfortunately there is no evidence yet that this approach is particularly effective in disadvantaged areas.

The promotion of life management skills such as decision-making, communication and coping with emotions have been shown to improve children's mental wellbeing. It has been demonstrated that programmes with a number of components and within a well-run and supportive school are more effective than single interventions.

The promotion of a healthy diet for children should include education about the value of food, budgeting and cooking. Studies indicate that the effectiveness of this education has been enhanced if there is a school food policy and support for healthy eating choices by avoiding sweet vending machines and making fresh fruit available. These approaches help form attitudes to future consumption as well as present practice.

The Irish Slán Survey conducted in 1998 clearly documents the need for health promotion in schools. Exercise patterns and dietary fruit intake are used to illustrate the survey findings. Figures 12.1 and 12.2 demonstrate the scope for improvement with the better performance of girls than boys in eating fruit while boys exercise more. Younger children do better than older children for those examples of a healthy lifestyle. In addition, those figures demonstrate an unfortunate but not unexpected tendency towards less health-promoting behaviour in lower social classes who are economically deprived.



The concept of the Health Promoting School has been adopted in the Southern Health Board area for some years and since the advent of the Health Promotion Department within the Southern Health Board, there are now twenty-five Health Promoting schools in Kerry and fifty-six in Cork. Another fifty primary schools in Cork targeted for inclusion before the end of 1999.

The scope for influencing child health is immense from the time of conception through the important pre-school years and into the school going days. Interventions by us in the Southern Health Board area are highly organised and effective in some aspects, while many gaps and challenges remain. A targeted approach to disadvantaged children is valid and necessary.

CONCLUSIONS

Cork and Kerry - our people

The population of the Southern Health Board region has been rising since the 1970s. Much of this growth can be explained by inward migration, but births have also risen in the past 5 years. Cork County has a greater proportion of children than the rest of the region and Kerry has a greater proportion of older people.

Deprivation

There has been a dramatic fall in the percentage of unemployed people in the area over the past year. Kerry, as a county, is more deprived than Cork County, but a substantial proportion of Cork City is identified as being more deprived.

Mortality - all ages

Circulatory diseases were the major cause (46%) of mortality in the area in 1997. Cancer accounted for 23% and respiratory disease for 13% of deaths. Trends in Kerry have shown a fall in premature deaths and deaths in all ages over the past 4 years, Cork's trends have remained consistently above the national average.

Both Cork and Kerry are well above the national average for circulatory mortality. Cork's trends are worse than Kerry for cancer and respiratory mortality, but Kerry has a particularly poor record for deaths from injuries and poisonings.

Childhood Mortality

Healthier mothers, better economic conditions and smaller families have contributed to a dramatic fall in the numbers of childhood deaths in this century. Infant and neonatal mortality rates in the Southern Health Board region have now dropped below the national figures, but death rates in the 1-14 year age group are substantially higher. SIDS death rate in the area is similar to the national figure.

Childhood Illness

Most childhood illnesses are dealt with at home; many do not necessitate medical review. Hospitals deal with a small proportion of childhood ill health, at the severe end of the range of illness. In Cork University Hospital, admissions for childhood illness peak in January-February. More boys than girls are hospitalised. Children under one year old account for over one-fifth of all childhood admissions. Respiratory illnesses such as bronchitis and asthma are the commonest cause for admissions.

Infectious diseases continue to be a major cause of morbidity with 147 notifications of Salmonella, 211 of Campylobacter and 77 notifications of meningococcal disease in 1998. Most of these cases were children.

Major weapons in the fight against infectious diseases are current vaccines. In Cork and Kerry, 87% of children are immunised against polio, Hib and Diphtheria/Pertussis/Tetanus (DPT) or Diphtheria/Tetanus (DT) by their second birthday. The uptake of Measles, Mumps and Rubella (MMR) vaccine is lower still at 75% by age two years.

Cancers in children are far less preventable diseases than in adults. There were 22 cases of childhood cancer in the Southern Health Board region in 1996. Seven children died from cancer in 1996.

Disability

Diseases, accidents and birth defects can have long term impacts on children. In some, the result is disability. Unfortunately, there is no comprehensive data available on the prevalence of physical disability on a regional or national level. In the field of intellectual disability, there is a national register which records that 7.9 per 1,000 children aged 0 - 14 years suffered from some form of intellectual impairment in Cork and Kerry in 1996.

Healthy Minds

Psychological wellbeing is increasingly recognised as being a vital element in obtaining and maintaining good health. There are no prevalence figures available, but anecdotal evidence suggests that psychological disturbance in children is increasingly manifest in our schools and homes. Figures from the Child and Adolescent Psychiatry clinic in Cork, show a rising number of referrals, boys twice as commonly as girls.

Child Health Surveillance

In recent years, the concept of child health surveillance has broadened beyond the idea of routine regular examinations. There is increasing recognition of the role and abilities of parents in detecting problems with their children's health. More emphasis has been placed on preventative health care. However, standard checks are in place to monitor the health of children throughout childhood.

In the area of metabolic disorders, between the years 1995-1997, 13 cases of hypothyroidism were detected in Cork and Kerry; 2 cases of phenylketonuria and one case of maple syrup urine disease were identified. In 1996/1997, the most commonly occurring congenital malformations in the Southern Health Board region were congenital heart anomalies and neural tube defects. Hearing problems and developmental delay were the commonest presumed defects found at initial examination at the nine month developmental clinics in 1997. Visual problems and speech defects were the commonest presumed defects found at school clinics that year.

Childhood Promoting a Healthy Adulthood

At all stages of childhood from conception there is potential to enhance the health of children. We now recognise the importance of the early years in influencing the health of the next generation.

The pregnant mother's wellbeing and lifestyle have a major bearing on the outcome of her pregnancy. Recent survey evidence, generated in the Southern Health Board region, indicates that levels of knowledge about Folic Acid are high but women are either taking it too late in pregnancy or not at all. Approximately one in ten Irish women in their child-bearing years consumes more than the recommended alcohol limits. 38% of 15-44 year olds smoke.

There is much evidence to support the traditionally held belief that those early pre-school years are particularly formative. Breastfeeding decreases the incidence and severity of many infections in infancy and may have a protective effect against some chronic diseases in adulthood. A recent survey of Cork mothers indicated that only 31% commenced breastfeeding and the most recent national figures give a level of only 15% after three months. Pre-school education of a high quality has been shown in well conducted studies to result in improved social and educational achievement in children. One in five Irish households use the services of a crèche, nursery or pre-school playgroup, though it is unclear whether these facilities are available to those children most in need. Upwards of 40% of young Irish parents smoke and therefore may expose their children to risk.

Schools are a major setting for health promotion intervention in the older child. An evaluation of health promoting schools in 1997 found that it leads to gains in pupils' knowledge, attitudes, self-esteem and health behaviours particularly in primary schools. There are now twenty-five Health Promoting schools in Kerry, fifty-six in Cork and another fifty primary schools in Cork targeted for inclusion before the end of 1999.

chapter fourteen

KEY HEALTH DATA

	S.H.B.	Ireland
Population (1996)		
Total	546,640	3,621,035
Cork	420,510	
Kerry	126,130	

0-14	128,006	859,424
Over 65	66,127	413,822

Dependency ratio	0.55	0.54
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Socio-economic data

% Social Class 5 + 6	21.3	21.3
% Unemployed (Nov 1998)	6.4	6.4

Birth data (1997)

Total births	7,415	52,311
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Crude birth rate (live births per 100,000 population)	13.6	14.3
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Total fertility rate (expected number of births per woman if age specific rates in 1997 were to remain unchanged)	1.89	1.92
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Teen age birth rates (per 1,000 corresponding population)	12.3	17.3
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Lone parent families with children < 15 years as a percentage of all families (1996)	13.1	13.8
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Mortality (1997)

Total deaths	5,219	31,605
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Crude death rate (deaths per 100,000 population)	9.5	8.6
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Standardised Mortality Ratios

All causes, all ages	97.8	100
All causes, 0 - 64	102.1	100
Circulatory diseases, all ages	107.1	100
Cancer, all ages	100.5	100
Respiratory diseases, all ages	97.8	100
Injuries and poisonings	108.4	100

YPLL per 10,000 equivalent population

All causes, male 0 - 64 per 10,000 male population 0 - 64	464.7	457.8
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All causes, female 0 - 64 per 10,000 female population 0 - 64	256.3	268.7
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Children's Mortality Data (1997)

Neonatal mortality rate (deaths in the first month per 1,000 live births)	2.3	3.75
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Infant mortality rate (deaths in the first year per 1,000 live births)	4.0	6.2
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Crude death rate 1 - 14 (deaths per 100,000 corresponding population)	28.1	19.2
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SIDS mortality rate	1.6	1.4
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Children's Morbidity Data (1997)

Crude hospital discharge rate, 0 - 14 (per 1,000 corresponding population)	92.1	86.2
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Incidence of cancer, 0 - 14 (cases per 100,000 corresponding population)	17.2	12.1
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Incidence of meningococcal disease all ages (confirmed cases per 100,000)	4.2	9.5
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Incidence of tuberculosis, all ages (notified cases per 100,000)	16.5	11.8
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Total intellectual impairment, 0 - 14 (per 1,000 population, 1996)	7.9	7.0
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The above is not an exhaustive list. Other references are
available on request from the Department of Public Health.

