Epidemiological Information System

Feasibility/Pilot Study Summary

Z Johnson
H Johnson
February 1986
EASTERN HEALTH BOARD

THE EPIDEMIOLOGICAL INFORMATION SYSTEM

FEASIBILITY/PILOT STUDY SUMMARY

Z JOHNSON
H JOHNSON

FEBRUARY 1986
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SUMMARY

Much health data is stored on computer in Ireland, but it is difficult for those who are responsible for planning and delivery of health services to get at it. Most data is not coded for small geographical area or for social class, both of which omissions greatly limit its usefulness. Because of economic circumstances, resources for health care are scarce but allocation of what is available is somewhat haphazard. There appears to be no mechanism for targetting resources into the areas of greatest need.

This is the background which gave rise to the Epidemiological Information System (EIS) concept. The EIS is a health information system which brings together health data from diverse sources, coded for small area of known population structure, and for social class. The data is then used to identify health "black spots" and high risk groups. The system would have the potential to answer a vast range of ad hoc questions quickly (see fig.1)

The aim of this study was to demonstrate the usefulness of the EIS, to test its feasibility, to work out how it could capture the required data and to quantify the cost of its development.

A pilot study in which birth data for Community Care Area 8 was coded for district electoral division enabled major black spots of perinatal mortality, low birth weight, prematurity and low incidence of breast feeding to be identified.

A second study using medical card holders as an indicator group to identify areas of poor measles vaccine uptake again identified black spots. This enabled very effective intervention to be targetted at the areas of greatest need.

Examination of all of the major computerised health data systems in Ireland established that it is quite feasible for the EIS to get the data it requires, with the requisite additional area and class code. The cost of doing is not great.

Recommendations are made for setting up the EIS in the Eastern Health Board area and for coding all health data for small area. Various approaches to this coding are suggested.
DATA SOURCES
- CENSUS
- VITAL STATISTICS
- PERINATAL INFORMATION SYSTEM
- HOSPITAL INPATIENT ENQUIRY
- NATIONAL PSYCHIATRIC INPATIENT REPORTING SYSTEM
- ROAD ACCIDENTS
- CMS & MEDICAL CARD SYSTEMS
- ENVIRONMENTAL DATA - MET OFFICE

EPIEMIOLOGICAL INFORMATION SYSTEM

INFORMATION
- HEALTH BLACK SPOTS
- HIGH RISK GROUPS
- ENVIRONMENTAL HAZARDS
- DRUG UTILIZATION RATES
- POSITIVE HEALTH INDICATORS
- PROCEDURE RATES
- CATCHMENT AREA RESOURCE REQUIREMENTS

USERS
- HEALTH BOARDS
- COMMUNITY PHYSICIANS
- HOSPITALS
- GENERAL PRACTICE
- HEALTH EDUCATION BUREAU
- LOCAL AUTHORITIES
- DEPT. OF HEALTH
- UNIVERSITIES
<table>
<thead>
<tr>
<th>SYSTEMS</th>
<th>PAGE</th>
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<td>23</td>
</tr>
<tr>
<td>DEPT OF SOCIAL WELFARE</td>
<td>24</td>
</tr>
</tbody>
</table>
NAME: EIS-STREET INDEX

DATA SOURCES: DUBLIN CORPORATION
LOCAL GOVERNMENT COMPUTER SERVICES BOARD(LGCSB)
DUBLIN CO. COUNCIL

NO. OF STREETS IN EHB:
DUBLIN CORPORATION AREA 5000
DUBLIN CO. COUNCIL AREA 5000
WICKLOW 3000
KILDARE 3000

TOTAL 16,000

ACCESS TO DATA: COPIES OF THE STREET INDEX FILES WILL BE SOUGHT FROM THE CITY MANAGER OF DUBLIN CORPORATION AND FROM THE COUNTY MANAGERS OF WICKLOW AND KILDARE (THE FILES FOR BOTH WICKLOW AND KILDARE ARE HELD BY THE LGCSB)

THE STREET INDEX FOR DUBLIN CO. COUNCIL AREA IS MANUAL. AN UPDATED COPY OF THIS INDEX WILL BE SOUGHT BY THE EIS FROM EITHER THE CO. COUNCIL OR THE CSO.

CHANGES & DEVELOPMENTS REQ'D BY EIS: THE MANUAL INDEX FOR DUBLIN COUNTY WILL HAVE TO BE PUNCHED BY EIS STAFF. ALL 4 FILES WILL THEN BE COMBINED AND SORTED ALPHABETICALLY.

NEW STREET NAMES WILL HAVE TO BE CODED AND PUNCHED ANNUALLY.

AT PRESENT A PROGRAM IS BEING DEVELOPED TO ASSIGN DED CODES TO STREET NAMES IN THE EHB AREA

APPLICATIONS: THE COMPUTERISED STREET INDEX IS A FUNDAMENTAL REQUIREMENT FOR ALL MANUAL AND AUTOMATED GEOCODING OF HEALTH DATA.
SYSTEMS NAME: CENSUS OF POPULATION

HOME: CENTRAL STATISTICS OFFICE

CONTACT: DONAL GARVEY, PADDY MCDONALD

NO. OF DED'S: IN EHB (1986) 380 APPROX

ADDITIONAL INFO: THE EIS IS INTERESTED IN OBTAINING A TAPE OF SMALL AREA STATISTICS (SAS) FOR THE EHB AREA ONCE EVERY FIVE YEARS

PRESENT CODING OF SAS:
- GEOGRAPHICAL DED LEVEL
- SOCIAL CLASS OCCUPATION IS CODED BY THE SOCIAL CLASS SCALE

ACCESS TO DATA: THERE IS NO PROBLEM IN OBTAINING A TAPE WITH THE REQUIRED DATA

SMALL AREA STATISTICS FOR EACH DED INCLUDE:

- NO. OF MALES/FEMALES
- NO. OF MALES/FEMALES IN EACH AGE GROUP
- NO. OF FAMILY UNITS
- NO. OF MEMBERS IN FAMILY UNITS
- AGE OF YOUNGEST CHILD
- NO. OF PERSONS LIVING ALONE-MALES FEMALES
- OCCUPATION
- EMPLOYMENT STATUS
- EDUCATION

APPLICATIONS: SMALL AREA STATISTICS ARE THE ESSENTIAL DENOMINATION DATA FOR CALCULATION OF ALL INCIDENCE AND PREVALENCE RATES.
SYSTEMS NAME: VITAL STATISTICS

HOME: CENTRAL STATISTICS OFFICE

CONTACT: JOHN STEPHENS (ARDEE ROAD, RATHMINES)

NO. OF RECORDS: IN EHB (1984)

BIRTHS
SEE PERINATAL INFORMATION SYSTEM OVERLEAF

DEATHS
9,027

PRESENT CODING:
- GEOGRAPHICAL
COUNTY/COUNTY BOROUGH LEVEL. FROM 1/1/87
90% OF DEATHS IN DUBLIN WILL BE CODED BY DED

- SOCIAL CLASS
NO LONGER CODED. THE SOCIO ECONOMIC GROUP CODE
WAS USED BUT THE LEVEL OF DETAIL WAS POOR

ADDITIONAL CODING REQ'D BY EIS:
DED CODES SHOULD BE ADDED TO 10% OF DEATHS IN
DUBLIN AND TO ALL DEATHS IN WICKLOW AND
KILDARE

ACCESS TO DATA:
THERE SHOULD BE NO PROBLEM IN OBTAINING
ACCESS TO THE REQUIRED DATA ON DEATHS IN THE
EHB AREA. A REQUEST SHOULD HOWEVER BE MADE
TO THE CSO TO ADD DED CODES TO ALL EHB DEATHS
AND IF AGREED FUNDS SHOULD BE TRANSFERRED FROM
THE EHB TO THE CSO TO COVER THE COST OF
ADDITIONAL CODING

PARTIAL LIST OF DATA:

DEATHS:

DATE OF DEATH
INSTITUTION
DED
SEX
MARRITAL CONDITION
AGE
CAUSE OF DEATH (USING ICD CODE)

APPLICATIONS:
CALCULATION OF ALL AGE-SPECIFIC AND
STANDARDISED MORTALITY RATES ESSENTIAL TO
IDENTIFYING HEALTH BLACK SPOTS, MONITORING
EFFECT OF PREVENTATIVE PROGRAMS ETC.
SYSTEMS NAME: PERINATAL INFORMATION SYSTEM

HOME: DEPARTMENT OF HEALTH (CUSTOMS HOUSE)

CONTACT: RAY SMITH (HAWKINS HOUSE)

ACCESS TO DATA: DUE TO REASONS OF CONFIDENTIALITY IT WILL NOT BE POSSIBLE TO OBTAIN A COPY OF THE PLANNING UNITS MASTERFILE. HOWEVER A COMBINATION OF THE CSO’S VITAL STATISTICS DATA ON BIRTHS AND COPIES OF THE COMMUNITY CARE BIRTH NOTIFICATION FORMS WILL PROVIDE THE EIS WITH THE REQUIRED DATA.

NO. OF RECORDS:

<table>
<thead>
<tr>
<th>BIRTHS</th>
<th>LIVE BIRTHS</th>
<th>22,090</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>LATE FOETAL DEATHS</td>
<td>162</td>
</tr>
</tbody>
</table>

PRESENT CODING IN CSO:
- GEOGRAPHICAL COUNTY/COUNTY BOROUGH LEVEL. FROM 1/1/87 90% OF ALL BIRTHS IN DUBLIN ARE TO BE CODED FOR DED.
- SOCIAL CLASS FROM 1/1/87 ALL BIRTHS ARE TO BE CODED BY SOCIAL CLASS

ADDITIONAL CODING REQ'D BY EIS: DED CODES SHOULD BE ADDED TO BIRTHS IN DUBLIN AND TO ALL BIRTHS IN WICKLOW AND KILDARE. ICD CODES SHOULD BE ADDED TO ALL BIRTHS ALSO.

NOTE: THE SECOND HALF OF THE BIRTH NOTIFICATION FORM (HELD BY COMMUNITY CARE AREAS) WILL HAVE TO BE PUNCHED FOR ALL BIRTHS IN THE EHB

PARTIAL LIST OF DATA:

<table>
<thead>
<tr>
<th>INFANT</th>
<th>MOTHER</th>
</tr>
</thead>
<tbody>
<tr>
<td>DATE OF BIRTH</td>
<td>DED</td>
</tr>
<tr>
<td>ORDER OF BIRTH</td>
<td>NO. OF PREVIOUS BIRTHS/LATE FOETAL DEATHS</td>
</tr>
<tr>
<td>(IF MULTIPLE)</td>
<td></td>
</tr>
<tr>
<td>SEX</td>
<td></td>
</tr>
<tr>
<td>BIRTH WEIGHT</td>
<td></td>
</tr>
<tr>
<td>PERIOD OF GESTATION</td>
<td></td>
</tr>
<tr>
<td>PERINATAL DEATHS</td>
<td></td>
</tr>
<tr>
<td>CAUSE OF DEATH</td>
<td></td>
</tr>
<tr>
<td>OTHER DISEASES OF INFANTS</td>
<td></td>
</tr>
</tbody>
</table>

APPLICATIONS: PERINATAL DATA FORMS THE BASIS FOR DEVELOPING A WIDE RANGE OF PERINATAL HEALTH INDICATORS FOR TARGETING AND REDEPLOYING RESOURCES
DEPT. OF HEALTH - PLANNING UNIT

HOSPITAL

SEND BIRTH NOTIFICATION FORMS

DEPT OF HEALTH

CODED SENT

CSO

PUNCHED

COPS KILMAINHAM

ANNUAL REPORT

LIST OF BIRTH CERTS RETURNED

CODED FORMS RETURNED
SYSTEMS NAME: EUROCAT (REGISTER OF MULTIPLE BIRTHS AND BABIES WITH CONGENITAL ABNORMALITIES)

HOME: EHB REGISTER -MEDICO SOCIAL-RESEARCH BOARD
EUROCAT REGISTER-BRUSSELS

CONTACT: DR A. RADIC (DUBLIN)
PROFESOR MF LECHAT (BRUSSELS)

WHEN STARTED: 1979

NO. OF RECORDS:
IN EHB 1982
1979-83

PRESENT CODING:
-GEOGRAPHICAL
-SOCIAL CLASS

ADDITIONAL INFO: THE EHB REGISTER IS MANUAL. DATA IS COLLECTED FROM A LARGE NUMBER OF SOURCES AND FORWARDED TO EUROCAT WHERE IT IS PUNCHED. THE REGISTER IS A LIMITED LIST OF DATA ABOUT EACH MALFORMED CHILD AND ITS PARENTS.

ADDITIONAL CODING REQ'D BY EIS: DED AND SOCIAL CLASS WOULD HAVE TO BE CODED MANUALLY. THESE VARIABLES AND THE CASE NO. WOULD THEN BE PUNCHED AND MERGED WITH THE RECORDS ON THE BRUSSELS MASTERFILE.

ACCESS TO DATA: THERE SHOULD BE NO MAJOR PROBLEMS IN OBTAINING THE EUROCAT DATA ONCE AGREEMENT HAS BEEN REACHED WITH DR RADIC

PARTIAL LIST OF DATA:

<table>
<thead>
<tr>
<th>CHILD</th>
<th>MOTHER</th>
<th>MOTHER&amp;FATHER</th>
</tr>
</thead>
<tbody>
<tr>
<td>DATE OF BIRTH</td>
<td>RESIDENCE CODE</td>
<td>AGE</td>
</tr>
<tr>
<td>PLACE OF BIRTH</td>
<td>ILLNESS DURING</td>
<td>OCCUPATION</td>
</tr>
<tr>
<td>SEX</td>
<td>PREGNANCY</td>
<td>SOCIAL STATUS</td>
</tr>
<tr>
<td>BIRTH WEIGHT</td>
<td>TOT. NO OF PREGNANCIES</td>
<td>FAMILY HISTORY</td>
</tr>
<tr>
<td>MALFORMATIONS PRESENT</td>
<td></td>
<td>CHRONIC ILLNESS</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SMOKING</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DRUGS/ALCOHOL</td>
</tr>
</tbody>
</table>

APPLICATIONS: POTENTIALLY VERY VALUABLE FOR MONITORING MALFORMATIONS CAUSED BY ENVIRONMENTAL HAZARDS AND DRUGS
SOURCES

1 BIRTH NOTIFICATION FORM - RIVER HOUSE
2 HOSPITAL DISCHARGE SUMMARIES - HIPE
3 DIRECTORS OF COMMUNITY CARE
4 PERINATAL DEATH AUTOPSY REPORT - MATERNITY HOSPITALS
5 DEATH CERTIFICATES - CSO
6 PEDIATRICIANS AND PATHOLOGISTS - CHILDREN'S HOSPITALS
7 NATIONAL DRUGS ADVISORY BOARD

MSRB REGISTRAR

BRUSSELS EUROCAT

REPORT 1979-85 & PRELIMINARY YEARLY REPORTS
SYSTEMS NAME: HOSPITAL INPATIENT ENQUIRY SCHEME (HIPE)

HOME: MEDICO SOCIAL RESEARCH BOARD

CONTACT: JOHN O'GORMAN

WHEN STARTED: 1969

NO. OF DISCHARGES: 166,000

IN EHB (1982)

PRESENT CODING:
- GEOGRAPHICAL
- SOCIAL CLASS

ADDITIONAL CODING
REQ'D BY EIS: DED CODES WOULD HAVE TO BE ADDED MANUALLY TO EACH OF THE 166,000 FORMS AND THEN PUNCHED

ACCESS TO DATA: THERE SHOULD BE NO PROBLEM OBTAINING THE REQUESTED HIPE DATA

CONTENTS:
PATIENT'S
DATE OF BIRTH
LENGTH OF STAY IN HOSPITAL
SEX
MARITAL STATUS
ADMISSION CODE
DISCHARGE CODE
PRINCIPAL DIAGNOSIS
OTHER CONDITIONS
PRINCIPAL OPERATIONS
OTHER OPERATIONS

APPLICATIONS:
PRODUCTION OF A FINE-GRAINED GEOGRAPHICAL PICTURE OF A VAST NUMBER OF MEDICAL AND SURGICAL CONDITIONS.
COMPARISON OF PROCEDURE RATES IN DIFFERENT CATCHMENT AREAS.
VOLUNTARY HOSPITALS IN DUBLIN

HOSPITALS (EXCLUDING DISTRICT, PRIVATE & MATERNITY)

OUTPUT AND ORIGINAL FORMS

CCS (PUNCHED)

CODER FORMS

VALIDATION

MSRB / HIPE
SYSTEMS NAME: VOLUNTARY HEALTH INSURANCE (VHI)

HOME: HEAD OFFICE, ABBEY ST., DUBLIN

CONTACTS: THOMAS RYAN

EHB RECORDS (1984):
- NO. OF SUBSCRIBERS: 180,000
- NO. OF MEMBERS: 446,000
- NO. OF INPATIENT CLAIMS: 50,400

PRESENT CODING:
- GEOGRAPHICAL: MEMBERS FULL ADDRESS IS HELD, HOWEVER CLAIMS ARE NOT GEOGRAPHICALLY CODED
- SOCIAL CLASS: OWN SOCIAL CODING SYSTEM (NOT UPDATED ON A REGULAR BASIS)

ADDITIONAL CODING REQ'D BY EIS:
- SUBSCRIBERS ADDRESSES COULD BE AUTOMATICALLY CODED FOR DED, USING THE EIS ADDRESS MATCHING PROGRAM

ACCESS TO DATA: AGREED IN PRINCIPLE. FILE OF DATA FOR NON-HIPE HOSPITALS CAN BE SUPPLIED

PARTIAL LIST OF DATA REQUESTED:
AS FOR HIPE ON PREVIOUS PAGE

APPLICATIONS:
VALUABLE SUPPLEMENT TO HIPE DATA WHICH HAS COVERAGE OF ONLY 85% OF HOSPITAL DISCHARGES AT PRESENT
SYSTEMS NAME: GENERAL MEDICAL SERVICE
HOME: CENTRAL COMPUTER SERVICES (CCS), KILMAINHAM.
CONTACT: JOHN MARKS
WHEN STARTED: EARLY 1970’S
NO. OF RECORDS: MEDICAL CARD SYSTEM (MCS)
IN EHB (1983) PERSONS COVERED 325,769
CARDHOLDERS 201,448

GENERAL MEDICAL SYSTEM (GMS)
NO. OF DOCTORS 497
NO. OF PHARMACIES 385
AVAILABLE ITEMS DRUGS/APPLIANCES (1982) 4,500/5,000

PRESENT CODING ON MCS:
- GEOGRAPHICAL
  THE CARDHOLDERS FULL ADDRESS IS HELD. THIS IS CODED BY COMMUNITY
  CARE AREA, URBAN/RURAL AND DISTRICT (PARISH)

- SOCIAL CLASS
  APPLICANTS USUAL OCCUPATION IS NOTED ON THE APPLICATION FORM. THIS IS
  NEITHER CODED FOR SOCIAL CLASS NOR PUNCHED.

ADDITIONAL CODING
REQ’D BY EIS:
THE DISTRICT (PARISH) CODE SHOULD BE REPLACED
BY THE DED CODE ON ALL NEW MEDICAL CARD
APPLICATIONS. EXISTING RECORDS COULD BE CODED
AUTOMATICALLY USING THE EIS ADDRESS MATCHING
PROGRAM

ACCESS TO DATA:
AGREED IN PRINCIPLE GIVEN ADEQUATE RESOURCES

EXTRACTS OF THE FOLLOWING FILES WOULD BE OF INTEREST TO THE EIS:

  GMS - ANNUAL REPORT FILE
  GMS - DRUG AND APPLIANCES MASTER
  GMS - PHARMACY CLAIMS/PAYMENTS DETAILS
  MCRS - CARDHOLDERS MASTER

APPLICATIONS:
AGE AND SEX OF SPECIFIC VISITING RATES AND
CONSUMPTION OF SPECIFIC DRUGS FOR AREAS OF
ANY SIZE.
SYSTEMS NAME: NATIONAL PSYCHIATRIC INPATIENT REPORTING

HOME: MEDICO SOCIAL RESEARCH BOARD

CONTACT: DR DERMOY WALSH

NO. OF ADMISSIONS: 8,530
IN EHB (1982)

PRESENT CODING:
- GEOGRAPHICAL CITY/COUNTY LEVEL
- SOCIAL CLASS SOCIO ECONOMIC GROUP CODE

ADDITIONAL CODING REQ'D BY EIS: DED CODE TO REPLACE THE PRESENT COUNTY CODE

ACCESS TO DATA: AGREED IN PRINCIPLE

PARTIAL LIST OF DATA:

DATE OF ADMISSION
SEX
MARITAL STATUS
ADMISSION DIAGNOSIS(X2)
DATE OF DISCHARGE
DISCHARGE DIAGNOSIS(2)

APPLICATIONS: FINE GRAINED GEOGRAPHICAL PICTURE OF PSYCHIATRIC MORBIDITY FOR ANY CONDITION E.G. ALCOHOLISM
DATA ASSEMBLY PATH

PSYCHIATRIC HOSPITALS

1YR FORM QUARTERLY

MSAB/NPIRS

OUTPUT Coded Forms

JAMES STREET (EHB)
SYSTEMS NAME: MENTAL HANDICAP REGISTRATION SYSTEM
HOME: EASTERN HEALTH BOARD
GOOD COUNSEL CENTRE FOR MENTAL HANDICAP IN BALLYBODEN
CONTACT: DR VINCENT MALONEY, TONY REILLY (JAMES' ST)

NO. OF CASES ON REGISTER IN EHB: 8,000 (1985)

PRESENT CODING:
- GEOGRAPHICAL FULL ADDRESS IS ON FILE, THIS IS CODED BY COMMUNITY CARE AREA
- SOCIAL CLASS OCCUPATION IS NOT RECORDED

ADDITIONAL CODING REQ'D BY EIS:
DED CODES COULD BE AUTOMATICALLY ASSIGNED USING THE EIS ADDRESS MATCHING PROGRAM

ACCESS TO DATA:
ONCE CONFIDENTIALITY IS ASSURED THERE SHOULD BE NO DIFFICULTY IN OBTAINING THE REQUIRED DATA

PARTIAL LIST OF DATA:

PERSONAL
SEX
DATE OF BIRTH
DEGREE IF MENTAL HANDICAP
PSYCHIATRIC ASSESSMENT
DIAGNOSIS
ADDITIONAL HANDICAPS
MOTHERS/FATHERS AGE AT CHILDBIRTH

APPLICATIONS:
MONITORING INCIDENCE AND PREVALENCE OF MENTAL HANDICAP ON A SMALL AREA BASIS AND SURVEILLANCE OF EFFECT ENVIRONMENTAL HAZARDS SUCH AS LEAD.
<table>
<thead>
<tr>
<th>SYSTEMS NAME:</th>
<th>DOMICILARY CARE ALLOWANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOME:</td>
<td>EASTERN HEALTH BOARD</td>
</tr>
<tr>
<td></td>
<td>JAMES’S ST.</td>
</tr>
<tr>
<td>CONTACT:</td>
<td>THOMAS BARRY, THOMAS PIERCE</td>
</tr>
<tr>
<td>NO. OF CASES:</td>
<td>2,729</td>
</tr>
<tr>
<td>IN EHB (1985)</td>
<td></td>
</tr>
<tr>
<td>PRESENT CODING:</td>
<td>FULL ADDRESS IS ON FILE, THIS IS CODED FOR</td>
</tr>
<tr>
<td></td>
<td>COMMUNITY CARE AREA</td>
</tr>
<tr>
<td></td>
<td>NO INFORMATION RECORDED ON PARENTS OCCUPATION</td>
</tr>
<tr>
<td>ADDITIONAL INFO:</td>
<td>THERE ARE PLANS FOR THE INTRODUCTION OF A NEW</td>
</tr>
<tr>
<td></td>
<td>DCA SYSTEM ALONG THE LINES OF THE PRESENT</td>
</tr>
<tr>
<td></td>
<td>DPMA ONE IN THE NEXT FEW YEARS.</td>
</tr>
<tr>
<td>ADDITIONAL CODING REQ’D BY EIS:</td>
<td>AUTOMATED DED CODING USING EIS ADDRESS MATCHING PROGRAM.</td>
</tr>
<tr>
<td></td>
<td>A CODE FOR SEX OF CHILD.</td>
</tr>
<tr>
<td></td>
<td>ICD CODES TO REPLACE THE PRESENT ILLNESS CODE SHOULD BE INCLUDED ON THE NEW SYSTEM.</td>
</tr>
<tr>
<td>ACCESS TO DATA:</td>
<td>ONCE THE NEW SYSTEM IS IMPLEMENTED THERE SHOULD BE NO DIFFICULTY IN OBTAINING THE REQUIRED DCA DATA.</td>
</tr>
<tr>
<td>PARTIAL LIST OF DATA:</td>
<td>DED</td>
</tr>
<tr>
<td></td>
<td>DATE OF BIRTH OF CHILD</td>
</tr>
<tr>
<td></td>
<td>ILLNESS CODE (ICD)</td>
</tr>
<tr>
<td></td>
<td>SEX</td>
</tr>
<tr>
<td>APPLICATIONS:</td>
<td>FINE GRAINED GEOGRAPHICAL PICTURE OF SEVERE MORBIDITY IN CHILDREN</td>
</tr>
</tbody>
</table>
SYSTEMS NAME: DISABLED PERSONS MAINTENANCE ALLOWANCE

HOME: EASTERN HEALTH BOARD
       JAMES'S ST.

CONTACT: THOMAS BARRY, THOMAS PIERCE

WHEN STARTED: THE PRESENT SYSTEM WAS IMPLEMENTED IN MAY 1983

NO. OF CASES: 5,661
IN EHB (1985)

PRESENT CODING:
- GEOGRAPHICAL FULL ADDRESS IS ON FILE AND IS CODED FOR
   COMMUNITY CARE AREA
- SOCIAL CLASS FORMER OCCUPATION IS NOT CODED ALTHOUGH IT IS
   RECORDED ON THE APPLICATION FORM

ADDITIONAL CODING
REQ'D BY EIS: AUTOMATED DED CODING USING EIS ADDRESS
   MATCHING PROGRAM.
   ICD CODES SHOULD REPLACE THE PRESENT ILLNESS
   CODE.

ACCESS TO DATA: AGREED IN PRINCIPLE

PARTIAL LIST OF DATA:

SEX
DATE OF BIRTH
MARITAL STATUS
ADMISSION CODE
COMMENCEMENT DATE
ILLNESS CODE (PREFERABLY ICD)
DED

APPLICATIONS: FINE GRAINED GEOGRAPHICAL PICTURE OF SEVERE
   MORBIDITY IN ADULTS.
SYSTEMS NAME: AN FORAS FORBARTHA - ENVIRONMENTAL HAZARDS/POLLUTION

HOME: ST MARTINS HOUSE, WATERLOO RD

CONTACT: MICHAEL L. BAILEY

NO. OF MONITORING SITES IN DUBLIN: SMOKE AND SULPHUR DIOXIDE (DAILY) 17
(1985) HEAVY METALS (WEEKLY) 6

ADDITIONAL INFO: HEAVY METALS INCLUDE CADMIUM, COPPER, ZINC AND LEAD.
A 1KM GRID CAN BE USED TO COMPILE AN INVENTORY OF SMOKE AND SULPHUR DIOXIDE EMISSIONS FROM THE DUBLIN CONURBATION. ALSO A MODEL IS PRESENTLY BEING DEVELOPED TO DETERMINE THE SOURCE AND DESTINATION OF EMISSIONS.

ACCESS TO DATA: AIR QUALITY DATA MAY BE NEGOTIABLE. EMISSION DATA UNLIKELY TO BE

PARTIAL LIST OF DATA:

DATE
MEASUREMENTS
-SULPHUR DIOXIDE
-SMOKE
-CADMIUM
-COPPER
-ZINC
-LEAD

APPLICATIONS: DETERMINATION OF EFFECT OF AIR POLLUTION ON HEALTH IN TERMS OF MORBIDITY AND MORTALITY IN MOST POLLUTED AREAS.
SYSTEMS NAME: METEOROLOGICAL SYSTEM - ENVIRONMENTAL DATA

HOME: METEOROLOGICAL OFFICE, GLASNEVIN HILL

CONTACT: DECLAN MURPHY, DENIS FITZGERALD

NO. OF STATIONS IN EHB AREA: SYNOPTIC (HOURLY READINGS) 15
(1984) CLIMATOLOGICAL (DAILY READINGS) 50/55

ADDITIONAL INFO: THE SYNOPTIC STATION WHICH THE EIS WOULD BE
INITIALLY INTERESTED IN OBTAINING DATA FROM
WOULD BE DUBLIN AIRPORT

ACCESS TO DATA: AGREED IN PRINCIPLE.

PARTIAL LIST OF DATA:

<table>
<thead>
<tr>
<th>DATE</th>
<th>HOUR</th>
<th>WIND DIRECTION</th>
<th>PRESSURE</th>
<th>HUMIDITY</th>
<th>RAINFALL</th>
<th>SUNSHINE</th>
<th>TEMPERATURE</th>
</tr>
</thead>
</table>

APPLICATIONS: A VALUABLE ADDITION TO AIR POLLUTION DATA IN
ORDER TO CONTROL FOR EFFECT OF TEMPERATURE
ETC ON INCIDENCE OF ILLNESS
SYSTEMS NAME: DEPARTMENT OF SOCIAL WELFARE

HOME: GOLDSMITH HOUSE, 7-13 PEARSE ST.

CONTACT: RONAN ROONEY

NO. OF RECIPIENTS IN EHB (APPROX): SCHEME
(1984) FAMILY INCOME SUPPLEMENT 2,400
DEsertED WIVES BENEFIT/ALLOWANCE 800
UNMARRIED MOTHERS ALLOWANCE 4,500
SICKNESS BENEFIT 38,000
INVALIDITY PENSION 8,000

PRESENT CODING:
- GEOGRAPHICAL
   FULL ADDRESS OF RECIPIENT IS ON FILE CODED TO
   COUNTY LEVEL
- SOCIAL CLASS
   SPACE IS PROVIDED ON EVERY SYSTEM FOR
   RECIPIENTS OCCUPATION. DATA IS NEITHER
   CODED NOR PUNCHED

ADDITIONAL CODING REQ'D BY EIS:
AUTOMATED DED CODING USING EIS ADDRESS
MATCHING PROGRAM

ACCESS TO DATA:
AGREED IN PRINCIPLE GIVEN CERTAIN GUARANTEES

PARTIAL LIST OF DATA:

DATE OF BIRTH
D.O.B.
SEX
MARITAL STATUS
NO. OF CHILDREN
ILLNESS (IF ANY)
TYPE OF ALLOWANCE

APPLICATIONS:
WOULD PROVIDE ADDITIONAL INDICATORS OF
MORBIDITY FOR SMALL GEOGRAPHICAL AREAS FOR
MONITORING EFFECTS OF AIR POLLUTION ETC
MORBIDITY
SUMMARY OF COSTS
### EIS - COSTS
(MAN HOURS IN FIRST YEAR)

<table>
<thead>
<tr>
<th>System</th>
<th>Coding</th>
<th>Punching</th>
</tr>
</thead>
<tbody>
<tr>
<td>VHI</td>
<td>504</td>
<td>19</td>
</tr>
<tr>
<td>MENTAL HANDICAP REGISTER</td>
<td>80</td>
<td>3</td>
</tr>
<tr>
<td>DCA</td>
<td>54</td>
<td>2</td>
</tr>
<tr>
<td>DPMA</td>
<td>56</td>
<td>3</td>
</tr>
<tr>
<td>GMS</td>
<td>2000</td>
<td>76</td>
</tr>
<tr>
<td>SOCIAL WELFARE</td>
<td>810</td>
<td>30</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>3504</strong></td>
<td><strong>133</strong></td>
</tr>
</tbody>
</table>

= 2 MAN YEARS @ 1640 HOURS/YEAR

* Addresses are on file for all of these systems. Thus, CED codes could be assigned automatically using EIS address matching program.

### EIS - COSTS
(MAN HOURS / YEAR)

<table>
<thead>
<tr>
<th>System</th>
<th>Coding</th>
<th>Punching</th>
</tr>
</thead>
<tbody>
<tr>
<td>PERINATAL SYSTEM</td>
<td>372</td>
<td>204</td>
</tr>
<tr>
<td>EUROCAT</td>
<td>28</td>
<td>1</td>
</tr>
<tr>
<td>HIPE</td>
<td>1660</td>
<td>62</td>
</tr>
<tr>
<td>NATIONAL IN-PATIENT PSYCHIATRIC SCHEME</td>
<td>85</td>
<td>3</td>
</tr>
<tr>
<td>OTHER (SEE BELOW)</td>
<td>32</td>
<td>2</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>2177</strong></td>
<td><strong>272</strong></td>
</tr>
</tbody>
</table>

= 1.3 MAN YEARS @ 1640 HOURS/YEAR

**OTHER** - INCLUDES ANNUAL INCREASES/CHANGES IN THE FOLLOWING SYSTEMS

- VHI
- MENTAL HANDICAP
- DCA
- DPMA
EIS - STAFFING

FULL TIME
MEDICAL EPIDEMIOLOGIST
ANALYST/PROGRAMMER
CO-ORDINATOR

PART TIME
STATISTICIAN

OTHERS
CODER
KEY PUNCH OPERATOR

EIS - COSTS

INITIAL          ANNUAL

ORDANANCE SURVEY DED MAPS £ 3000 £ 2850
SOFTWARE : SAS £ 7500 £ 2400
SAS/GRAPH £ 5500

£ 16000 £ 5250
CONCLUSIONS AND RECOMMENDATIONS
CONCLUSIONS

1. The EIS is an extremely effective instrument for identifying health black spots and high risk groups, and has the potential to greatly increase the effectiveness of health service planning and intervention programs.

2. Development of the EIS in the Eastern Health Board Area is quite feasible.

3. The cost of developing the EIS would not be great, although some additional work would be created in certain agencies which collect routine health data.
RECOMMENDATIONS

1. The EIS should be developed in the Eastern Health Board as soon as possible with a view to collecting prospective data from 1.1.87.

2. Immediate attention should be given to ensuring correspondence between the planned post code system and DED's.

3. Alternatively all census data should be coded for post code area.

4. All health data routinely collected should be coded for DED or post code area, depending on 2 and 3 above, and for social class.

5. A program for the automatic assignment of DED codes to computerized addresses should be developed by the EIS.

6. Data quality should be improved by assigning responsibility for supervising completeness, accuracy and timeliness to medically qualified epidemiologists.

7. In order to set up a baseline, data from 1980 onwards should be coded retrospectively for DED and social class.

8. The EIS must be staffed by medically qualified epidemiologists with the skill and training both to analyse and interpret the data, and to develop appropriate intervention strategies.
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