

KIDSNET DATABOOK 2006

*A report from KIDSNET,
Rhode Island's integrated child
health information system*

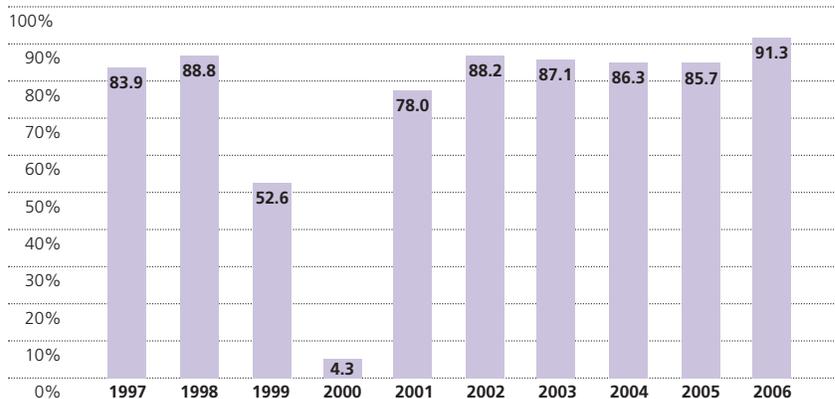


Infants Receiving the First Dose of Hepatitis B Vaccine Before Hospital Discharge

THE EMPHASIS ON RECEIVING THE FIRST DOSE PRIOR TO HOSPITAL DISCHARGE HAS BEEN STRESSED SINCE THE END OF 2005.

The Advisory Committee on Immunization Practices (ACIP), the American Academy of Pediatrics (AAP) and the American Academy of Family Practitioners (AAFP), recommend that all medically stable infants weighing more than 2000 grams receive the first dose of hepatitis B vaccine soon after birth and before hospital discharge. In July 1999, in response to concerns about thimerosal in hepatitis B vaccine, the AAP and Public Health Service issued a joint statement recommending postponing the first dose of hepatitis B vaccine until 2-6 months of age for infants born to mothers who were hepatitis B negative. This recommendation was reversed by the end of 1999 but it took close to 2 years to return routine hepatitis B vaccination at birth in Rhode Island hospitals to previous levels. Vaccination dates and hospital discharge dates are both collected in KIDSNET, allowing insight into how well Rhode Island is meeting the recommendation. The data reflect 84 to 91% hepatitis B vaccination rates prior to discharge except in the years 1999 to 2001 which were affected by the brief period in 1999 where the recommendations were to postpone the first dose. The emphasis on receiving the first dose prior to hospital discharge has been stressed since the end of 2005. It appears that this emphasis has made a difference since 2006 data show the highest rate (91.3%) in the past ten years. Rhode Island recently won a national award from the Centers for Disease Control and Prevention (CDC) for the most improved rate in infants who received the birth dose of hepatitis B vaccine.

INFANTS RECEIVING THE FIRST DOSE OF HEPATITIS B VACCINE BEFORE HOSPITAL DISCHARGE, 1997-2006



Notes: Data represent births that occurred at Rhode Island maternity hospitals
Source: KIDSNET, Rhode Island Department of Health

Services for Infants Born to Hepatitis B Positive Mothers

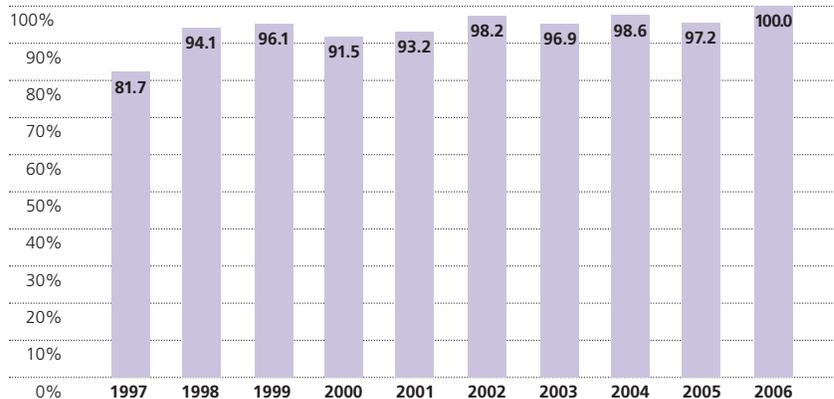


SINCE 2002, MORE THAN 96% OF INFANTS RECEIVED TREATMENT AND VACCINATION WITHIN THE FIRST DAY OF LIFE.

Babies born to mothers who are hepatitis B positive (HBSag+) can develop hepatitis B which can lead to serious liver disease and even death if they are not treated immediately with Hepatitis B immunoglobulin (HBIG). The Centers for Disease Control and

Prevention recommends that these babies receive HBIG and a hepatitis B vaccination within twelve hours of birth. Although time of vaccination is not recorded in KIDSNET, it is possible to look at delivery of this important life saving treatment by the first day of life. Since 2002, more than 96% of infants received treatment and vaccination within the first day of life. It is also critical that these infants receive a complete and timely series of hepatitis B vaccination. All of these babies are referred to the Family Outreach Program so that home visitors can help assure the baby has a medical home and that barriers to accessing healthcare, such as insurance, transportation, or language spoken, are eliminated. In 2006, 60 infants were born to hepatitis B positive mothers. Of these, 58 were Rhode Island residents and were referred to the Family Outreach Program for a home visit. Forty-seven (81%) families took advantage of this service and had at least one home visit.

INFANTS BORN TO HEPATITIS B POSITIVE MOTHERS WHO RECEIVED HBIG AND HEPATITIS B VACCINE AT BIRTH, 1997-2006



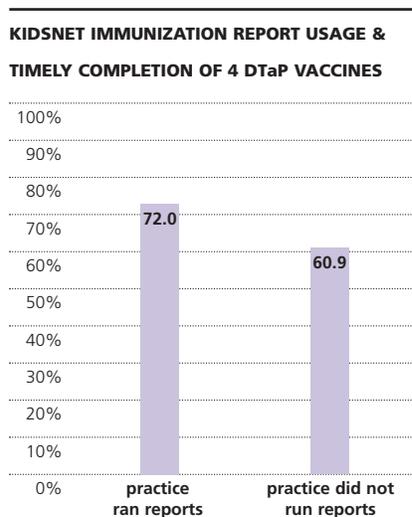
Notes: Data represent births that occurred at RI maternity hospitals; "at birth" is defined as within one day of birth
Source: KIDSNET, Rhode Island Department of Health

Impact of KIDSNET Reports on Preventive Services

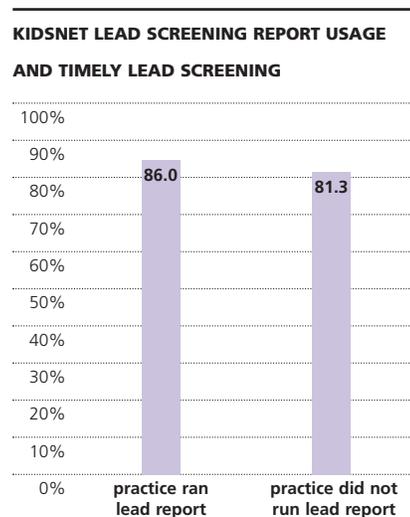


AN IMPORTANT
APPLICATION OF KIDSNET
IS ASSURING ALL
RHODE ISLAND CHILDREN
RECEIVE PREVENTIVE
HEALTH SERVICES.

Primary care providers are important partners in assuring that children receive preventive health services. Previously, primary care providers could only access KIDSNET data by looking up each child in their practice one at a time. In 2005, two reports became available to assist primary care providers in assuring that all children in their practice are up to date on vaccinations and have been lead screened. Examining usage of KIDSNET reports reveals a positive association between running the reports and having patients who are up to date on DTaP vaccinations and are lead screened. Seventy-two percent (72%) of children had 4 valid DTaP vaccines in practices that ran the immunization report compared to 61% in practices that did not run the report. Practices that used the KIDSNET lead screening report screened 5% more children once by 18 months of age than those that did not. These findings underscore one of the important applications of KIDSNET in assuring that all Rhode Island children receive preventive health services. It is only by using the data in KIDSNET that a real impact can be made.



Notes: Data represent children born in RI who turned 2 in 2006 and are linked to primary care providers supplying immunization data to KIDSNET; timely completion is defined as 4 valid doses by the 2nd birthday.
Source: KIDSNET, Rhode Island Department of Health



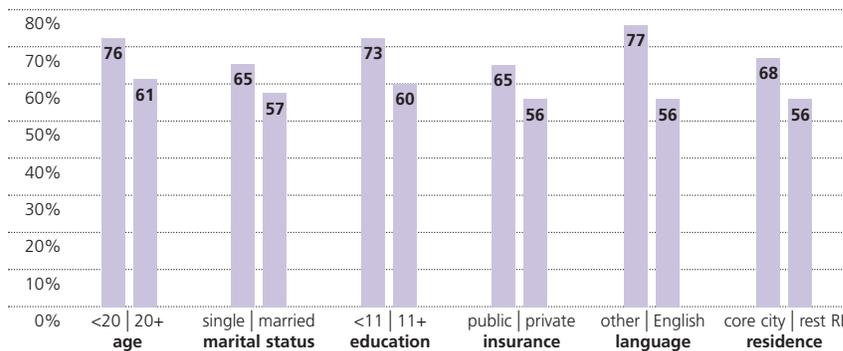
Notes: Data represent children born in RI during 2004; timely lead screening is defined as having received at least one lead test by 18 months of age.
Source: KIDSNET, Rhode Island Department of Health

Preventive Health Services and Demographic Factors

Looking at rates of preventive health services by demographic factors such as race, language spoken, residence, insurance, and other factors is extremely helpful in identifying disparities and in targeting outreach efforts. Programmatic databases usually indicate those children who have received a service, rather than those who have not. Furthermore, program databases usually do not contain much demographic data. KIDSNET links demographic data from the birth certificate and newborn developmental screening to preventive services provided. This allows comparisons of children who have received services with those who have not by demographic factors. KIDSNET data reveal different patterns based on the type of service. For example, lead screening rates do not seem to be related to any demographic risk factor. In the case of immunizations, residence and language spoken in the home seem to be related to immunization status. Children living in core cities (Central Falls, Newport, Pawtucket, Providence, West Warwick, Woonsocket) where more than 15% of children live in poverty are much less likely to have 4 DTap vaccinations in KIDSNET (57%) than those living in the rest of the state (64%). Children born to mothers who speak Spanish in the home were significantly less likely to have 4 Dtap vaccinations in KIDSNET (55%) than children of mothers who speak English (61%). It is possible that this is a reflection of underreporting of immunization to KIDSNET from practices serving children in the core cities and those who are Spanish-speaking.

When looking at specific developmental risk characteristics, newborns were more likely to receive a home visit if the mother was less than 20 years of age, single, had less than an 11th grade education, had public health insurance, did not speak English, and lived in a core city. Overall, these data show that provision of these preventive health services in Rhode Island are equal or better among those who have historically been underserved.

AT-RISK NEWBORNS WHO RECEIVED A HOME VISIT BY MATERNAL CHARACTERISTICS, 2006

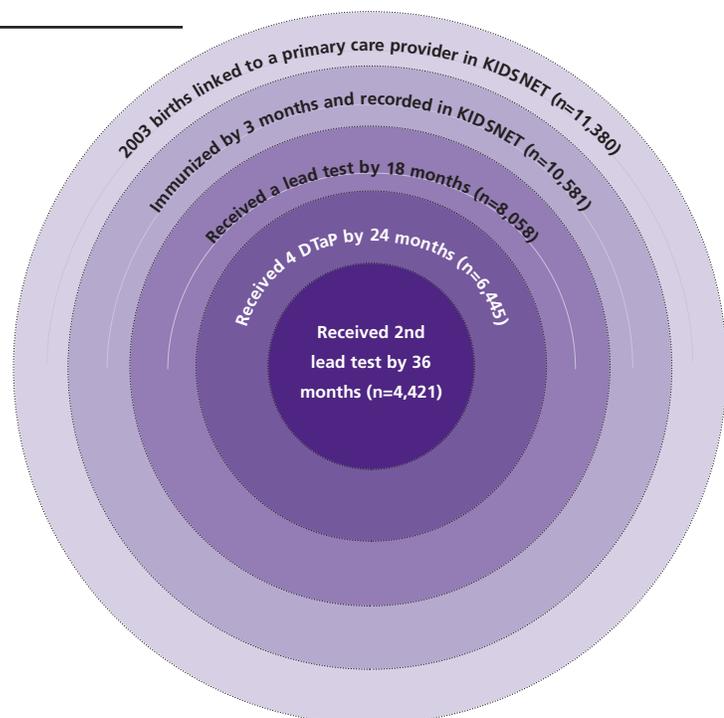


Source: KIDSNET, Rhode Island Department of Health

Timeliness and Completeness of Preventive Healthcare among Rhode Island Children

Timely and complete preventive services are two important attributes of good medical homes. Although overall rates might be relatively high, the rates can be much lower when you look at the number of children receiving a complete set of services by the recommended age. Looking just at immunization and lead screening rates documented in KIDSNET demonstrates this point. Of 12,606 children born in 2003, 11,380 (90.3%) are linked to a primary care provider supplying immunization information to KIDSNET. Of those, 10,581 (93.0%) have an immunization recorded in KIDSNET that was administered before they were 3 months old. More than three-quarters of those children went on to have a lead test by 18 months of age (n= 8,058, 76.2%). 6,445 (80.0%) of those 18 month olds went on to have 4 DTaP vaccinations by their second birthday. Only 4,421 (68.6%) of the two year olds reached the “bulls eye” by being screened a second time for lead poisoning by 36 months of age. Overall, only 38.8% of the original birth cohort with immunization information in KIDSNET reached the “bulls eye” and received all of these selected preventive services in a timely manner. Although this is a conservative estimate since it does not account for underreporting of immunizations to KIDSNET and children who may have moved out of the state, it clearly demonstrates that comprehensive and timely completion of preventive health services remains a challenge.

**2003 BIRTHS OCCURRING AMONG
RHODE ISLAND RESIDENTS IN
RHODE ISLAND HOSPITALS = 12,606**



Using KIDSNET to Facilitate and Monitor Success of Outreach and Referral

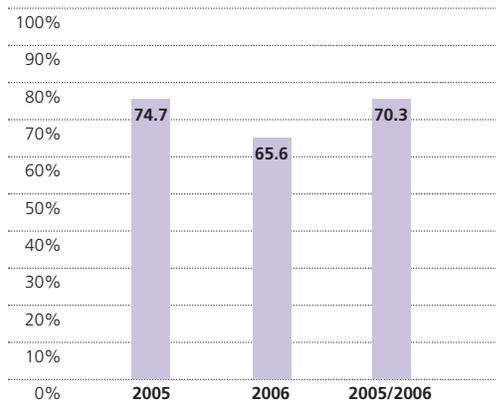
THE FAMILY OUTREACH (HOME VISITING) PROGRAM TEACHES NEW PARENTS ABOUT PROGRAMS AND PREVENTIVE HEALTH SERVICES THAT ARE AVAILABLE IN THEIR COMMUNITY.

All babies born in Rhode Island have a developmental risk assessment at birth. Those with risk factors who reside in Rhode Island are referred to the Family Outreach Program. The Family Outreach (home visiting) Program teaches new parents about programs and preventive health services that are available in their community. Home visitors are trained to understand eligibility criteria for WIC so that they can connect families to this important nutrition program. The Family Outreach Program knows which families they referred and the WIC program knows who is enrolled. Only in KIDSNET, where the data meet, can we

look at how many of the referrals ultimately result in WIC enrollment. In 2005 and 2006, The Family Outreach Program referred 7,594 children to WIC. Of those referred, 70.3% actually enrolled in the WIC program. Those referrals made up 47.6% of all WIC participants during 2005 and 2006. These data show that the Family Outreach Program is a significant referral source for WIC.



PROPORTION OF INFANTS REFERRED BY FOP WHO PARTICIPATE IN WIC, RI 2005-2006



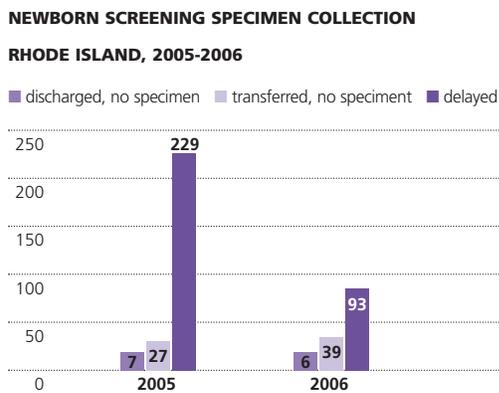
Notes: Number of infants actually enrolled in WIC who were referred by FOP, divided by the total number of infants referred to WIC by FOP

Source: KIDSNET, Rhode Island Department of Health

Using KIDSNET for Quality Assurance

DATA IS MATCHED QUICKLY, IDENTIFYING INFANTS IN TIME AND CONTACTING FAMILIES IN ORDER FOR THE INFANT TO STILL BENEFIT FROM CRITICAL SERVICES.

Rhode Island state law requires that all infants be screened for 29 conditions, including hearing loss. Untreated, these conditions can cause serious health problems, developmental delay, and even death. It is possible to screen for all of the metabolic, endocrine, and hemoglobin conditions by analyzing several small drops of blood collected on a filter paper. Historically, many policies and procedures were in place at hospitals to make sure newborn screening was provided, however it was not possible to identify infants who had missed newborn bloodspot or hearing screening. Today, vital record information from newborn developmental screening and the birth certificate is used to open records in KIDSNET within a few days of birth. This information is compared to the newborn bloodspot and hearing data also sent to KIDSNET. When data are matched quickly, it is possible to identify unscreened infants in time to contact families so that the infant can be screened and still benefit from these critical services. In 2005, the newborn screening program began running a daily quality assurance report to identify children over six days old with no laboratory data in KIDSNET. In 2005, 263 infants did not have a specimen at the lab by their seventh day of life, compared to 138 in 2006. Several reasons identified for missing data were infants being transferred to another hospital without a screen, shipping delays, and true misses where an infant was discharged without being screened. Although the numbers are small and the conditions are rare, the potential for a terrible outcome is of great concern. Newborn screening staff work with hospitals with a goal of eliminating all missing and delayed specimens. Similarly, the newborn hearing screening program began matching birth and screening data in the summer of 2006. In less than half a year, 97 families of infants were contacted and asked to return to the birth hospital for a hearing screening because they had been discharged from the hospital without a hearing screen.



Notes: Data reported are based on 13,486 and 13,179 births occurring in Rhode Island hospitals in 2005 and 2006 respectively.
Source: KIDSNET, Rhode Island Department of Health

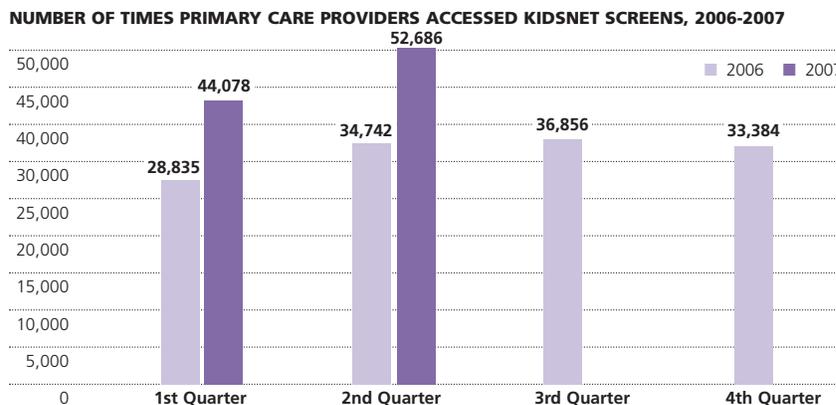
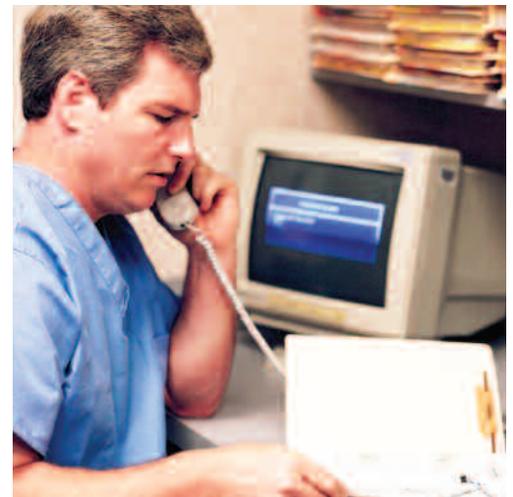


Who is using KIDSNET?

**THE NUMBER OF TIMES
PRIMARY CARE PROVIDERS
ACCESSED SCREENS IN
KIDSNET ROSE OVER 50%
FROM THE FIRST QUARTER
IN 2006 COMPARED TO THE
FIRST QUARTER IN 2007.**

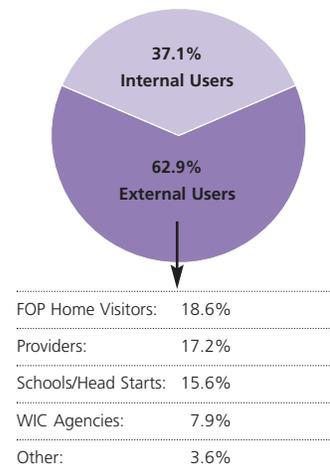
There are many types of users who can benefit from using the data in KIDSNET. There has been an increase over time in both the number of users and how much each user accesses information in KIDSNET. The number of times primary care providers accessed screens in KIDSNET rose over 50% from the first quarter in 2006 compared to the first quarter in 2007. The amount of data available to a given user depends on the user type. Each type of user is only allowed to access data that they have been authorized to look at. For example, school nurses can only access immunization information whereas primary care

providers can view immunization, lead screening, and newborn screening information. Programs also use the data in different ways. For example, the newborn screening programs cross check to assure that every baby has been screened, the WIC program looks up lead screening and immunization information prior to appointments with families, and primary care providers run reports to identify patients in their practice who are behind on services. Following use of KIDSNET over time gives insight into changes in the volume of use as well as the types of users who are benefiting from information in KIDSNET.



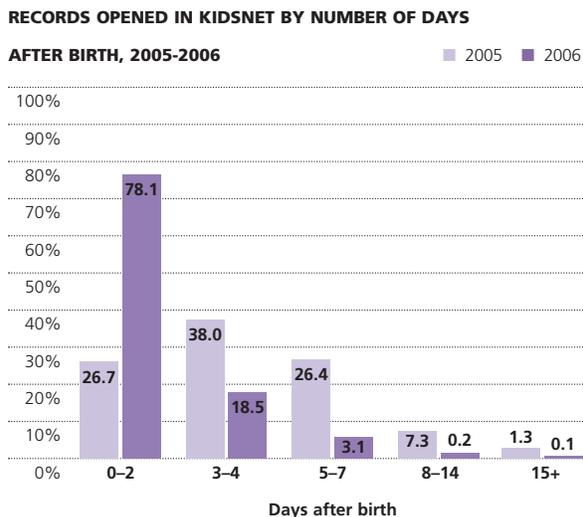
Notes: Number reflects each time a provider looked at a new screen in KIDSNET.
Source: KIDSNET, Rhode Island Department of Health

KIDSNET USAGE BY USER TYPE, 2006

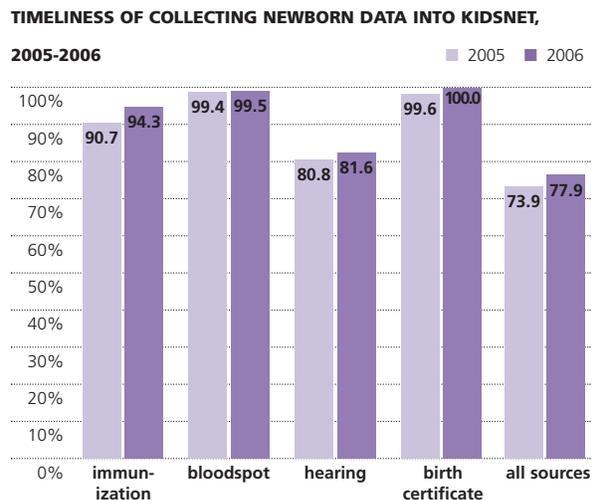


KIDSNET Performance Measures

Complete, accurate, and timely data are important factors that affect the utility of KIDSNET to users. In order to monitor progress towards achieving these goals, KIDSNET has established performance measures. These graphs look at the timeliness of newborn data in KIDSNET. The first graph shows that KIDSNET records are being initiated in KIDSNET very soon after birth and this has improved significantly in recent years. In 2005, only 26.7% of newborn records were opened within 2 days of life and 8.6% were opened after one week of age. In 2006 those numbers improved dramatically, with 78.1% of records opened within the first two days of life and only 0.3% opened after one week. This is a result of integrating the newborn developmental risk assessment data entry with the electronic birth certificate system and timely record initiation in those programs. The second graph shows whether information about preventive services received by newborns is available in KIDSNET before they are 90 days old. Newborn bloodspot and birth certificate information were available for virtually all infants within 90 days of birth. Newborn hearing screening information was available by 90 days for 80.8% of infants in 2005 and 81.6% in 2006. It is anticipated that these figures will jump markedly for 2007 due to new procedures for timely importing of data. Percentages for immunization data availability rose from 90.7% in 2005 to 94.3% in 2006. This improvement may be due to an increased emphasis on providing hepatitis B vaccine at birth and more providers reporting immunization data to KIDSNET. Overall, the percentage of infants with data from all four newborn sources (hearing, bloodspot, birth certificate, and immunization) moved from 74% to 78%.



Source: KIDSNET, Rhode Island Department of Health



Source: KIDSNET, Rhode Island Department of Health

Resources, Bibliography

General Recommendations on Immunization:
Recommendations of the Advisory Committee on
Immunization Practices (ACIP)

(www.cdc.gov/mmwr/PDF/rr/rr5515.pdf)

“Thimerisol in Vaccines: A Joint Statement of the American
Academy of Pediatrics and the Public Health Service”

(www.cdc.gov/mmwr/preview/mmwrhtml/mm4826a3.htm)

KIDSNET website (www.health.ri.gov/family/kidsnet)



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