# Estimation of Measles, Mumps & Rubella immunization coverage in Tikrit district from January 2008 December 2010

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## Abstract

The Measles vaccination is one of most effective vaccine that exist ;one jab is enough to protect for life. It is also thought to be the most cost-effective public health intervention in the world, which is why, it is used as a component of the MMR vaccine to this day. The World Health Organization (WHO) applied the vaccination schedule in major developing countries as follow: Measles vaccine at 9months, single dose of MMR vaccine at 18months & booster dose for ≤59months. In Iraq, after 1990 vaccination coverage declines gradually due to international sanction, no reliable data are available to show current level of immunization coverage. Official reported data in 1990 tends to overestimate coverage. Information on immunization coverage is used for a variety of purposes; to monitor the performance of immunization services at local, national & international levels, an accurate historical representation of immunization coverage is important to assess trends in immunization system performance, to better establish the relationship between immunization service delivery & disease occurrence to provide aframework for setting a future goals for coverage a achievement. A cross-sectional descriptive study done in Tikrit district- Salah aldeen government in Tikrit city. An official agreement taken fro m the manager before starting data collection from the records(from Jan. 2008- Dec. 2010) in department of health protection. Our research study was located in Tikrit district- Tikrit city, which is, the biggest city. The region is heterogeneous. The region still receives a high rate of immigration from different parts of the country. The annual –total population/ year for Tikrit district in Salahaldeen among routine immunization group of (1-2) years old children of MMR vaccination coverage were 67.8%, 127% & during 2008, 2009 & 2010, respectively. There are discrepancy in available data although in 2010 Apr. 0(0%) from total vaccination group & Jun. 716 (109.3%) which exceeds the total number of monthly target coverage rate (602). All the results obtained from MMR vaccination campaigns carried out in salahaldeen government accepted, achieved the goals of MOH This clue a good acceptance for vaccination from the community . There are (may be), some explanation for this discrepancy in that ,most vaccination teams did not scrutinize properly the previous vaccination status of the children, so extra efforts demand to channelize information, education, administration in order to achieve the desired vaccination coverage.

## Introduction

The Measles, Mumps & Rubella (MMR) contributed toof cases especially in developing countries (2,3).In 1988 , the significant degree of mortality & morbidity in developingMRC funded atrial of three-part vaccine for MMR, the results countries (1(The Measles vaccination, which Medical Royallindicated the most suitable age for vaccination early in the College (MRC) in United Kingdom (UK) tested in clinicalsecond year of life-necessary to eliminate the three diseases trial in the 1960s, is one of most effective vaccine that exist;(2,3) administered subcutaneous injection(4).The World one jab is enough to protect for life. It is also thought to beHealth Organization (WHO) applied the vaccination schedule the most cost-effective public health intervention in thein major developing countries as follow: Measles vaccine at world, which is why, it is used as a component of the MMR9months, single dose of MMR vaccine at 18months & booster vaccine to this day. The MRC continue to study the basic biology of the virus with aim of further reducing the number

dose for ≤59months (1,4,5). When MMR vaccine waslevels, an accurate historical representation of immunization introduced in 1988, vaccination uptake rose to above 90% incoverage is important to assess trends in immunization the UK. In 1992, there were fewer than 10 000 notification &system performance ,to better establish the relationship an average of one death from Measles each year in UK (between immunization service delivery & disease occurrence 2).In Umaraniye region of Istanbul a study done in 2006 (6),to provide a framework for setting a future goals for coverage while the population of the researched area nearly 72 000, theaachievement( 10,11,12) Aim of this study to evaluate the immunization coverage was low (79.3%) rate. They explainedcoverage of MMR vaccination in Tikrit district –Salah aldeed the causes as follow: the people being in the village &government-IRAQ FROM Jan2008.-Dec.2010 .Objectives of couldn't reach the health careservices , have no Knowledgethe study are: to identify the proportion of children who have about vaccination, intercurrent illness of child duringMMR vaccination among the target group in Tikrit district, to vaccination time & missed opportunities like not to shave offidentify the coverage rate of MMR vaccination in relation to a vial for only one child(6, 7)In Iraq ,after 1990 vaccinationannual or monthly target of coverage & predict the factors of coverage declines gradually due to international sanction, noun-coverage in relation to the health services.

reliable data are available to show current level of immunization coverage .Official reported data in 1990 tends to overestimate coverage (5). In Tikrit city, astudy done in Tikrit Teaching Hospital , found that the MMR vaccination coverage was (34.5%), their explanation are the number of children below 59months in the family, mother's education & residence behind low rate (5,8)Immunization are a valuable tool for controlling infectious diseases among population in the world (9 )Routine immunization & supplementary immunization activities, such as immunization campaigns are designed to provide immunization coverage to entire population(9, 10)Information on immunization coverage is used for a variety of purposes; to monitor the performance of immunization services at local, national & international

## Subjects & methods

Across-sectional descriptive study done in Tikrit district-Salah aldeen government in Tikrit city. An official agreement taken from the manager before starting data collection from the records(from Jan. 2008- Dec. 2010) in department of health protection.Methods of data collection were obtained according to annual/monthly reports, recording vaccination status , type of vaccine & time of vaccination during each month.Methods of data processing include computer analysis using Microsoft Excel program.Data presentation was implemented by using the line graph, bar chart &tables designed by using the same Microsoftprogram.

## Results

Table (1) shows the annual –total population/ year for Tikrit district in Salah aldeen . The routine immunization group of (1-2) years old children of MMR vaccination coverage were 67.8%, 127% & during 2008, 2009 & 2010, respectively.

**Table (1)** the coverage rate of MMR vaccination in relation to annual target of coverage in Tkrit district

| Year | MMR vaccination coverage Rate (%) |
|---|---|
| 2008 | 67.8 |
| 2009 | 127.2 |
| 2010 | 65.9 |

Figure (1) shows the MMR vaccination coverage in each month in 2008 (both routine &supplementary)immunization activities , it was evidence that no campaign activity, but the immunization services for non –vaccinated dropouts child continued all over year. In February (101%), &July (103%) exceed the total number of the monthly target group rate (623). In March (92%)m October (87%), November (68%). While in December 0(0%) were no services applied for children (12-59)months years old

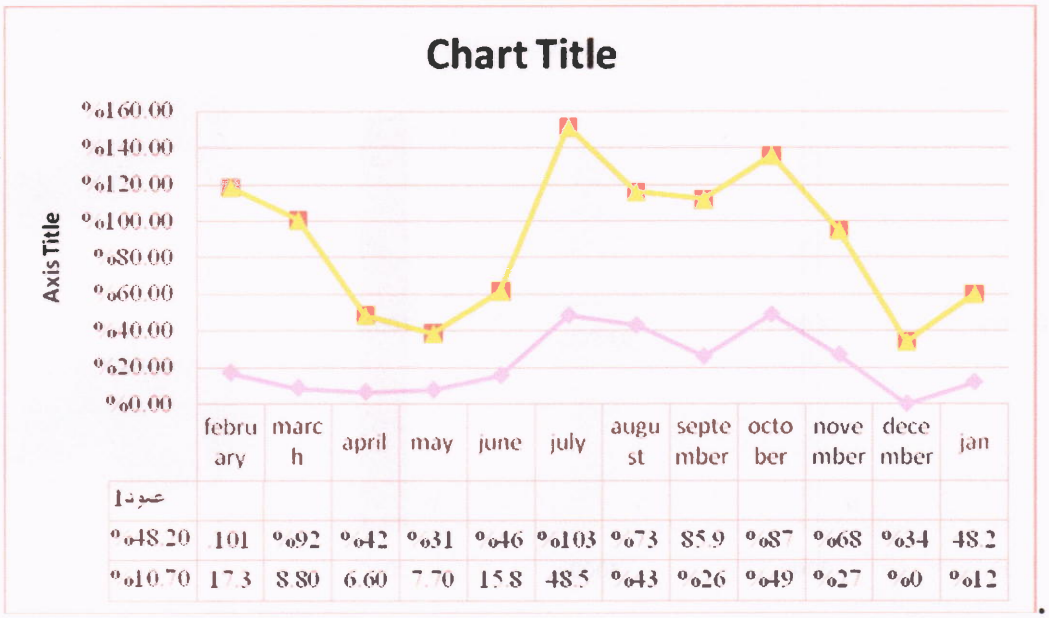


**Figure (1) distribution of what was actually done from the total number of vaccinations in each month in 2008**

Table (2) shows monthly MMR vaccination coverage of routinely immunized children during 2009 &2010. There are discrepancy in available data although in april2010 0(0%) from total vaccination group .In Jun. 716 (109.3%) which exceeds the total number of monthly target coverage rate (602).

**Table (2)** distribution of what was actually done from the total number of vaccination in each month in 2009& 2010

| Months | 2009 | | 2010 | |
|---|---|---|---|---|
| | No. | % | No. | % |
| January | | 71.3 | 510 | 77.9 |
| February | | 76.3 | 655 | 100 |
| March | | 286.9 | 790 | 120.6 |
| April | | 132.7 | 0 | 0 |
| May | | 92.9 | 0 | 0 |
| June | | 109.5 | 629 | 104.4 |
| July | | 111.1 | 450 | 74.7 |
| August | | 112.8 | 342 | 56.8 |
| September | | 102.8 | 383 | 63.6 |
| October | | 129.9 | 385 | 63.9 |
| November | | 124.4 | 249 | 41.3 |
| December | | 157.5 | 475 | 78.9 |

**Figure (2)** shows the MMR vaccination coverage rate with those involved in campaign, it was evident that the campaign achieved the goals of Ministry Of Health.

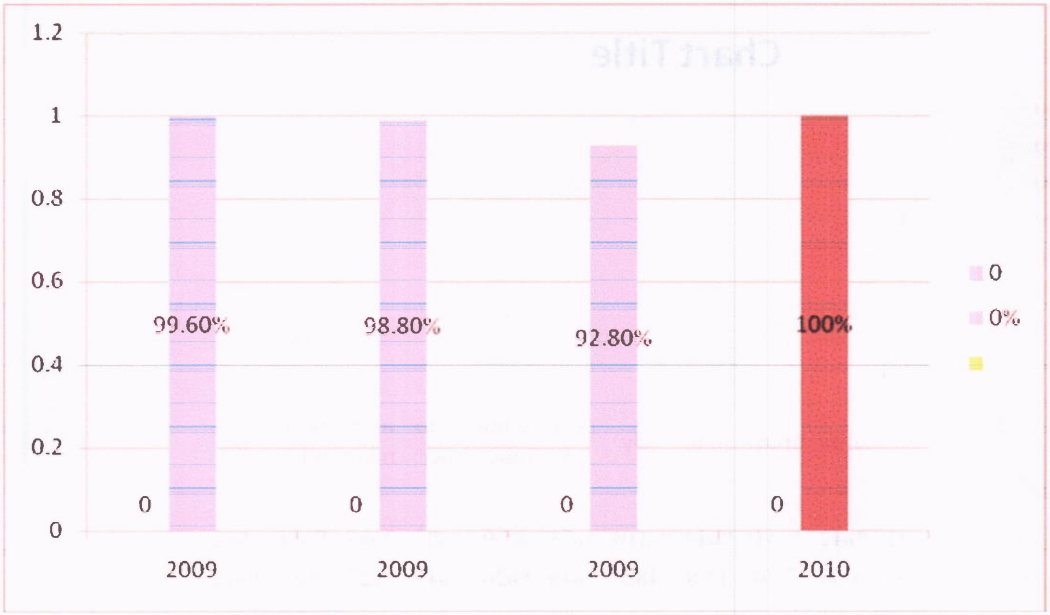


**Figure (2)** the MMR vaccination coverage rate with those involved in campaign (2009& 20100

## Discussion

The situation in Iraq continues to deteriorate markedly ,not just in terms &number of bombs exploding &corpuses being found on the streets, but in terms & the nature of the violence including the brutality of Iraqi on Iraqi violence . This internecine fighting is perhaps the greatest threat to the successful implementation of public health programs& consequently the social, physical & mental health of Iraq is not to forget the basic issue of preservation of some social cohesion upon which a future can be built ( 12,13).

Our research study was located in Tikrit district- Tikrit city, which is, the biggest city. The region is heterogeneous. The region still receives a high rate of immigration from different parts of the country. This district consist of sixteen primary health care centers provide different health care facilities (used as routine vaccination service, maternal & child health & health education ) ( 6,8).Immunization coverage level estimated based on administrative data, service providers( district health center) summarize the number of vaccines given during a time period (usually)monthly & report these data to local public health authorities .the data are reviewed &, where necessary, appropriate action taken( 13,14).In the present study the MMR vaccination coverage in 2008 was low rate (67.8%) , while other study conducted in Iraq by Iraqi Ministry Of Health &organized by WHO in 2007(12) , they found that MMR vaccination coverage were ,(91%) in Salah aldeen& Baghdad (77%).

This may be explained that Tikrit district supported from IMOH performed routine &supplementary (mapping-up) immunization activities all over the years, which leads to coverage estimates, that are often inconsistent with proportion.(10).Agree with study done in UK, MMR vaccination coverage for England & Wales stand at ( 86%) & below (80%) in London) (15). In Istanbul (79.3%)(6), this may implies that there is susceptibility of increased MMR cases locally , but this has not yet been demonstrate statistically .In India studies done for vaccination coverage found in Surate city among (12-23 )months was (49.8%) & (48.3%) in children below 59months, and Kerala state below (10%), they explained the causes as improper cold chain improper technique of administration( 16,17, 18).In 2009 the MMR vaccination coverage was (127%) ,which, exceed the total number of annual target coverage. According to WHO/UNICEF estimates of national immunization coverage found that no 100% coverage , while it is theoretically possible to immunize 100%of target population, esceptially (small country, or be systemic error ascertainment of the numerator or the denominator. The highest level of coverage as 99%) ( 10).Estimation of Global & regional vaccine

country, or be systemic error ascertainment of the numerator or the denominator. The highest level of coverage as 99%) ( 10).Estimation of Global & regional vaccine coverage is based on reports from WHO members state, when coverage figures have not been scheduled but no figure was reported to WHO or the data missing, so assume that coverage's(o%)(10,12).However , the present study found that in Dec. 2008 o(0%), Apr. & May 2010 0(0%) was done from the total number of vaccination, this related to absence vaccine supply to different primary health care centers within Tikrit district.

According to the Global summery of WHO /UNICEF estimates applied ascense of principles reflect immunization system performance :no smoothing, immunization level vary over time & trends, we have not attempted to, no 100% coverage, country specific &evidence based (10, 14).The biggest humanitarian operation in Iraq to give children life long protection against dangerous disease has been successfully completed .These successful immunization campaign which supported by IMOH as part of Iraqi's long term Measles elimination, have to close immunity gap & protect children health , provide through fixed or vehicle born teams provision MMR combined vaccine for (23-49)months old child .All the results obtained from MMR vaccination campaign carried out in salahaldeen governmentaccepted, achieved the goals of MOH This clue a good acceptance for vaccination from the community(13).There are (maybe), some explanation for this discrepancy in that , most vaccination teams did not scrutinize properly the previous vaccination status of the children, so extra efforts demand to channelize information, education, administration in order to achieve the desired vaccination coverage ( 13, 14).

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