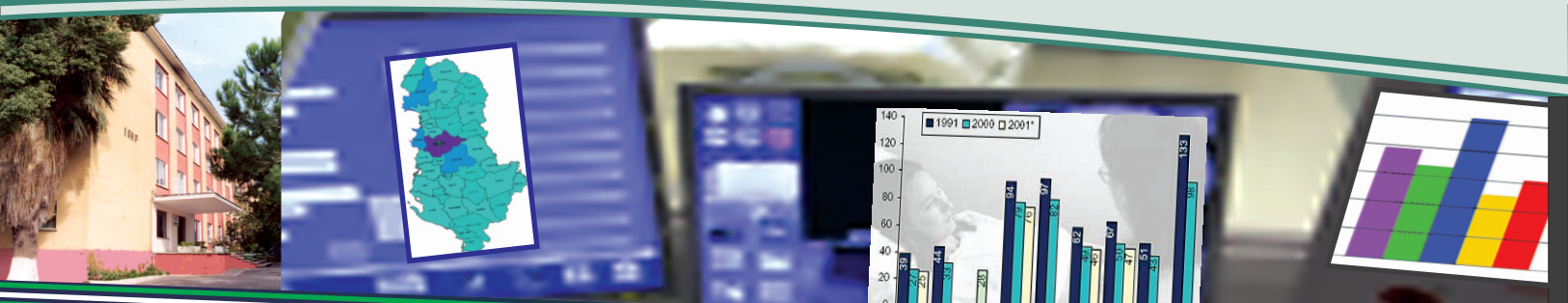
Bulletin

of the Institute of Public Health

INSTITUTE OF PUBLIC HEALTH



No. 3 - 2014

TABLE OF CONTENTS

INSTITUTE OF PUBLIC HEALTH BULLETIN: 3-2014

Epidemiological analysis of infectious diseases morbidity for year-2013

Eugena Tomini, Artan Simaku

Epidemiological analysis of infectious disease situation during 2013 was based on data reported to the Integrated Surveillance System for Infectious Disease (ISSID) in Albania. Those data are collected by Districts Epidemiological Services (DES).

Specifically, those data come from Major Disease-Based Surveillance System (MDBSS) of ISSID through 14-Sh monthly form.

This epidemiological analysis of infectious diseases during 2013 is presented by a briefing summary of all nosologies included in 14-Sh form. From data analysis, it is noticed that respiratory infections are the most common of infectious diseases, followed by diarrheal diseases, which occupied the second place in the total morbidity pattern of infectious diseases. (*Table 1*)

Table 1. Infectious diseases, annual frequency (number of reported cases) and annual Incidence (cases /100,000 population) during 2013.

High Incidence Middle Incidence Low Incidence

Infectious Diseases	No. Of Total Cases	Incidence 2013 (cases /100.000 inhabitants)
Common Cold (Syndrome flulike)	66,749	2,175.80
Gastroenteritis non-specified	63,438	2,067.90
Flu	53,215	1,734.70
Toxic-infection alimentary	2,881	93.9
Varicocele	890	29
Pediculosis	706	23
Endemic Dermatophytosis	483	15.7
Scabies	474	15.5
Salmonellae non-typhoid	367	12
Brucellosis	301	9.8

Infectious Diseases	No. Of Total Cases	Incidence 2013 (cases /100.000 inhabitants)
Common Cold (Syndrome flulike)	66,749	2,175.80
Gastroenteritis non-specified	63,438	2,067.90
Flu	53,215	1,734.70
Toxic-infection alimentary	2,881	93.9
Varicocele	890	29
Pediculosis	706	23
Endemic Dermatophytosis	483	15.7
Scabies	474	15.5
Salmonellae non-typhoid	367	12
Brucellosis	301	9.8
Shigellosis (Dysentery Bacillary)	277	9
TBC pulmonary	223	7.3
Erysipelas	189	6.2
Scarlatti	176	5.7
Hepatitis viral B	148	4.8
Hepatitis viral non-specified	98	3.2
TBC Extra-pulmonary	58	1.9
Hepatitis Viral as A as B	57	1.9
Anthrax	45	1.5
Bacterial non-meningococcal meningitis	29	0.9
Leishmaniose viscerale	24	0.8
Epidemic Parotitis	20	0.7
Meningitis viral (aseptic)	20	0.7
Malaria	19	0.6
Hepatitis viral A	18	0.6
Miliary Tuberculosis	14	0.5
Leptospirosis	16	0.5
Encephalitis non-specified	11	0.4
Rickettsia -other	9	0.3
Primary Syphilis	9	0.3
Viral Hemorrhage Fever	6	0.2
Pertussis	6	0.2
Bacterial-Meningococcal meningitis	5	0.2
Syphilis Secondary non-specified	5	0.2
HIV /AIDS	5	0.2
Abdominal typhoid	4	0.1
Paratyphoid	2	0.1
Leishmaniasis cutaneous	2	0.1

Infectious Diseases	No. Of Total Cases	Incidence 2013 (cases /100.000 inhabitants)
Syphilis latent	3	0.1
Tetanus (non-neonatal)	1	0.03
PFA-Paralyzes non-specified	1	0.03
Amebic Dysentery	1	0.03
Encephalitis post-vaccination	1	0.03
Gonorrhea	1	0.03
Plague	0	0
Cholera	0	0
Jaundice	0	0
African Hemorrhagic Fever (Ebola)	0	0
Exanthematic Typhoid	0	0
Recurrent epidemic fever	0	0
Epidemic Viral Encephalitis	0	0
Tickborne Viral Encephalitis	0	0
Dengue Fever	0	0
Rabies	0	0
Botulism	0	0
Lepper lepromatous	0	0
Leper tuberculosis	0	0
Diphtheria	0	0
Tetanus neonatal	0	0
PFA-Poliomyelitis	0	0
Listeria	0	0
Measles	0	0
Rubella	0	0
Meningitis tubercular	0	0
Endemic murine typhus	0	0
Boutonneuse Fever	0	0
Q Fever	0	0
Blenorragia	0	0
Tularemia	0	0
Ankylostomiase	0	0
Echinococcosis	0	0
Trichinosis	0	0
Legionellose	0	0

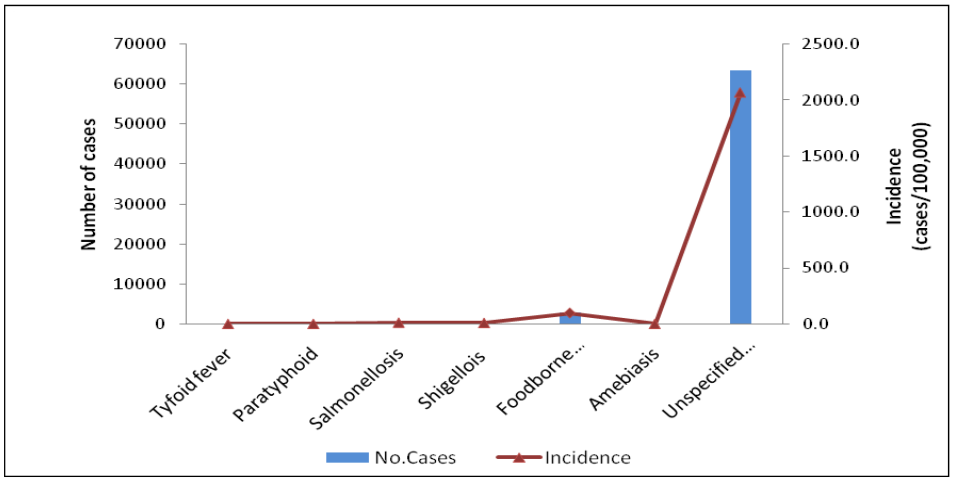
Some data are given below on the recorded epidemiological situation, collecting infectious diseases into various groups according to their nature:

Diarrheal diseases

During 2013, the total number of recorded diarrheal disease was of 66,970 (2,183.04) cases. At annual frequency (case number) and incidence rate (cases for 100.000 population) for diarrheal disease, unspecified gastroenteritis is in the first place with 63,438 (2,067.9) cases, followed by foodborne intoxication 2,881(93.9) cases and non typhoid salmonellosis, 367 (12.0) cases. (*Table 2 & Figure 2*)

Table 2 and Figure 1. Diarrheal diseases, annual frequency (number of reported cases) and annual Incidence (cases /100,000 population) during 2013.

Year 2013	Typhoid fever	Para typhoid	Salmonellosis (non-typhoid)	Shigellosis	Foodborne intoxication	Amebiasis	Unspecified Gastroenteritis	Total cases
Cases	4	2	367	277	2,881	1	63,438	66,970
Incidence (cases/100.000 population)	**0.1**	**0.1**	**12.0**	**9.0**	**93.9**	**0.03**	**2,067.9**	**2,183.04**



Viral hepatitis

The 14/Sh form of the statutory MDBSS contains, along with the unspecified viral hepatitis, the basic types of viral hepatitis (viral hepatitis A, viral hepatitis B, viral hepatitis non A non B)

During 2013, viral hepatitis was recorded in a total of 321 cases (10.5), and among other hepatitis, viral hepatitis of type B was of the biggest specific weight, 148 (4.8), followed by unspecified viral hepatitis, 98 (3.2) cases. (*Table 3*)

Table 3. Viral hepatitis, annual frequency (number of reported cases) and annual Incidence (cases /100,000 populations) during 2013.

Year 2013	Unspecified viral hepatitis	Viral hepatitis A	Viral hepatitis B	Viral hepatitis non- A non- B	Total
Cases	98	18	148	57	321
Incidence (cases/100.000 population)	**3.2**	**0.6**	**4.8**	**1.9**	**10.5**

Airborne infectious diseases

The epidemiological surveillance data of each airborne infectious disease on respective annual frequency (number of cases) and incidence (cases per 100,000 populations) are presented in detail in table 4. It is evident that influenza is of major weight among the airborne infectious diseases for the annual number of reported cases.

It should be stressed that some infectious diseases such as: measles, rubella, mumps, pertussis and diphtheria, are preventable by vaccination (National Programme on Immunization) (*Table.4*)

Table 4. Airborne infectious diseases, annual frequency (number of reported cases) and annual Incidence (cases /100,000 population) during 2013.

Airborne infectious diseases	Cases	Incidence 2013 (cases /100,000 population)
Measles	0	**0.0**
Rubella	0	**0.0**
Mumps	20	**0.7**
Pertussis	6	**0.2**
Diphtheria	0	**0.0**
Chickenpox	890	**29.0**
Scarlet fever	176	**5.7**
Erysipelas	189	**6.2**
Meningococcal Meningitis	5	**0.2**
Other meningitis	49	**1.6**
Influenza	53,215	**1,734.7**
Total cases	54,550	**1,778.2**

Tuberculosis

According to data reported to 14-sh form for infectious diseases, a total of 295 tuberculosis cases were reported during 2013. The greatest number of cases was that of pulmonary tuberculosis, 223 (7.3) cases, followed by extrapulmonary tuberculosis and miliary tuberculosis, with respectively 58 (1.9) and 14 (0.5) cases. (*Table.5*).

Table 5. Tuberculosis, annual frequency (number of reported cases) and annual Incidence (cases /100,000 populations) during 2013.

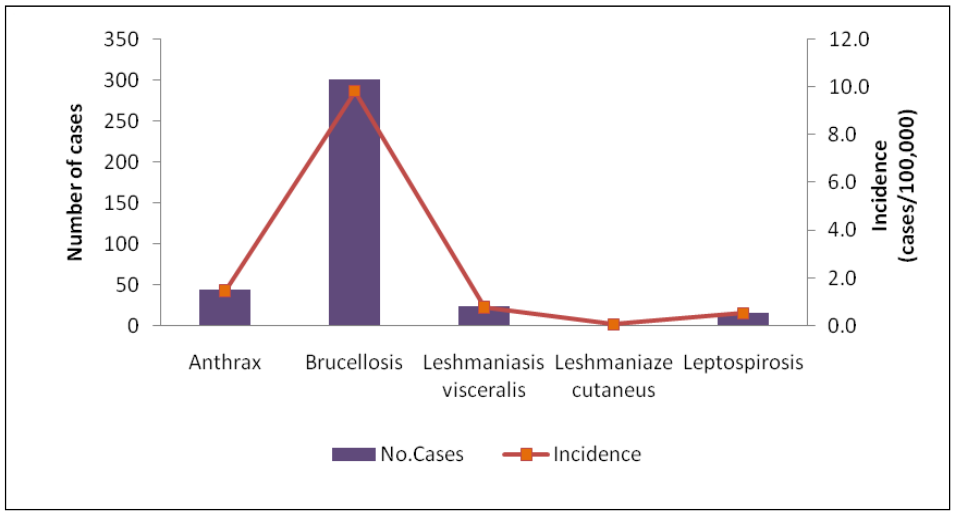
Year 2013	Pulmonary TB	Extrapulmonary TB	Miliary TB	Total number of cases
Cases	223	58	14	295
Incidence (cases/100.000 population)	**7.3**	**1.9**	**0.5**	**9.6**

Zoonosis

The epidemiological surveillance data for 4 following zoonoses show an annual frequency with the predominance of brucellosis in a total of 301 cases during 2013, followed by anthrax with 45 cases, with a low level of cutaneous and visceral leshmaniasis with a total of 26 cases and leptospirosis 16 (0.5) cases. (*Table 6 & Figure 6).*

Table 6 and Figure 2. Zoonoses, annual frecuency (number of reported cases) and annual Incidence (cases /100,000 population) during 2013.

Year 2013	Anthrax	Brucellosis	Leishmaniasis, visceral	Leshmaniasis, cutaneus	Leptospirosis
Cases	45	301	24	2	16
Incidence (cases/100.000 population)	**1.5**	**9.8**	**0.8**	**0.1**	**0.5**



The rickettsial diseases

The rickettsial diseases are subject of mandatory reporting of MDBSS for infectious diseases as shown at following table. Meanwhile the unspecified rickettsioses represents the majority of annual rickettsioses reported cases 9 (0.3) during 2013. (*Table 7*)

Table 7. The rickettsial diseases, annual frequency (number of reported cases) and annual Incidence (cases /100,000 population) during 2013.

Year 2013	Murine typhus	Boutonneuse fever	Q fever	Other rickettsioses	Total cases
Cases	0	0	0	9	9
Incidence (cases/100.000 population)	**0.0**	**0.0**	**0.0**	**0.3**	**0.3**

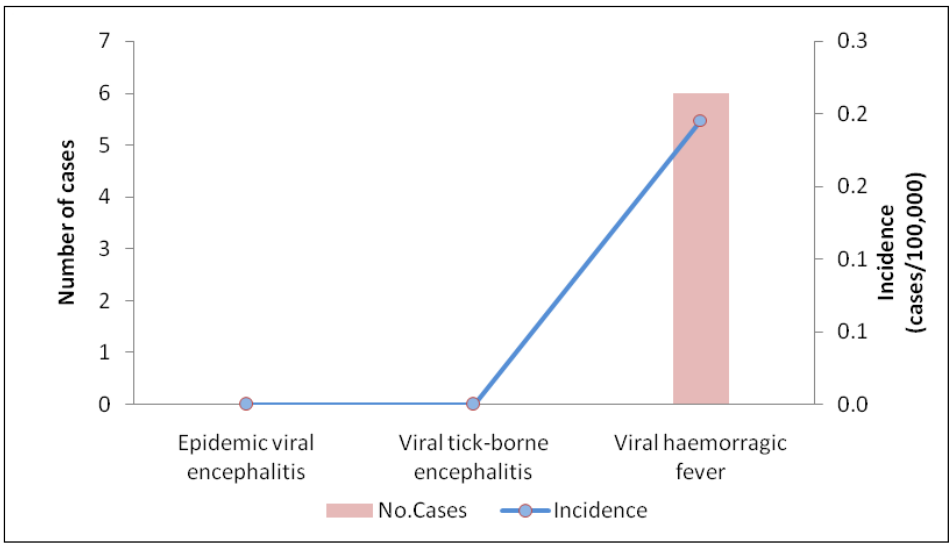
Infectious diseases with natural foci

The number of Infectious diseases with natural foci is very large, although plague, yellow fever, dengue fever and relapsing fever are not present in Albania, being all the same subject of our MDBSS. It should be highlighted that other infectious diseases with natural foci like leishmaniasis, most of rickettsioses and malaria are part of this group, but they are treated as a specific part of this material.

As it is shown at the table below, 6 (0.2) cases were confirmed with viral haemorrhagic fever from epidemiological surveillance data during 2013.
3 cases were confirmed with Crimean-Congo Haemorrhagic fever and other 3 cases were confirmed with Hantan Haemorrhagic fever. CCHF cases have occurred in districts of Hasi and Kukesi at the age-groups of 35-40 years (1 case), 50-54 years (1 case) and 60-64 years (1 case).
Hantan Haemorrhagic Fever cases have occurred in districts of Korca and Kavaja at the age-groups of 20-24 years (1 case), 30-34 years (1 case) and 50-54 years (1 case). (*Table 8 & Figure 8*)

Table 8 and Figure3. Infectious diseases with natural foci, annual frequency (number of reported cases) and annual Incidence (cases /100,000 population) during 2013.

Year 2013	Epidemic viral encephalitis	Viral tick-borne encephalitis	Viral haemorrhagic fever
Cases	0	0	6
Incidence (cases/100.000 population)	**0.0**	**0.0**	**0.2**

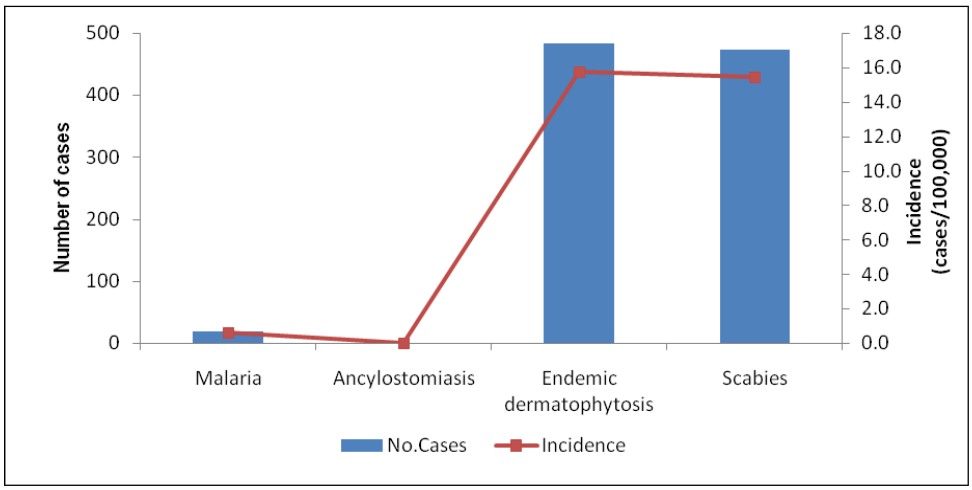


Parasitic infectious diseases

Malaria, Endemic dermatophytosis, Scabies and Ancylostomiasis represent the parasitic infectious diseases reported in the 14/sh form. The epidemiological surveillance data concerning the annual frequency (number of reported cases) and incidence (cases per 100,000 population) with the predominance of endemic dermatophytosis in a total of 483 (15.7) cases, an ongoing endemic circulation in our country followed by scabies with 474 (15.5) cases. Regarding the total number of reported malaria cases, there are no autochthonous cases. All cases 19 (0.6) are imported by the mobility of the population abroad in particular to areas where malaria is present in endemic form. But, mobility of the population abroad and presence of Anopheles mosquitoes in Albania are factors that increase the chances for new malaria possible outbreaks in our country. *(Table 9 & Figure 9)*

Table 9 and Figure 4. Parasitic infectious diseases, annual frequency (number of reported cases) and annual Incidence (cases /100,000 population) during 2013.

Year 2013	Malaria	Ancylostomiasis	Endemic dermatophytosis	Scabies
Cases	19	0	483	474
Incidence (cases/100.000 population)	**0.6**	**0.0**	**15.7**	**15.5**



Acute Flaccid Paralysis (AFP)

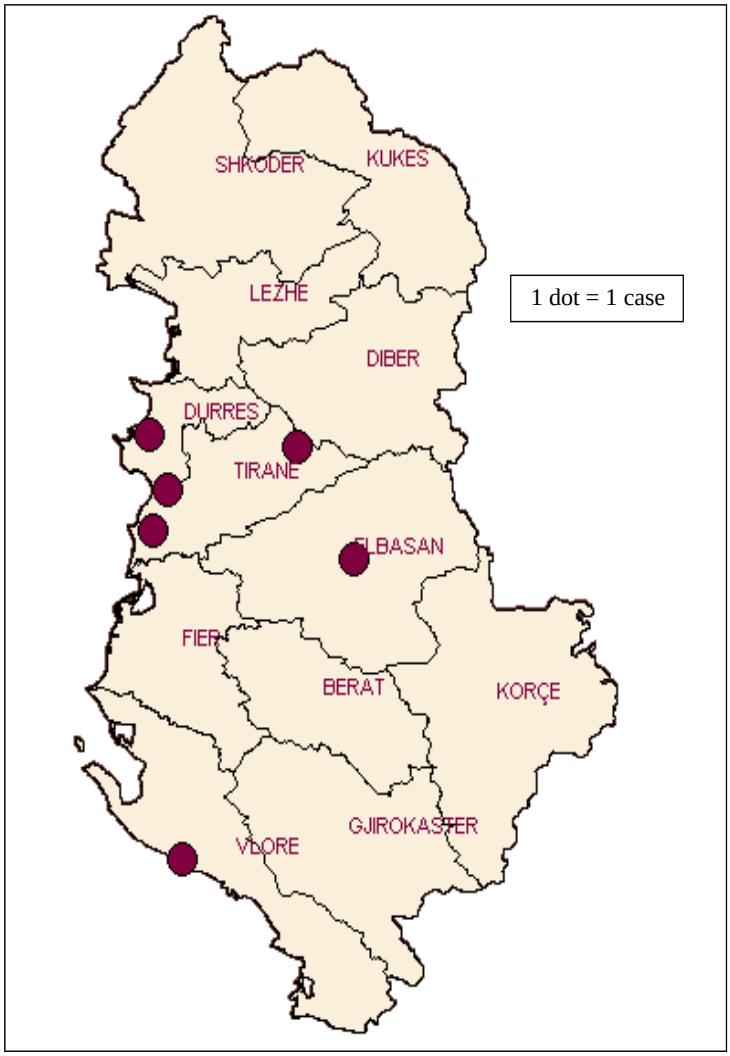
The data are based on the Case-Based surveillance of AFP-s (with laboratory confirmation of the case).

Through Case-Based Surveillance of PFA for 2013, 6 out of 9 cases were reported, pertaining to the population of children 0-14 years of Albania.

3 of the cases are from the district of Tirana, 1 case is from the district of Durres, 1 case from the district of Vlora and one case from Librazhdi district. The age of children ranged from 3 months to 12 years.

Epidemiologic investigation was carried out immediately upon notification and two stool samples were collected from all patients for virological examination in the laboratory of virology at IPH and also, vaccination status of children was verified. Laboratory examination was negative for polio virus.

Map 1. Districts where cases of AFP were detected



Measles and Rubella

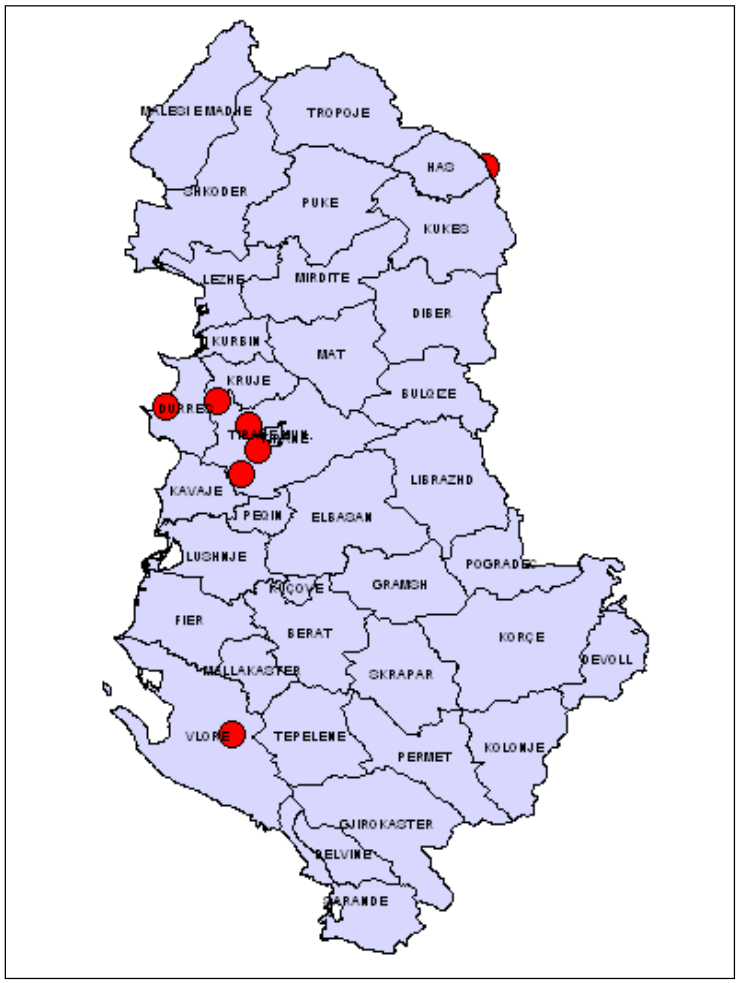
The data are based on the Case-Based surveillance of Measles and Rubella (with laboratory confirmation of the case).

Through Case-Based Surveillance of Measles and Rubella for 2013, 6 suspected for measles cases were reported.

4 of the cases were from the district of Tirana, 1 case is from the district of Durres, 1 case from the district of Vlora.The age of children was from 3 months to 3 years.

Epidemiologic investigation was carried out immediately upon notification. Blood samples were collected from all patients for serological examination in the laboratory of virology at IPH and vaccination status of children was also verified. Laboratory examination was negative for IgM antibodies against measles and rubella.

Map 2. Districts where measles suspect cases were detected



ALERT – Syndromic Surveillance in 2013

- Reporting performance of ALERT Surveillance in 2013

- Ways of sending the Alert forms have been:
  by Electronic mail: 33 districts, or 92% (= 33/36) of the total;
  by fax, mail, telephone: 3 districts, or 8% (= 11/36) of the total;

- Weekly levels of districts reporting to IPH

  Districts that have reported levels above 90% for each week are:
  36 districts or 100% (= 33/36) of the total,

- Weekly Reporting on time by districts to IPH

- Districts with over 90% of the time reported weeks are:
  36 districts or 100% (= 36/36) of the total,

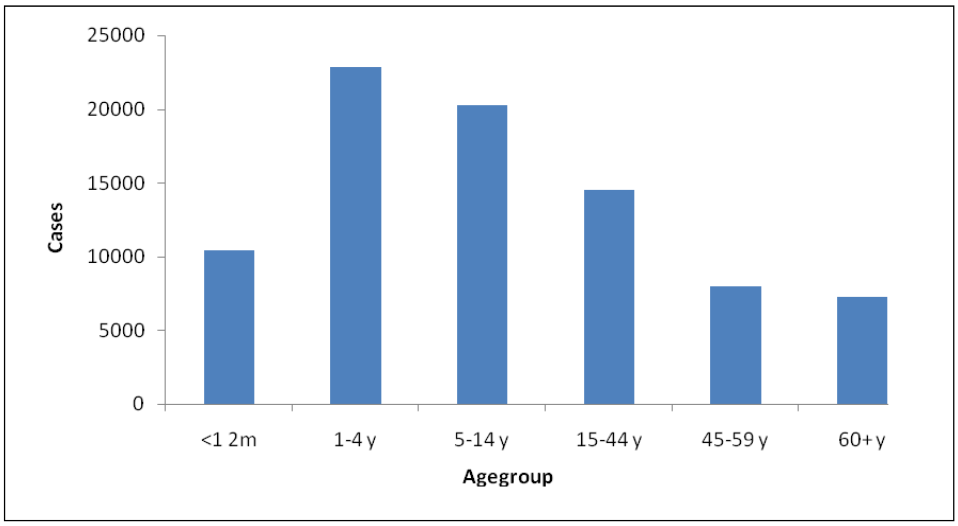
- The weekly level of reporting by Reporting Units (Health Centers) Epidemiological Service District to Districts, which have reported over 90% of health centers are:
  27 districts or 75% (= 27/36) of the total,
  Lezhe, Puke, Berat, Mat, Lushnje, Shkoder, Bulqize, Delvine, Devoll, Diber, Durres, Elbasan, Fier, Gramsh, Gjirokaster, Has ,Kolonje, Korçe,Kuçove, Kurbin, Librazhd, Mirdite, Pogradec, Sarande, Skrapar, Tirane, Vlore.

- Districts that reported for 60%-90% of health centers are:
  9 districts or 25% (= 9/36) of the total,
  Tepelene, Permet, Tropoje, Kruje, M. Madhe, Peqin, Kukes, Kavaje,Mallakaster.

Table 10. Distribution of syndromes reported by age group. The absolute number of cases

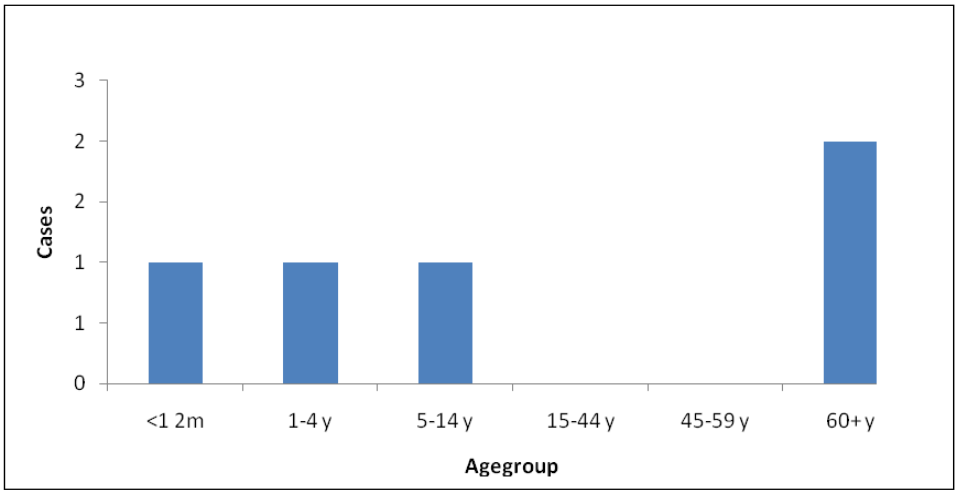
Syndromes	*<1 2m*	*1-4 y*	*5-14 y*	*15-44 y*	*45-59 y*	*60+y*	*TOTAL*
DIARRHEA WITHOUT BLOOD	10442	22868	20225	14520	8004	7244	**83304**
DIARRHEA WITH BLOOD	1	1	1			2	**8**
UPPER RESPIRATORY INF.	42646	113208	121610	52067	26146	25496	**381173**
LOWER RESPIRATORY INF.	22209	49226	49386	25412	23528	36812	**206572**
RASH WITH FEVER	14	99	116	8	0	1	**238**
JAUNDICE		4	2	1	2	1	**10**
HEMORRHAGE WITH FEVER							
SUSPECTED MENINGITIS			1			1	**2**
UNEXPLAINED FEVER				2	5	4	**11**
TOTAL	75313	185406	191341	92009	57685	69561	**671318**

Figure 5. Distribution of syndrome "Diarrhea without blood" by age-group



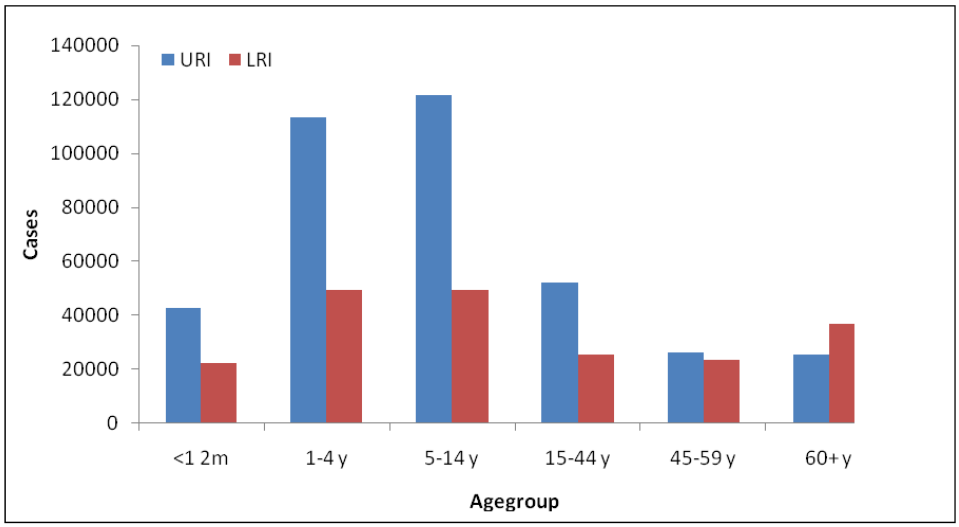
The largest number of cases was observed in the pediatric age group 0-14 years, which counts for 64.3% of total cases. Also, this age group had the highest incidence compared with ages > 14 years. The most common entity of diarrhea with blood is unspecified gastroenteritis, followed by foodborne intoxication and non typhoid Salmonellosis.

Figure 6. Distribution of syndrome "Diarrhea with blood" by age group



One case was reported in each of the age groups, while two cases have been reported in the age group 60 + years. It was noted from 14/Sh form data the most frequent nosology of diarrhea with blood was shigellosis.

Figure 7. Distribution of syndrome "Upper and lower respiratory infections" by age group



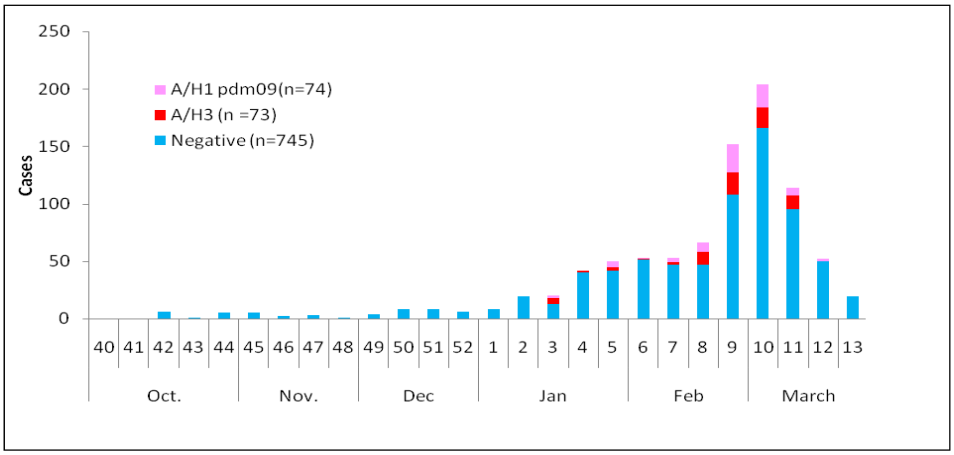
The largest number of cases was observed in the pediatric age group 0-14 years with 67.8% of total cases.

Also,to this age group pertains the highest incidence compared with ages> 14 years.

Surveillance Of Influenza And Severe Acute Respiratory Illness (SARI). Season 2013 -2014

Information on specimens collected from patients suspected for Influenza sent to Institute of Public health (IPH)

Figure 8. The number of specimens collected by week and laboratory results



From the third week of October 2013 until 24th March 2014 901 specimens were sent to IPH from patients suspected with influenza. The number of specimens has increased during February, 389 (43%) out of the total, and the rate of positive findings has also increased during this month.

Figure 9. The trend of positive specimens sent to IPH (% of positive specimens out of the total by week)

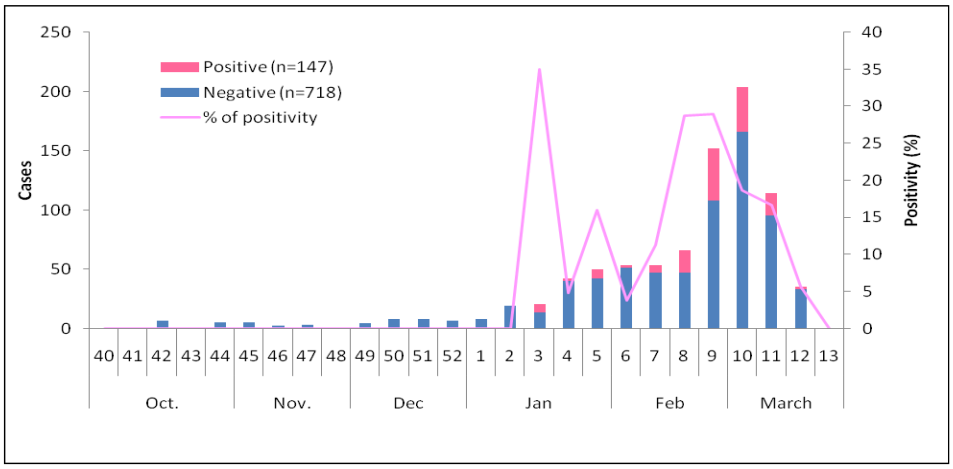
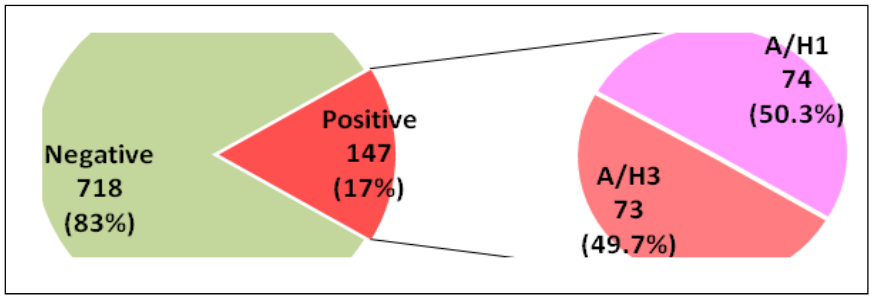
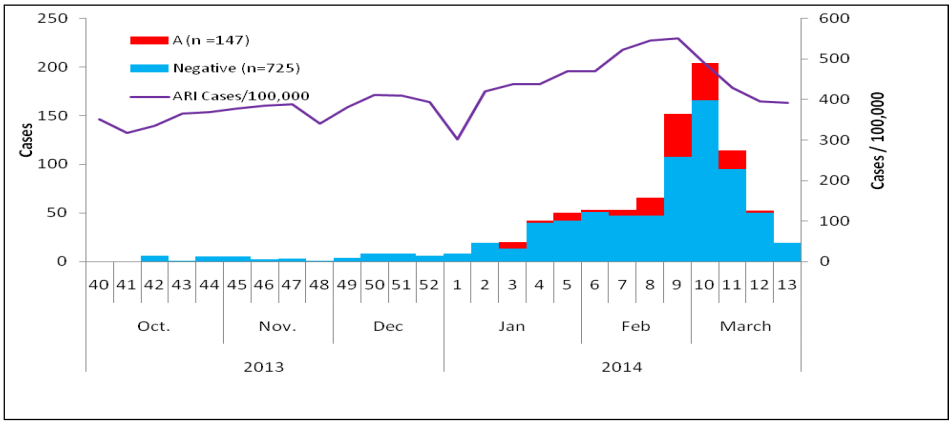


Figure 10. Distribution of cases according to laboratory result



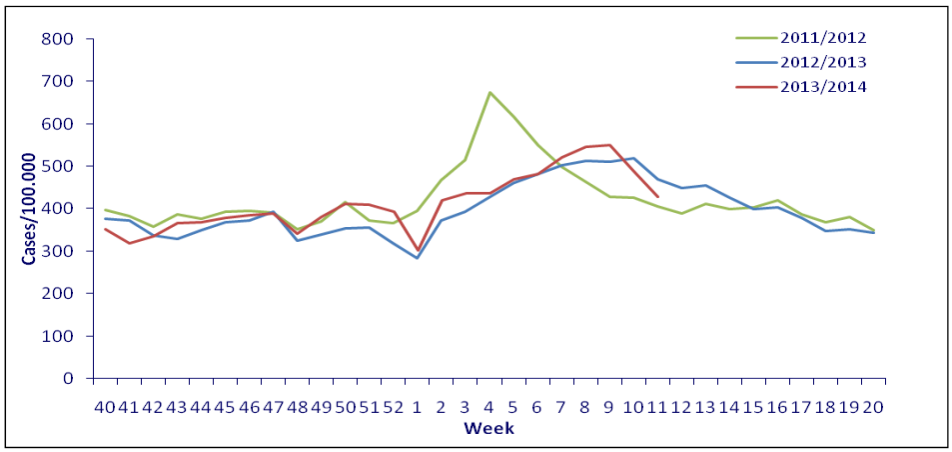
Overall, 147 (17%) specimens tested positive for influenza viruses
73 (49.7%) tested positive for A/H3 virus
74 (50.3%) tested positive for A/H1 pdm09 virus

Figure 11. Epidemic curve and respiratory infections by week (ARI cases/100.000) until week 12 (23 March 2014)



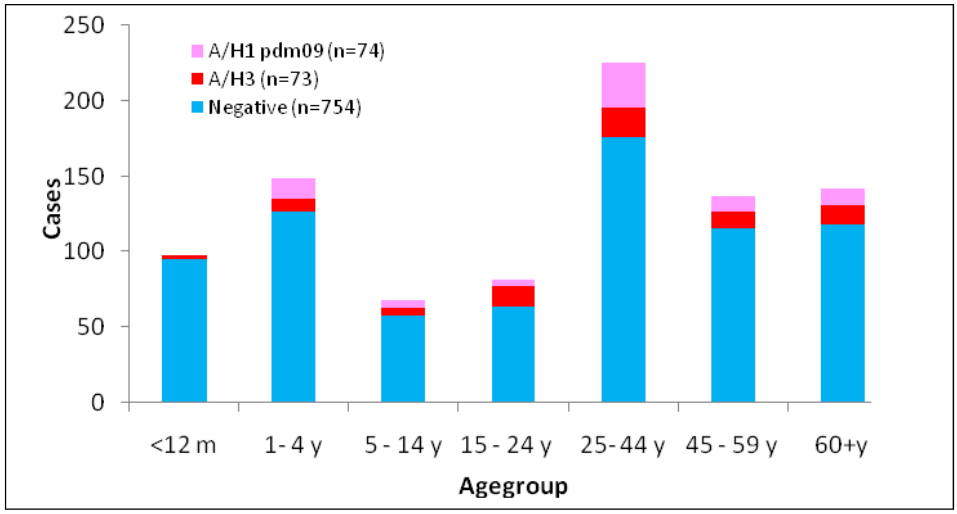
Note the acute respiratory infection's curve following the increasing trend in number of cases suspected and/or confirmed for influenza.

Figure 12. Comparison of the seasonal activity of "Upper and Lower Respiratory Infections" (weeks 4 0 – 20) and Epidemic threshold. Cases/100,000



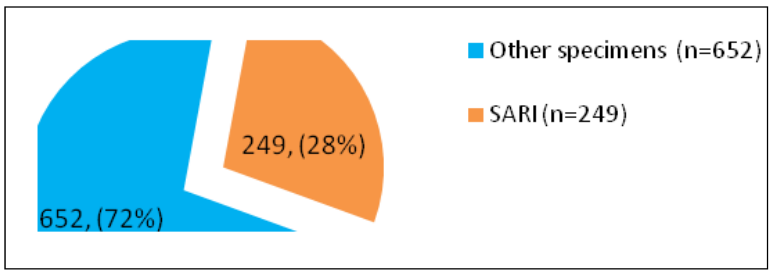
The number of respiratory infections (upper and lower) is at a normal level of seasonal activity

Figure 13. Distribution of cases by age group



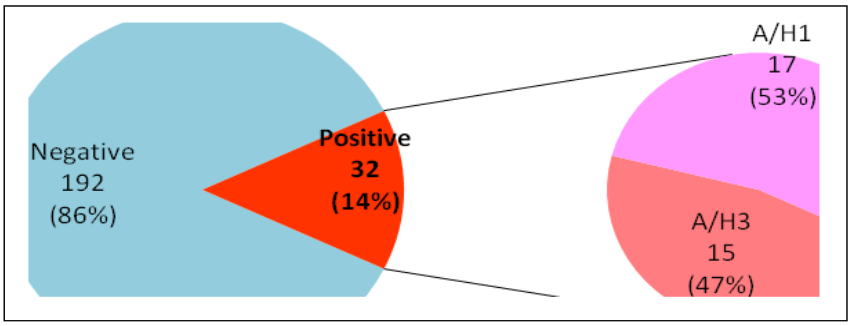
Note that the largest number of specimens is collected in the age group 1-4 years with 146 (17%), and in the age group 25-44 years with 217 (25%) specimens.
Most affected age groups are 15-24 years old with 17 (23%) positive specimens, 25 to 44 years with 49 (23%) and 60 + years age group with 24 (18%) positive specimens out of the total respective age groups.

Figure 14. Severe Acute Respiratory Illness (SARI)



224 (26%) of patients suspected for Influenza manifested complications (SARI)

Figure 15. Laboratory result of SARI specimens

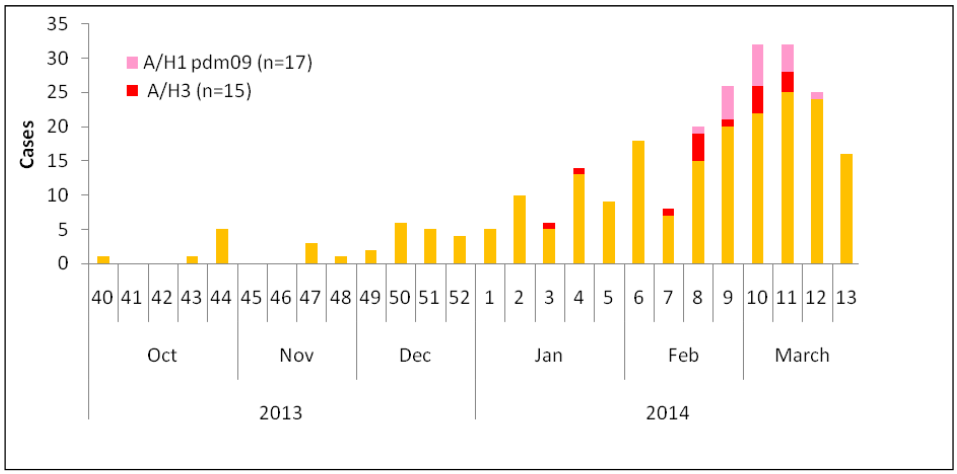


SRRA 32 of 224 samples (14% of them) tested positive for influenza viruses.

15 (47%) of positive samples resulted with virus A/H3 and
17 (53%) positive samples with virus A/H1 pdm09

Out of 224 SARI specimens, 14% tested positive for Influenza viruses.
15 (47%) of positive specimens were A/H3 virus infected, and
17 (53%) of positive specimens were A/H1 pdm09 virus infected

Figure 16. Distribution of SARI cases by week of reporting and laboratory results



It is noted that most of the SARI specimens, 82 or 37% of them were collected in March and during this month were also confirmed 18 (56%) of the total of 32 positive samples.
Also, SARI specimens were tested for other respiratory viruses. 7 (1%) of the specimens tested positive for respiratory sincicial virus (RSV) and 1(0.1%) specimen for human metapneumovirus. (HMPV).

Figure 17. The trend of SARI positive specimens (% of positive specimens out of the total, by week)

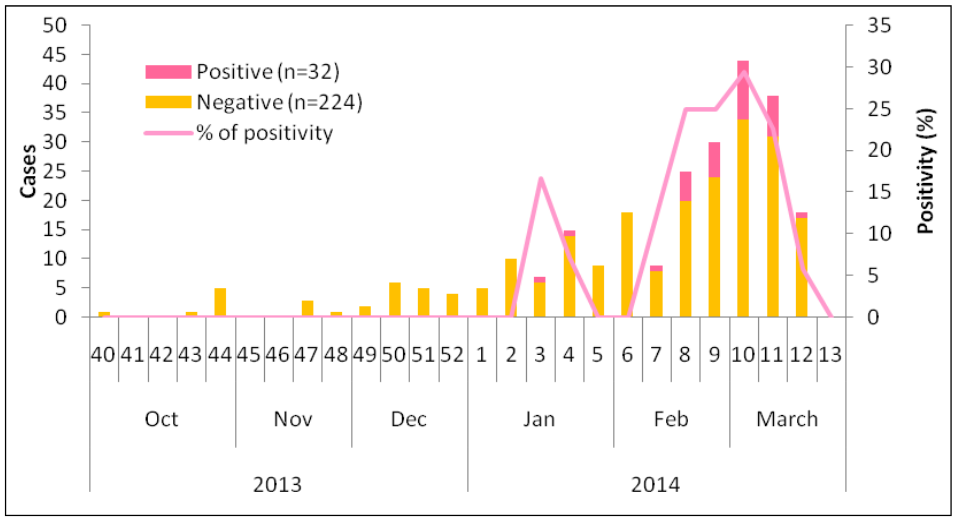
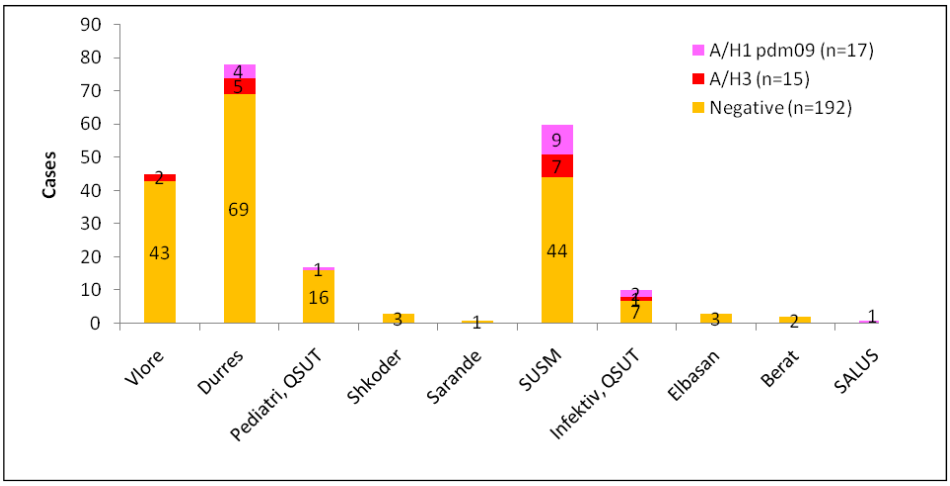
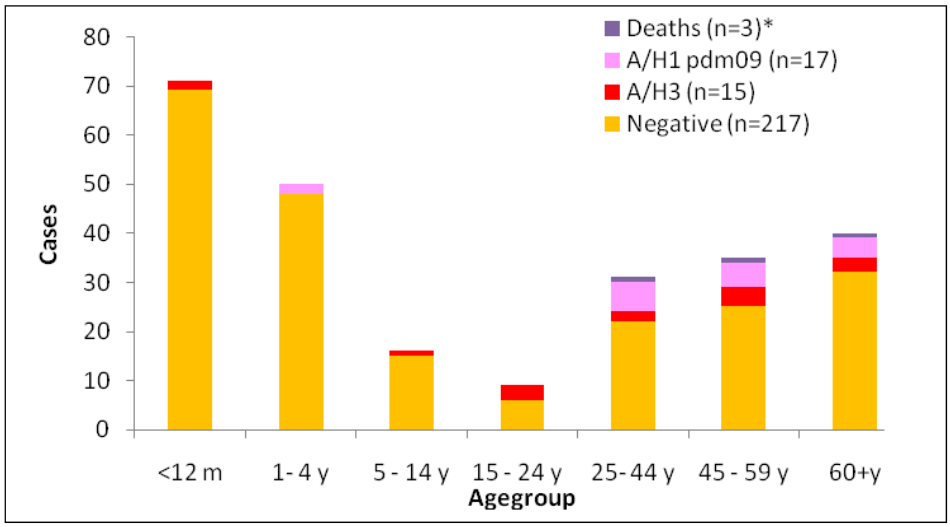


Figure 18. The site of collection of specimens from SARI patients



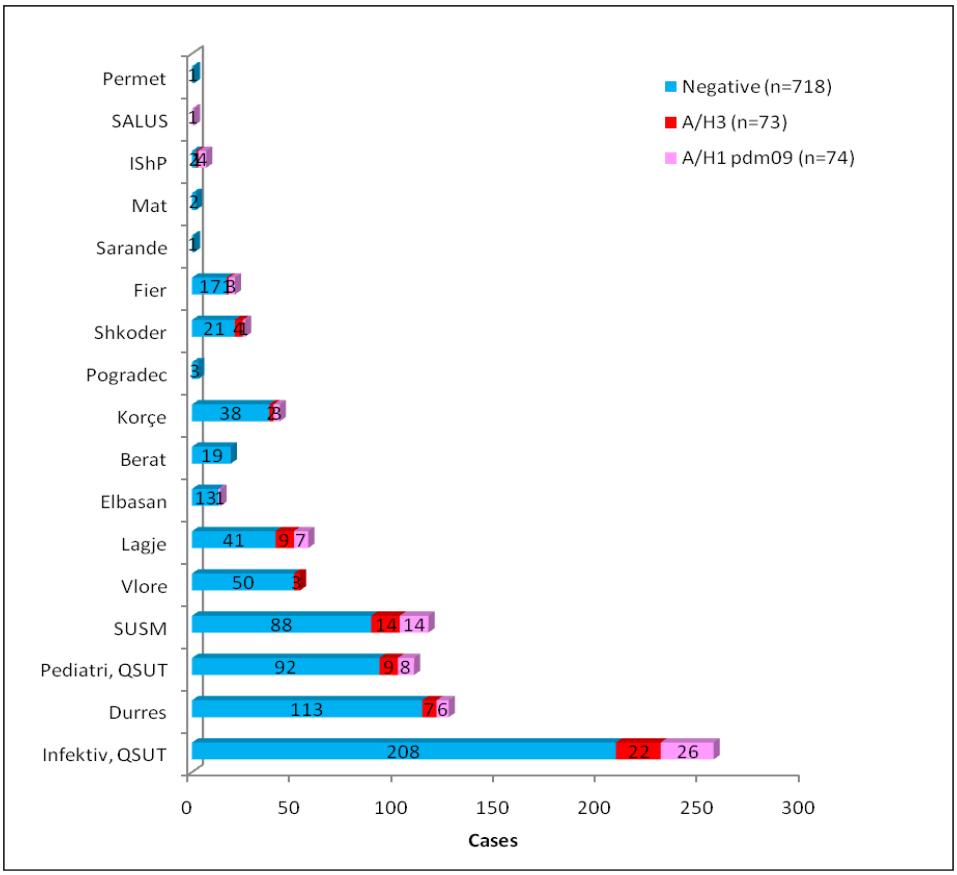
It is noted that most of the SARI specimens were taken at Regional Hospital of Durres, 78 samples(35%), Lung Diseases Hospital, 60 samples (27%) and Vlora regional hospital 45 samples (20%).

Figure 19. Distribution of SARI cases by age group



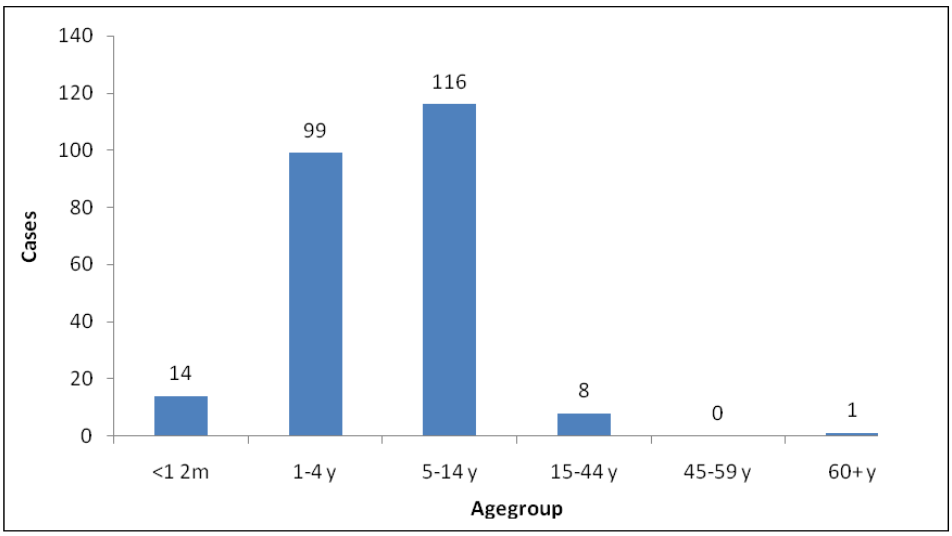
It is noted that 128 (57%) of SARI cases belong to pediatric age group 0-14 years, with their dominance in the age group <12 m with 65 cases or 29%, followed by the 1-4 years age group with 47 cases or 21% of total SARI cases.

Figure 20. The total number of specimens and laboratory result by each site of sampling.



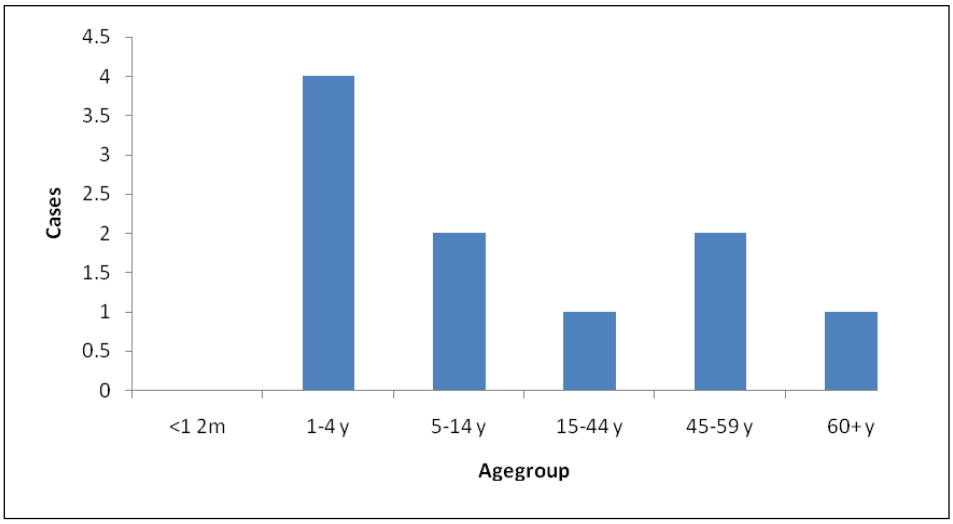
Note that most of the specimens, 256 (30%) were collected at the Infectious Diseases hospital, followed by the regional hospital of Durrës with 126 (15%) specimens, Paediatric Hospital with 109 (12.6%) specimens, and Lung diseases hospital with 116 (13 %) specimens.

Figure 21. Distribution of syndrome "Rash with fever by age group



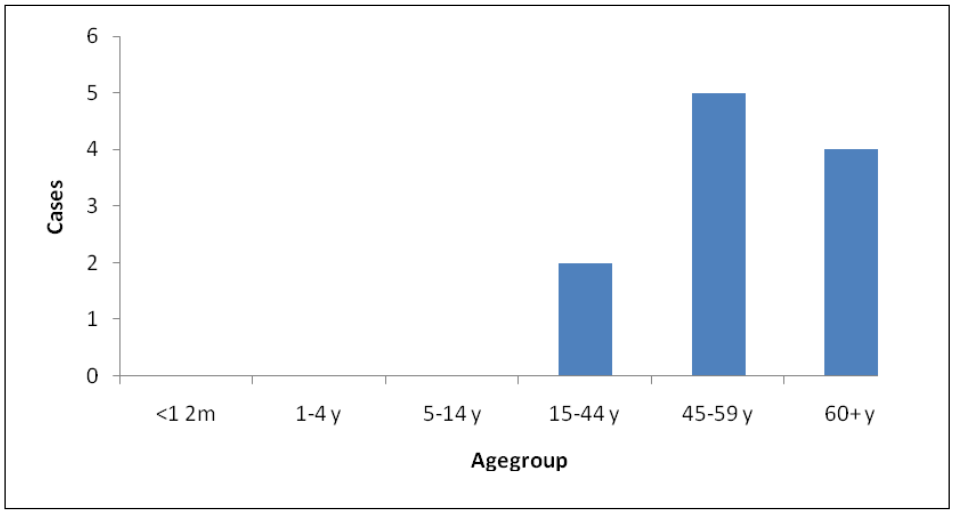
The predominance of the syndrome was observed in the pediatric age group 0-14 years with 96.2% of total cases. In the data of the 14 Sh form, the major number of cases are Varicella.

Figure 22. Distribution of syndrome "Jaundice" by age group



The predominance of the syndrome was observed in the age groups 1-4 years (40%) and 5-14 years (20%). Given that the vaccination against the viral hepatitis B was introduced in all birth cohorts in the year 1995, in this age groups the cause is the nature of transmission of infection, by fecal-oral route, as in diarrheal diseases.

Figure 23. Distribution of syndrome "Unexplained fever" by age group



It is noticed that the syndrome "unexplained fever" occurs in all age groups predominantly in patients aged over 45 years, with 82% of the total cases.

Table 11. The total number of syndromes by district

Districts	D. without blood	D. with blood	URI	LRI	Rash with fever	Jaundice	Suspected Meningitis	Unexplained fever	
Berat	3377		11879	5701	1				
Bulqize	1469		3394	2057					
Delvine	32		1287	150					
Devoll	627		1736	1149					
Diber	3897	1	2518	1643					
Durres	11672		27328	15971					
Elbasan	3446		23612	14571		1			
Fier	6204		36667	12334	117	1			1
Gramsh	596		4304	2154					
Gjirokaster	724		8081	3069					
Has	921		1942	1651					
Kavaje	2648		5128	3446	1				
Kolonje	835		2199	620					
Korçe	4302		15866	9904					
Kruje	1888		3157	2150	1				
Kuçove	830		3286	3286					
Kukes	580	1	1587	1048					
Kurbin	1869		6116	3419	3				
Lezhe	2120		5439	3776					
Librazhd	845		1810	1017					
Lushnje	2419		11220	7275					
M.Madhe	184		1910	798					
Mallakaster	864		1550	1737					
Mat	2516		7761	4974					
Mirdite	1434		4360	1949					
Peqin	968		4178	503		1			
Permet	190		1698	1236					
Pogradec	1803	4	7717	5715	4	5			9
Puke	666		3810	1881					
Sarande	3548		2805	1728					1
Skrapar	786		2905	780	4				
Shkoder	1705		18805	11186					
Tepelene	937		2222	1244					
Tirane	8893	1	110229	60613	107	2	1		
Tropoje	2377		3028	1871					
Vlore	5132	1	29639	13966					

Figure 24. Distribution of cases of "Diarrhea without blood" by week

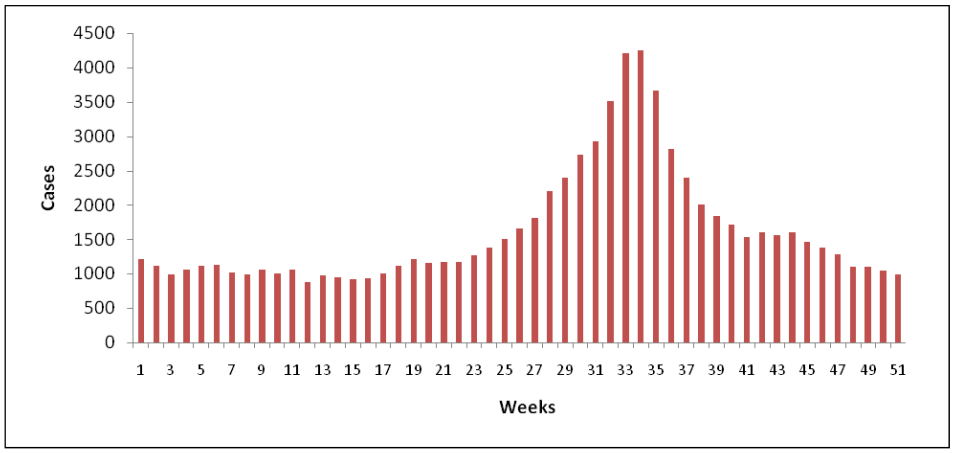


Figure 25. Distribution of cases of "Upper and lower respiratory infections" by week

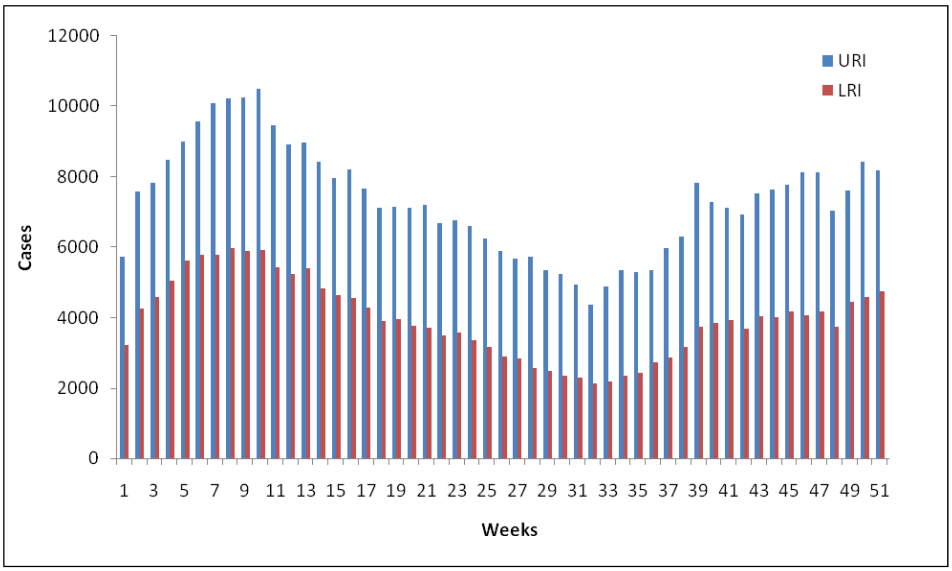
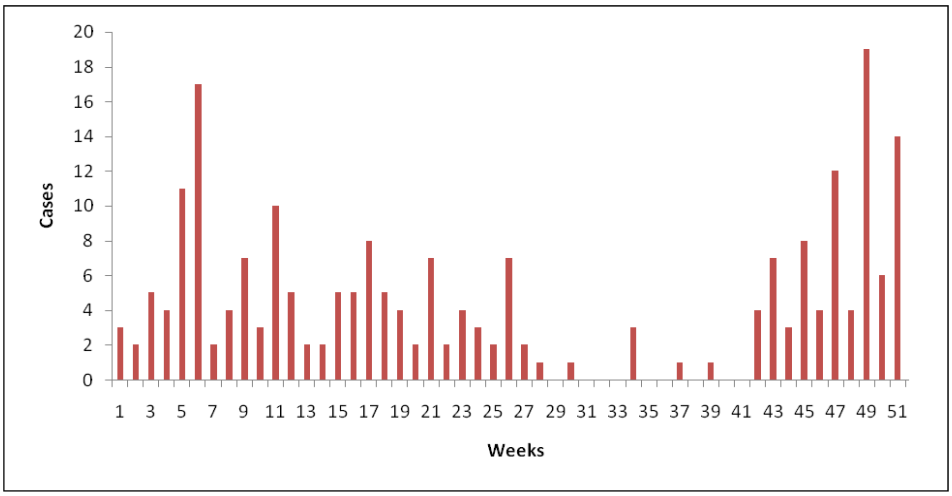


Figure 26. Distribution of cases of "Jaundice" by week



COMPARISON OF ALERT SYNDROMES WITH DISEASES IN 14Sh MONTHLY FORM

Table 12. Comparison of Infectious Syndrome "Diarrhea without blood" with diseases: Salmonella & unspecified gastroenteritis & Foodborne Intoxication.

	ALERT	14 Sh form	
	Diarrhea without blood	Salmonellosis + Unspecified gastroenteritis	Salmonellosis + Unspecified gastroenteritis+ Foodborne Intoxication
Cases	83304	63805	66686
Incidence: cases/100000	2,715.48	2,079.87	2,173.78

Map 3. Incidence of "Diarrhea without blood" and Diseases by district; cases/10000 population

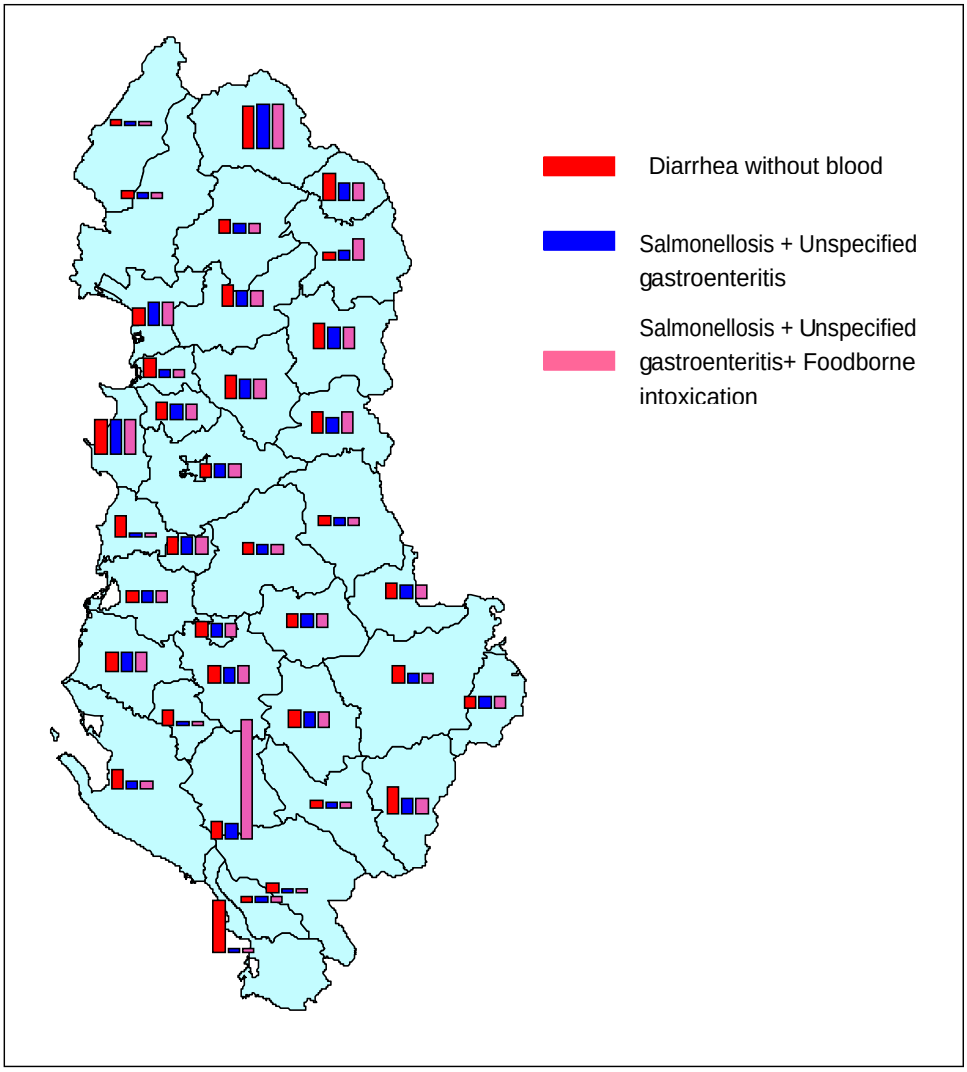


Table 13. Comparison of Infectious Syndrome "Diarrhea with blood" with Diseases: shigellosis (bacillary dysentery) & giardiasis and amebiasis

	ALERT	14 Sh form
	Diarrhea with blood	Shigellosis +Amebiasis
Cases	8	278
Incidence: cases/100000	0.3	9.1

Map 4. Distribution of cases of syndrome "Diarrhea with blood" by district

It is noticed that a very small number of syndrome "Diarrhea with blood" has been reported in the ALERT system (10 cases) compared with the respective diseases (278 cases). Patients with this syndrome have avoided the family doctor and presented themselves to the hospital for medical examination. The chart below shows that districts which have the highest number of shigellosis cases & giardiasis and amebiasis are Kukes with 112 cases, Shkodra with 86 cases and Tirana with 32 cases. The majority of districts have not reported any case of the syndrome: "diarrhea with blood"

Figure 27. Distribution of syndrome "Diarrhea with blood" and diseases by district

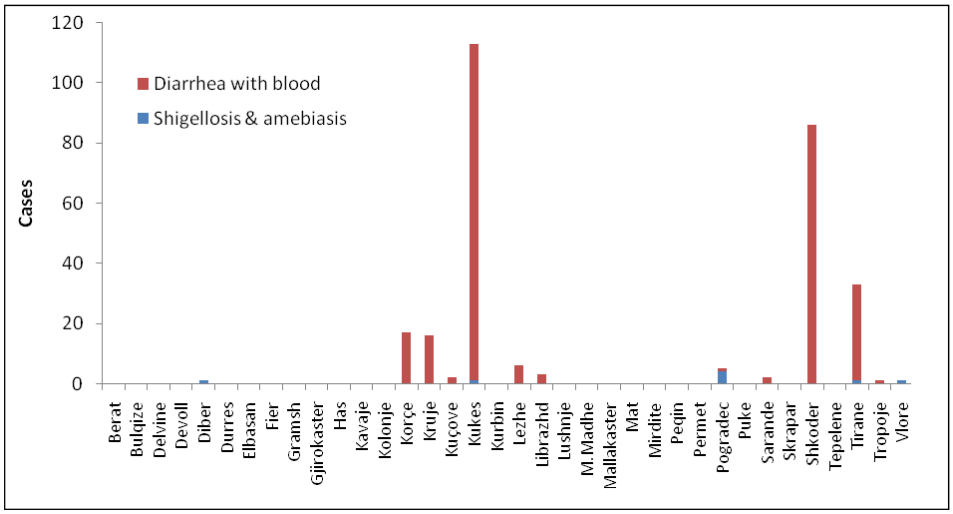
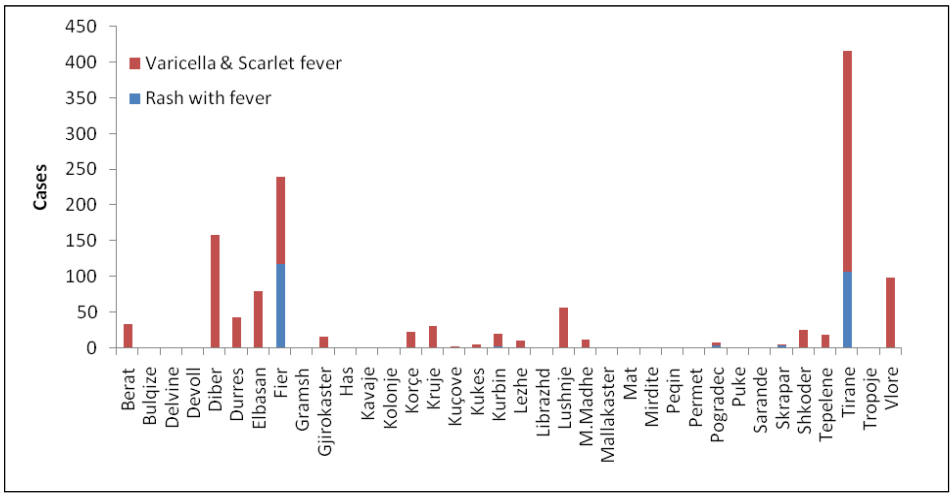


Table 14. Comparison of Infectious Syndrome "Rash with fever" with Diseases: (Measles, rubella, varicella, scarlet fever)

	ALERT	14 Sh form	
	Rash with fever	Suspected Measles & Rubella	(Measles, Rubella, Varicella, Scarlet fever)
Cases	238	6	1066
Incidence: cases/100000	7.8		34.7

Figure 28. Distribution of cases "rash with fever" and diseases by district



Through the ALERT system, 238 cases were reported of the infectious syndrome “rash with fever”, while the number of diseases reported in the monthly 14Sh form was of 1066 cases. 6 cases were suspected for measles which resulted negative for IgM antibodies against measles and rubella. Most cases of diseases reported were Varicella (890 cases) while 176 cases were scarlet fever.

Table 15. Comparison of Infectious Syndrome “Upper and lower respiratory infections” with Diseases Influenza & Common cold

	ALERT	14 Sh form
	URI + LRI	Influenza & C. Cold
Cases	587745	119964
Incidence: cases/100000	19,158.9	3,910.5

Map 5. Incidence of “Upper and lower respiratory infections” by district

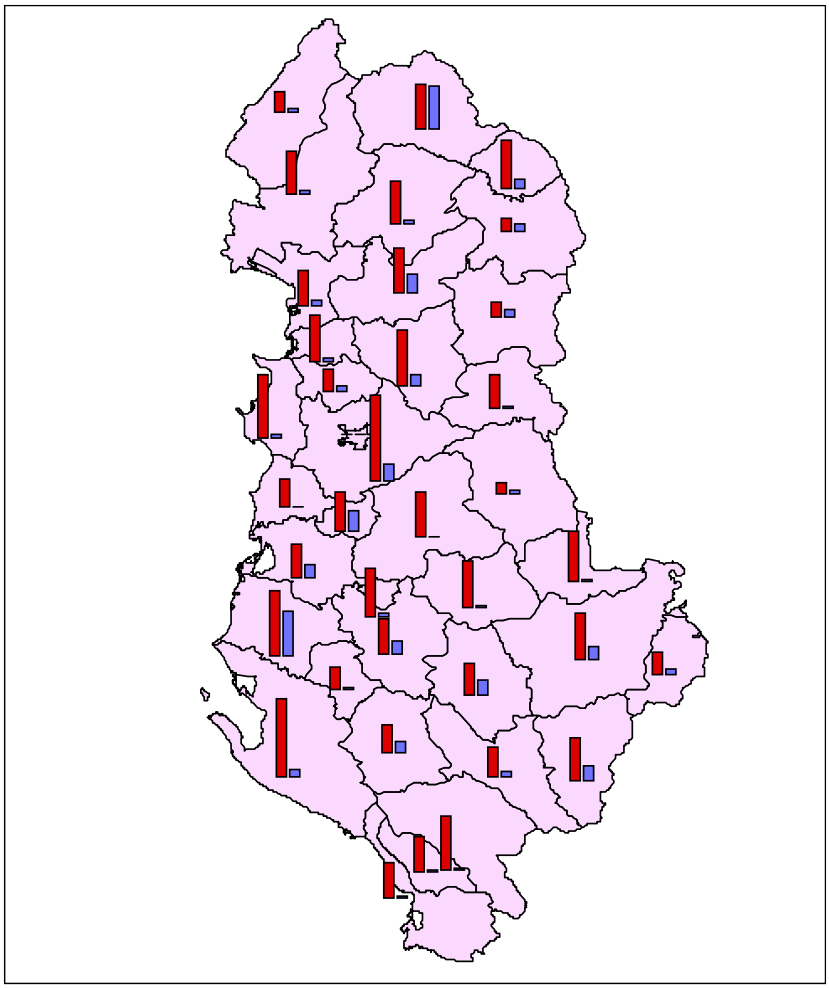
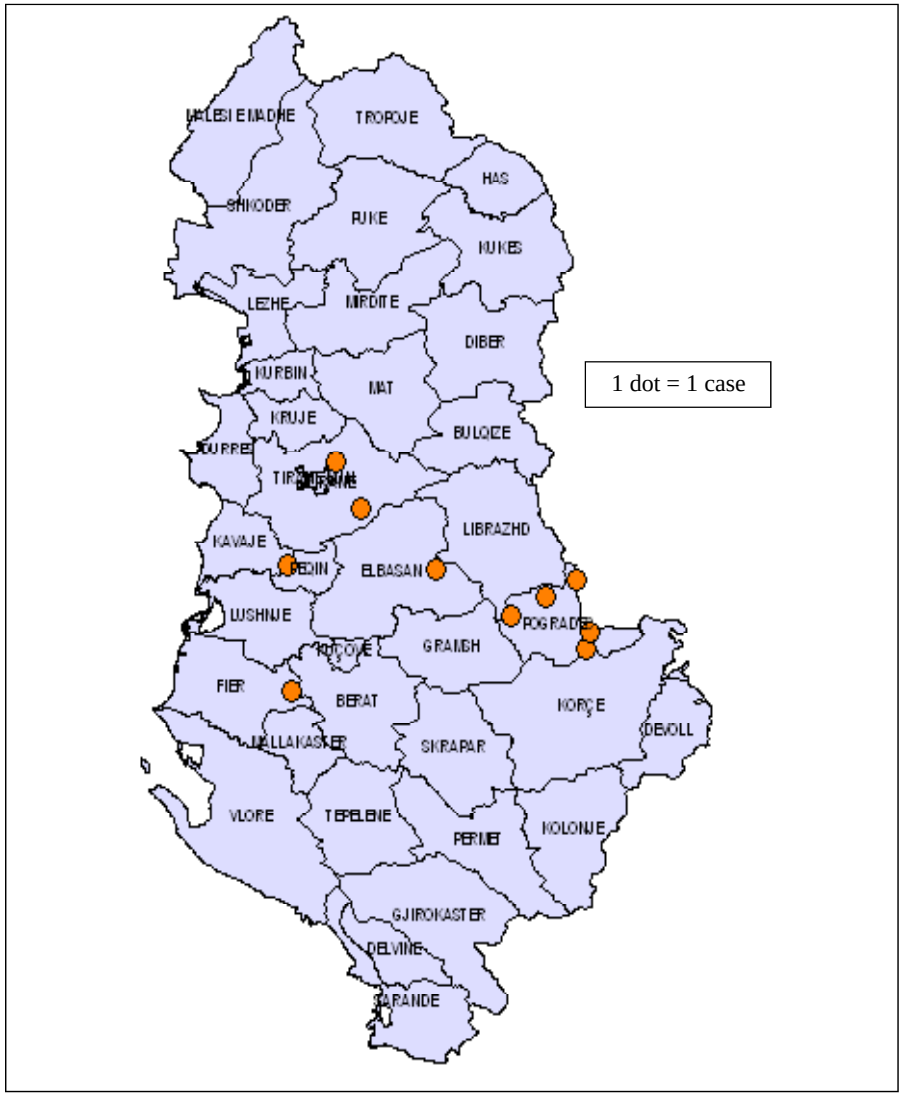


Table 16. Comparison of Infectious Syndrome "Jaundice" with the disease: "Unspecified Viral Hepatitis"

	ALERT	14 Sh form
	Jaundice	Unspecified viral hepatitis
Cases	10	98
Incidence: cases/100000	0.3	3.2

Map 6. Districts that have reported the Infectious syndrome "Jaundice"



Through ALERT system were reported 10 cases of infectious syndrome "jaundice" while in monthly 14Sh form were reported 98 cases of the diseases Unspecified viral hepatitis. The chart below shows that most of the districts that have reported unspecified viral hepatitis have not reported any case of the syndrome "jaundice". Patients with this syndrome have avoided the family doctor and presented themselves to the hospital for medical examination.

Figure 29. Distribution of syndrome infectious syndrome "Jaundice" and the disease by district

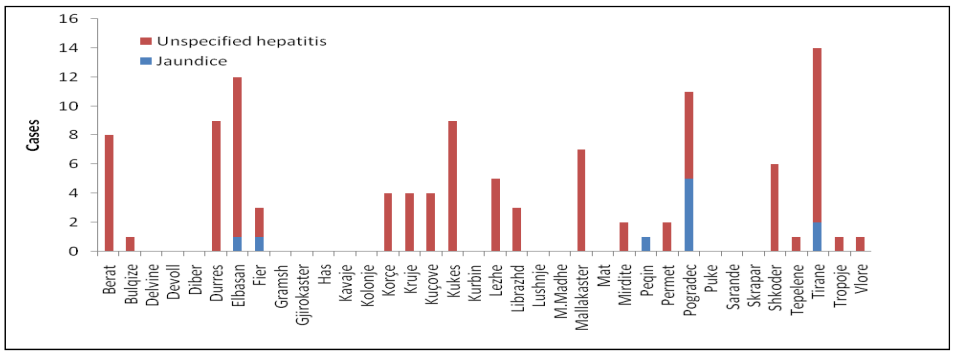
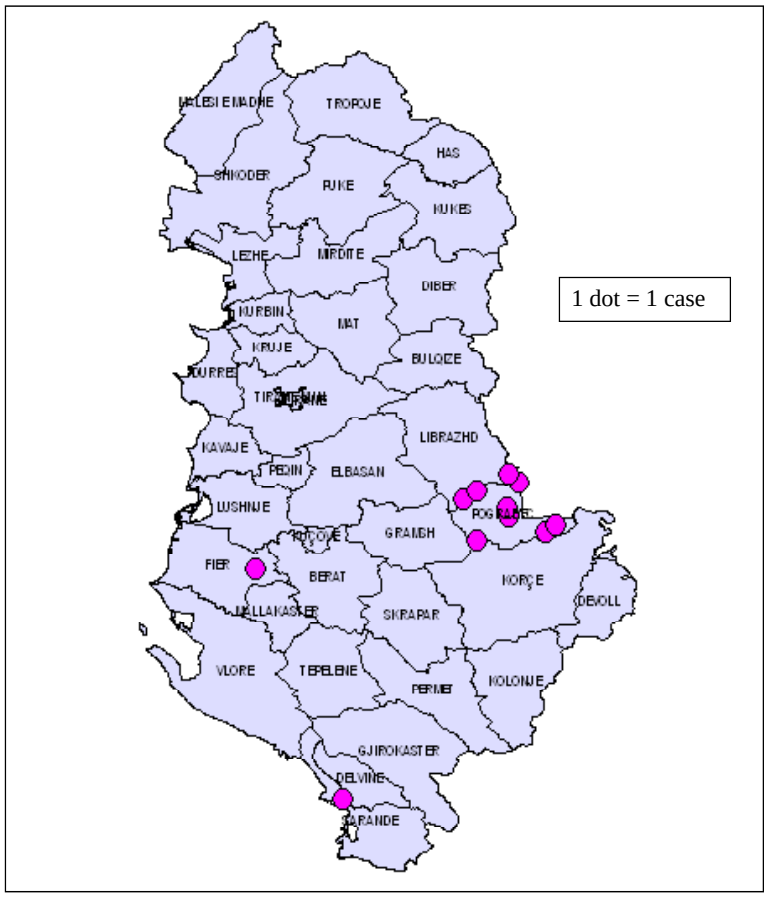


Table 17. Comparison of Infectious Syndrome "Hemorrhage with fever" with diseases: "Congo-Crimean and Hantan hemorrhagic fever

	ALERT	14 Sh form
	Hemorrhage with fever	CCHF+Hantan
Cases		6
Incidence: cases/100000		0.2

Map 7. Districts that have reported the infectious syndrome "Hemorrhage with fever"

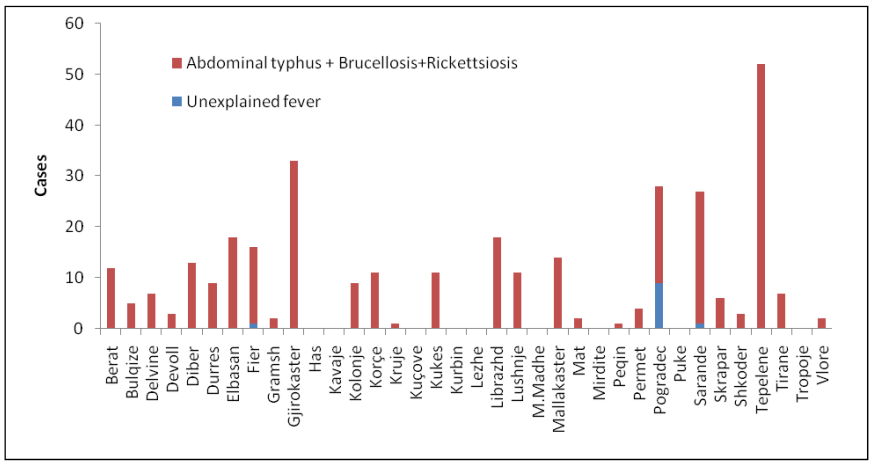


It is noted that no case of Infectious Syndrome "Hemorrhage with fever" has been reported through syndrome surveillance. Hemorrhagic fever is a serious and life threatening illness and patients presented themselves straight to the hospital for admission. 6 cases of the diseases have been reported in the monthly 14Sh form.

Table 18. Comparison of Infectious Syndrome "Unexplained fever" with Diseases: "Abdominal typhus + Brucellosis+Rickettsiosis"

	ALERT	14 Sh form
	Unexplained fever	Abdominal typhus + Brucellosis+Rickettsiosis
Cases	11	314
Incidence: cases/100000	0.4	10.2

Figure 30. Distribution of syndrome infectious syndrome "Unexplained fever" and diseases by district



Vaccine coverage in Albania, 2013

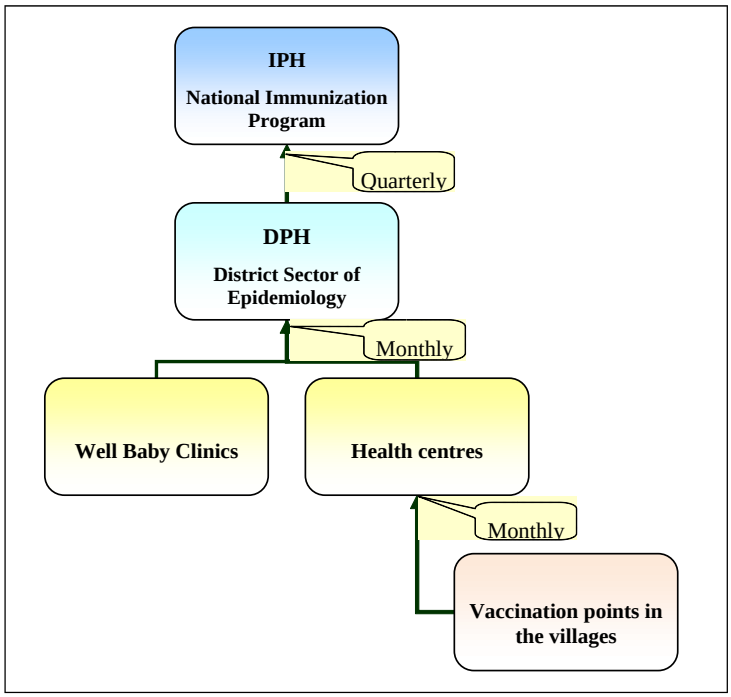
Erida Nelaj, Iria Preza, Silva Bino

As a rule, vaccine coverage is estimated based on the percentage of children that have taken a certain number of doses of recommended vaccine, during the first year of life. This same way, this coverage is estimated also for the recommended doses of vaccines for revaccination (immunity reminder).The vaccine coverage is simply the ratio of the number of vaccinated children with the planned number of children for vaccination. The data of reported coverage, which are provided from the vaccination points, are aggregated in the higher instance presenting values at the district, prefecture and national level.
Evaluation of vaccine coverage is based on two indicators:

I. Percentage of vaccine coverage for each vaccination indicator for all country districts, for each vaccine antigen in the national immunization schedule.

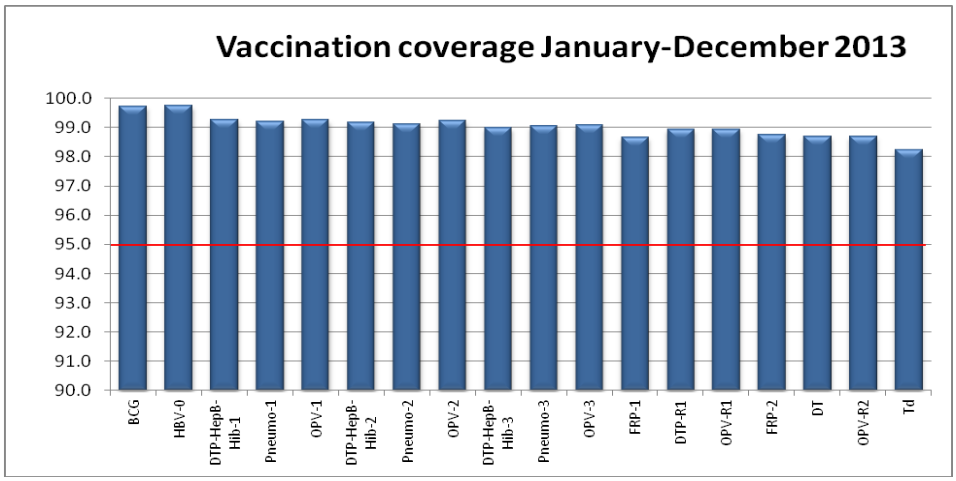
II. Dropout rate-Percentage of cases that start the series of vaccination with first dose and do not finish with the third dose.
In the National Immunization Program (NIP) data related to vaccine coverage are reported according to the form (attached in Annex 1) established since 2008, after including in this evaluation the delayed children. This form changes continuously adjusting with the introduction of new vaccines. It is reported from the Epidemiological Sector of the Directory of Public Health of each district to the NIP every three months, while the baby-clinics and health centres of the cities report by this form at this sector, every month. The structure of routine delivery of the immunization data is presented in Fig.1.

Figure 1. The structure of routine delivery of the immunization data



One of the main challenges for the National Immunization Program is maintaining the vaccine coverage above 95% for each vaccine antigen. For 2013, the reported vaccine coverage for 36 Directories of Public Health is presented at levels above 98% for each vaccine antigen by the National Immunization Schedule. The figure 2 shows graphically the high level of vaccine coverage for all vaccine antigens at national level.

Figure 2: Vaccine coverage January- December 2013



Another challenge is maintaining such high values, not only at national level, but also at district levels. Below (fig.3 and 4), the graphics show the vaccine coverage for some of the vaccines of the national immunization schedule at the district levels.

Figure 3. Vaccine coverage at district level for 3rd doses of DTP-HepB-Hib and OPV

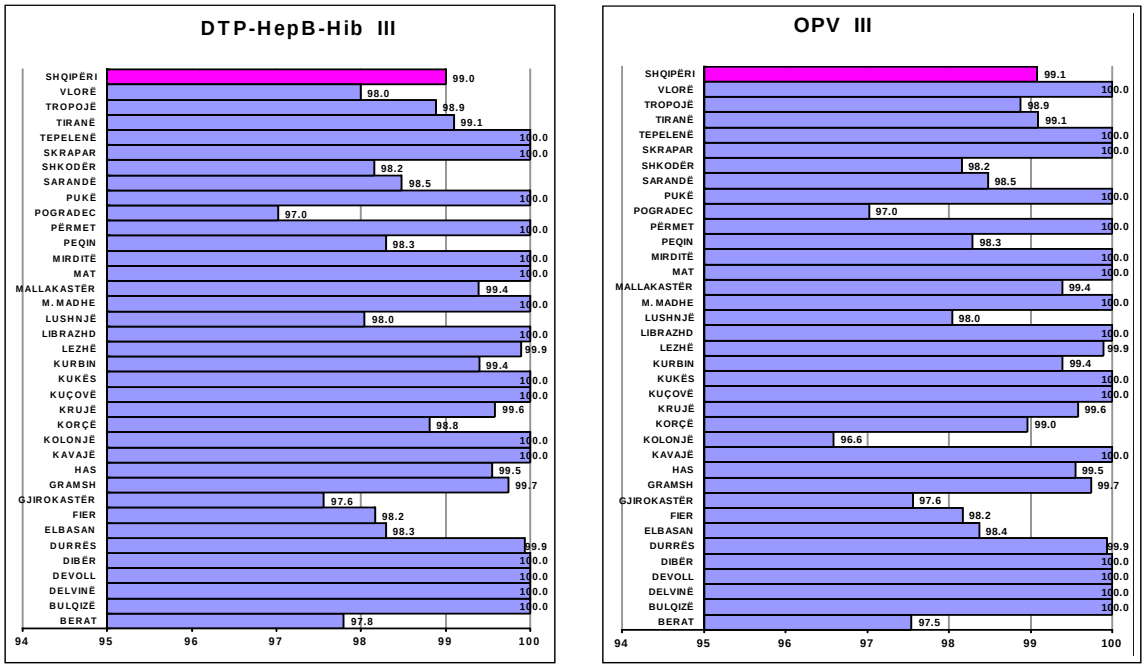
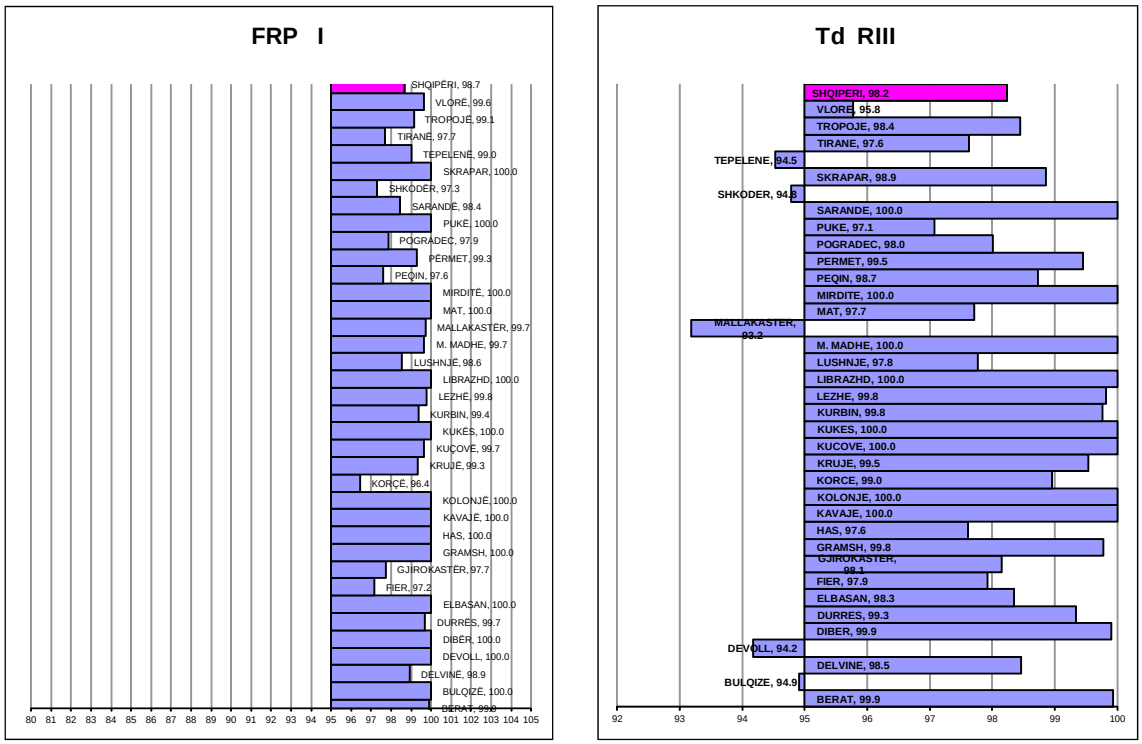


Figure 4. Vaccine coverage at district level for 1st dose MMR and revaccination with Td



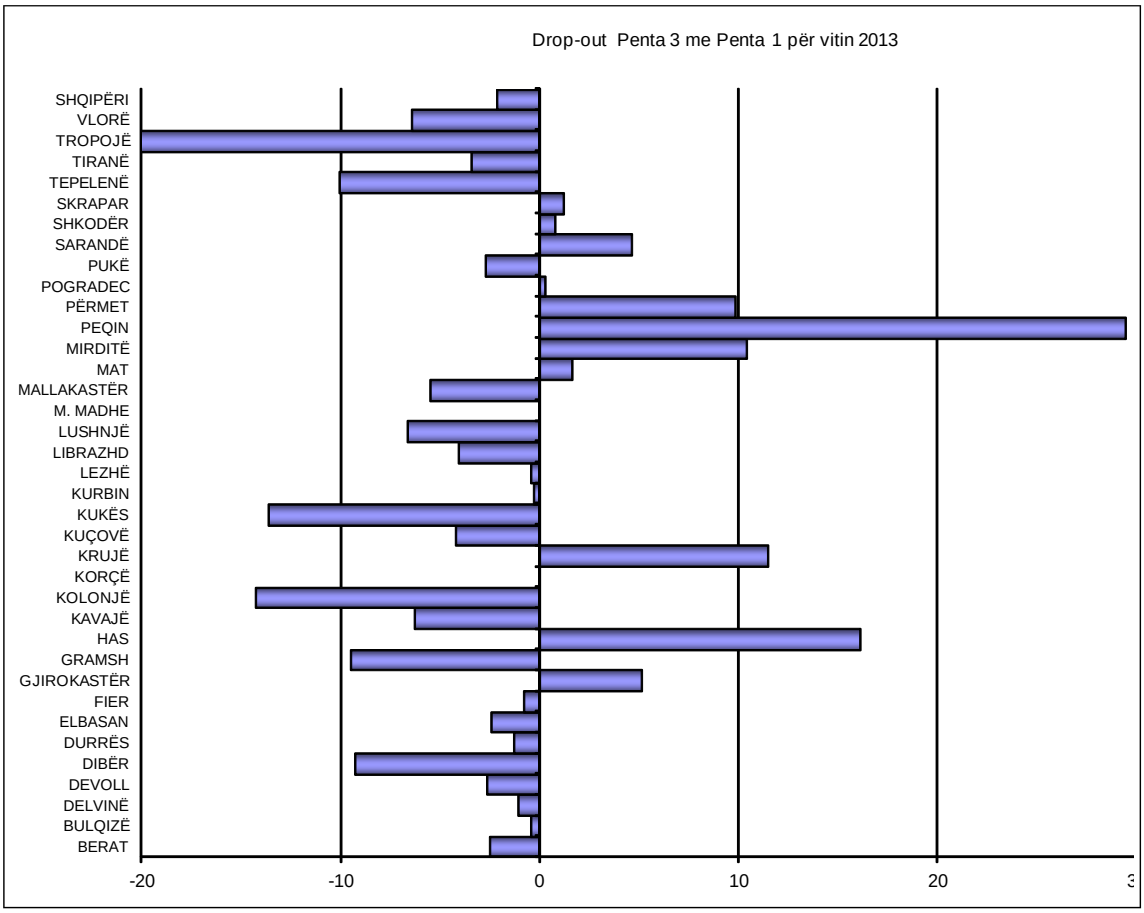
Besides, the graphics indicate that, regarding basal vaccination all the districts are in the "green zone", therefore above 95%. During 2013, the only vaccine where the vaccine coverage does not reach the value of 95% in all the districts is the revaccination with Td vaccine, at 14 years of age,

where 13,8% of the districts are in the level between 94-95%. These districts are characterised by a small and moving population. One of the reasons for this coverage might be the lack of door-to-door screening (hence, no evidence of moved population) or real decrease of vaccination for this target group.

Nevertheless, some districts have a vaccine coverage that reaches values of 100% almost for all the antigens. This occurs in districts with small number of population where the number of children for vaccination does not exceed in total 500 children and the population is easily reachable from the vaccination health staff.

Another way of evaluating the vaccine coverage is the drop-out rate indicator, that should not exceed the 10% rate. This indicator for pentavalent vaccine is shown graphically below (fig 5)

Figure 5: Dropout rate by districts for the pentavalent vaccine



So, there are four districts which exceed the value of 10% and four other ones that go under -10%. In the cases where the dropout rate has positive values, for the districts where the value exceeds 10%, we think that the children have started vaccination with the first doses but later on have not shown up for the third doses. Initially, the reasons should be searched within the district but we should not exclude other cases, such as when this value is affected from the movement of population, that is, the getaway of children to other districts.

Meanwhile, if the graphic has negative values it means that there is more vaccination with third doses than with the first doses. One of the reasons is that in these districts the incoming children have been planned and vaccinated with the third dose without reporting before their vaccination status for previous doses.

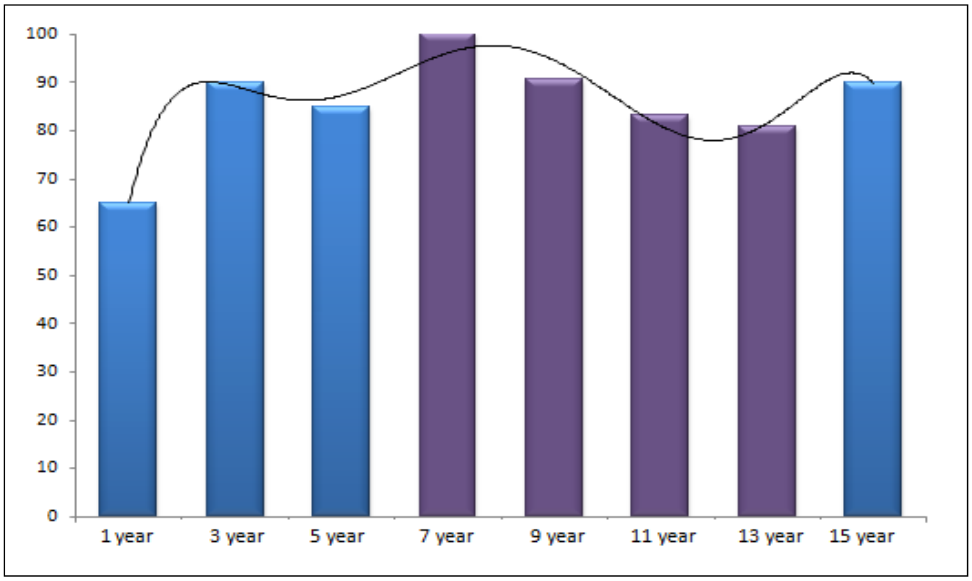
Nevertheless, evaluation of vaccine coverage based only on numbers has its limitations because:

- It does not evaluate the impact of vaccination mortality and morbidity from vaccine preventable diseases.
- It might occur that we have high vaccination coverage but with low effectiveness as a result of irregular administration, or in the cases with immunodeficiency.
- The data reported from the districts are not always accurate/ reliable.
- In coverage of 95% we are not able to spot which are the unvaccinated children that constitute the 5% of the total.

Among the challenges of public health regarding the evaluation of vaccine coverage is strengthening the surveillance for vaccine preventable diseases, undertaking different studies regarding seroprevalence, and what is considered at the present as the evolution of vaccination program is the extension of the informative system based in the internet. The immunization information system enables every user/vaccinator to register the work activity regarding applied vaccines for each child that is already in the system.

A recent study related to seroprevalence indicates a high protective level for some of vaccines in the national immunization schedule. Results related to tetanus component as a part of combined vaccines such as DTP-HepB-Hib, DTP or DT e Td are shown in the graph below.

Figure 6. Protective level for tetanus



There is a relevant statically linear trend of tetanus protective level with the increase of age, $\chi^2_{\text{for trend}} = 10.1$ $p<0.01$, since the number of doses increases with age. In general, the high levels are obtained after booster doses.

Usually, data of the vaccine coverage are reported at the WHO HQ and UNICEF throughout the Joint Report Form (JRF). Along with vaccination coverage and the vaccine types shipped in the country, it is also reported the morbidity related to the vaccine preventable diseases. Below, the table 1 shows their situation in Albania for the year 2013.

Table1. Morbidity reported to JRF

Disease	Cases in total	Lab investigation	
	Confirmed cases from epidemiology and labs (suspected cases not included)	No. of tested cases	No. of positive cases
Diphtheria	0		
Measles	0	6	0
Neonatal tetanus	0		
Tetanus in total	0		
Pertussis	6	0	0
Mumps	20		
Rubella	0		
Congenital Rubella Syndrome.(CRS)	0		
Varicella	890	0	0
Rotavirus	12	53	12

During the first quarter of 2014, the type of poliomyelitis vaccine that was used so far was changed in the immunization program, and there was a shift from live oral vaccine (OPV) to inactive injectable one (IPV). Changes have occurred also in the pneumococcal vaccine schedule from the old one 3+0 (2, 4 and 6 months) to the new one 2+1 (2, 4 and 10 months), in order to ensure a better, long-term protection for the vaccinated child.

The above changes refer to all children born from 1 March 2014. This year, a revaccination dose of Td vaccine is also added for adults 18-19 years of age (last year of high school), in order to ensure a long-term protection related to tetanus, since this vaccine is not applied anymore in pregnant women.

Table 2. National immunization schedule

Age in months						Age in years				
At birth	2 months	4 months	6 months	10 months	12 months	2 years	5 years	6 years	14 years	18-19 years
BCG										
HepB										
	DTP-HepB-Hib	DTP-HepB-Hib	DTP-HepB-Hib							
	IPV	IPV	OPV			IPV		IPV		
	PCV	PCV		PCV						
						DTP				
					FRP		FRP			
								DT		
									Td	Td

As shown, the national immunization schedule has been completed gradually with new vaccines, similar to the ones that are used in the European Union countries.
In the coming years, other vaccines are expected to be added in the schedule, such as rotavirus vaccine, which is estimated to be cost effective, or the human papillomavirus vaccine (HPV).

Indicator of Salt-Intake in Diet as Part of the Global Monitoring Framework for the Prevention and Control of Non-Infectious Diseases.

Sonela Xinxo, Alban Ylli

Target (limit) - the average of salt intake in adult population less than 5 mg per day
Indicator – salt intake (in grams) per day, age-standardized.
The Declaration on Surveillance of salt intake in European region emphasizes that no baseline is needed on the target (limit) to the daily measure of salt, because there is no relative reduction in regards to the targeted specific indicator in International level. Actually, this proposed indicator [daily salt intake] is not monitored in regular way from World Health Organization. Daily salt intake can be measured on 24 hours urine output. WHO is actually writing a STEP study module on the evaluation and intake of sodium (Na) in food that will include in form of questions the source of sodium, in the analysis of urine in 24 hours. This module will help in the further use of this indicator. Currently, a small number of countries (mainly European Union countries) provide the data with regard to the average salt intake in population level and observe the monitoring of this indicator.
In the countries where this monitoring is done (urine within 24 hours or diet study), the process is led by governmental institutions, and health education for the proper way of salt intake is done by non-profit organizations (such as in Denmark and Holland).
Now, the World Health Organization is working toward the curricula of monitoring mechanisms for such indicator, including even the developing and under-developed countries.
In a static health situation, most of the salt uptake by food is extracted through the kidneys in the following 24 hours, and the remaining part is extracted through sweat, saliva, and gastrointestinal secretions. Daily renal extraction rhythm is not constant throughout the day and depends a lot on other variables, such as: the time of the day, individual behavior and neuro-hormonal influence.
Measurement of salt intake in population level helps in the policy implementation of salt reduction in diet. Today are proposed several methods on the evaluation of salt intake, such as: diet control (frequency of foods taken, food diary, 24 hour schedule), urine collection (random, during the night or 24 hours).

Diet monitoring methods for the evaluation of salt intake are not concurrent, because these methods are impossible to evaluate in an accurate way the use of salt uptake. The personal discreet usage of salt depends on age, gender, ethnic and social group and it can change by inhabitation. In addition, the evaluation/diet control is subject of memory errors and is based on the presence of local food etiquette.

According to WHO Center for Nutrition in the University of Warwick, in United Kingdom, the methods of urine collection have several advantages and disadvantage (Table 1).

Table 1. The advantages and disadvantages of urine collection methods.

Method	Advantages and Disadvantages
24 hour Collection	Gold Standard on monitoring the salt intake
	Catches more than 90% of sodium(Na) used
	High density weight
	Problems of saturation—supervising the start and end of collection.
	Not useful method for a wider study.
	You can use the creatinine in urine.
	Ideal to monitor the iodine intake
Random collection of urine sample	**Lower Weight of Representation**
	There is variability in individual level, but it can provide an average value of the group.
	Less used in time monitoring effects.
	High dependency on hydration, volume, residual urethra volume
	Currently used for iodine monitoring (mainly in children and women of reproductive-age).
	Extrapolation in 24 hours (validation is needed).
Collection at night	It can give errors in extreme values (greater in persons with HTA)
	Not useful in time monitoring programs.

The golden standard for evaluation of salt intake is during the first 24-hour urine collection, through the excretion of sodium (Na) as individuals in population. This method is used for a long time in the epidemiological research, metabolic and psychological one. However, the collection of urine on the first 24 hours is not convenient, especially the use of it in bigger populations, that is why other alternative methods are used. The random samples of urine are often suggested as an alternative and many other derived methods have been tested, from the 24-hour collection of urine, to calculate the daily excretion of urine from the partial random collection of urine.

Many studies have been done to validate the alternative methods of the 24-hour collection of urine. Many of them are focused in characterization of the individual intake. In Table 2, according to a

study of the University of Warwick, evidence is shown on the comparison between the random collection of urine and the 24 hour collection in the evaluation of salt intake in diet.

Table 2. Comparison evidence between random collections of urine vs. 24 hours.

Study	Summary of Results
Systematic Review (PAHO/WHO 2012)	Less samples with population base.
	Most of the random samples are taken at night
	Mainly measured through correlation
	Wide variation
	individual validation against that of the group
	Most of the urine random samples are not dependant from 24h samples.
New validation in population independent samples (WHO Warwick 2012)	**Validation within population**
	Use of random independent samples
	Tanaka Method
	• specific
	• Needs inside calibration
	• Error presence, overestimates the low intake, underestimates the high intake.
	• Very low group specificity (possibility to identify the low intake of salt)
	Affinity Method
	• error underestimates the low intake, overestimates the high intake
	• Low group specificity (possibility to identify the low intake of salt)
Comparison in Scotland	Weak connection between sodium in urine of 24h and Na in random urine samples.
	Weak reoccurrence of three random sample urines.
	Bad change among Q2, Q3 and Q4
Trend in time in the health study for England (2010)	First data in the time trend in population
	Lack of internal comparison
	Underestimation of the total population intake
	Consistency according to gender and age-group

Accomplishments. In many years, many populations have engaged in a successful manner in the collection of 24h urine in big samples in high income, middle income or low income countries, with a very high percentage of representation.

The recommendation given by the experts of WHO for the prevention of cardiovascular diseases through reduction of daily salt intake in population, is a better evaluation of the population profile with regard to salt intake, and will be done through the measurement of sodium extraction in urine during 24 hours with a representative sample. Urine random sample usage is not recommended, because it is considered as inaccurate and not believable. Until collected evidence is gathered with simple methods regarding the extraction measurement of 24h of Na in urine, WHO recommends the collection of 24h urine.

Based on the recommendations by the WHO experts, the Institute of Public Health has undertaken a study in regards to the daily salt intake evaluation through the measurement of sodium excretion in urine of 24 hours with a number sample of n = 100 individuals. The results of this study are considered as the first step to apply this indicator in the monitoring framework and the control prevention of non-infectious diseases,in competition with other indicators used prior to this day.

Monitoring the Air Quality in University Hospital Center "Mother Teresa" in Tirana (UHCT)

Elida Mata, Genci Dervishi, Agron Deliu, Ilir Dume

University Hospital Center "Mother Teresa" in Tirana is the largest health institution in Albania, as well as the only academic health institution of such a kind that is classified as the only tertiary health center in Albania.

Currently UHC Tirana offers ambulatory health services for about 150,000 people per year, hospital services for over 60,000 people per year and emergency services for about 200,000 people per year. University Hospital Center has a surface area of 16.5 hectares, where 15 hospital buildings and 4 (four) other buildings are found: General Director of Hospital Building, Pharmacy Building, Technique and Statistics Building. Also, within the territory of University Hospital Center are also found the Faculties (Schools) of Dentistry and Nursing.

The purpose is to monitor the air quality in the outdoor environment of University Hospital Center "Mother Teresa."

The objectives are the monitoring of the contaminants LNP and PM10 as well as NO_2 and O_3 in the outdoor environment of University Hospital "Mother Teresa."

In UHC of Tirana's environment the outdoor environment was investigated, and the observation points were determined to measure the contamination samples of: LNP and PM10 as well as NO_2 and O_3 with the passive respective tubes. We determined four points to examine the sampling at: School of Dentistry, Oncology Hospital, Pediatrics Hospital and Emergency. Measurements for the LNP indicator and PM10 have been analyzed during a time interval of one week with a change of filters every 3-days. Time-length of monitoring was 1 (one) month. Technical procedures to determine the content of LNP, PM 10, NO_2 and O_3 in air, are in accordance with the methodical material titled: "The Main Analysis of Atmospheric Air Pollutants, Institute of Public Health," Tirana 2000.

In the tables and graphs below, the values of these pollutants have been presented, according to the monitoring points, compared with allowed recommended values by WHO. Referred to Table 1 and Figure 1, the measurements were done near the School of Dentistry and the filter change has been done according to the predetermined dates. The results in the Table 1 show that the obtained data after the analysis of the samples fall within determined values, in accordance to the Albanian legislation, and those recommended by EU.

Table 1. Pollutants' values near School of Dentistry

School of Dentistry	LNP µg/m³	PM10µg/m³	$NO_{2\mu g/m^3}$	$O_{3\mu g/m^3}$
07/05/2014	28,3	12,6	38,6	85,2
09/05/2014	17,5	10,1		
12/05/2014	14,8	8,9		
Norm EU	80	40	40	110
Norm AL	140	60	60	110

Figure 1. Pollutants' values near School of Dentistry

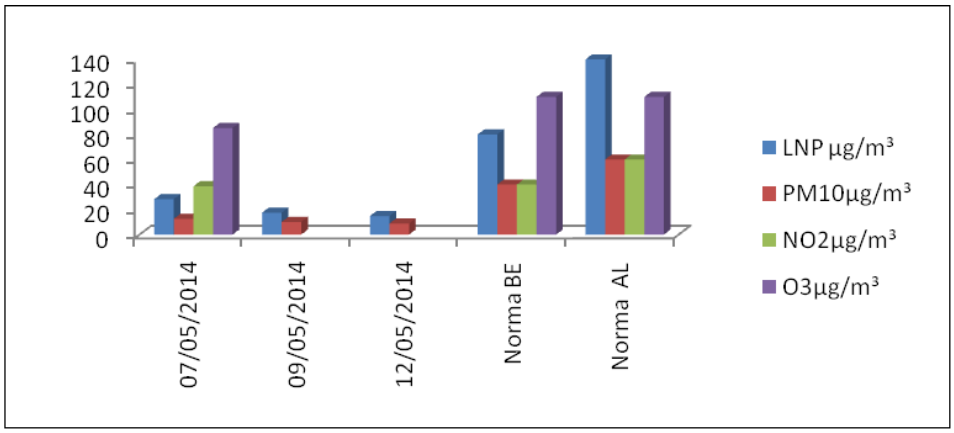


Table 2 and Figure 2 show the results for samples taken in the second point of monitoring near Oncology Hospital. Analyzed samples and the data obtained were found to be within norms for our pollutants in all of the three monitoring days. This is referred to our permitted values and those recommended by EU.

Table 2. Pollutants' values near Oncology Hospital

Oncology Hospital				
	LNP µg/m³	PM10µg/m³	$NO_{2\mu g/m^3}$	$O_{3\mu g/m^3}$
16/05/2014	18,2	10,2	42,5	92,7
19/05/2014	25,5	11,4		
21/05/2014	45,3	20,6		
Norm EU	80	40	40	110
Norm AL	140	60	60	110

Figure 2. Pollutants' Values near Oncology Hospital

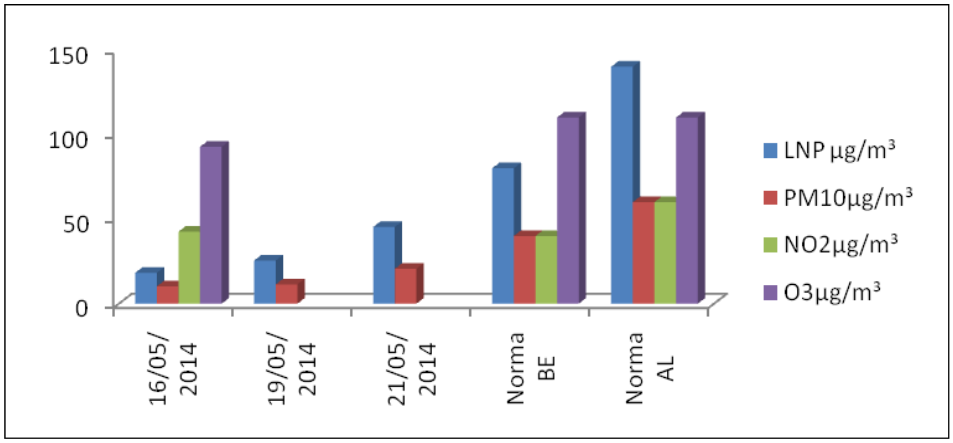
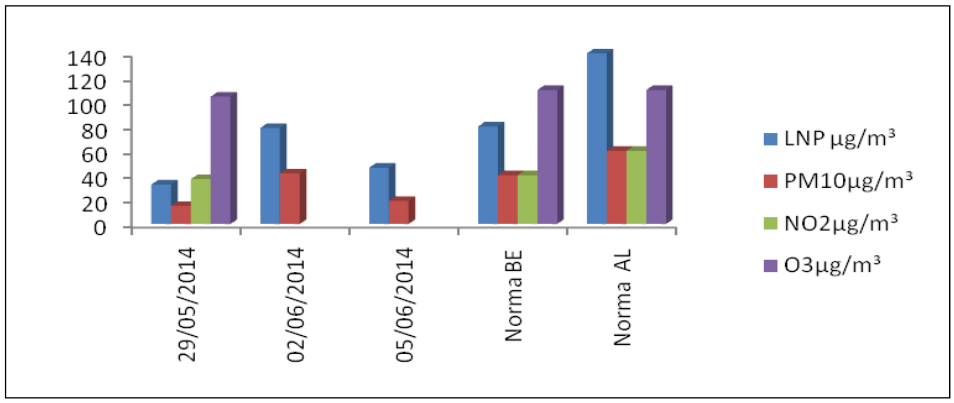


Table 3 and Figure 3 represent the values of samples taken for analysis in the monitoring point of Pediatric Hospital. Values of LNP that were obtained are near the standard limit recommended by EU, that is, much lower than the allowed value by the Albanian legislation. PM10 presents a slight increase compared with the recommended values of EU and with the norm value allowed in our country. These values have been shown on the second measurement on the date 02/06/2014. Another indicator that is near the normal limit is that of ozone $O_{3.}$ This slight increase comes as a possible result of automotive road traffic within the hospital territory.

Table 3. Pollutants' values in Pediatric Hospital

Pediatric Hospital				
	LNP µg/m³	PM10µg/ m³	NO2µg/ m³	O3µg/m ³
29/05/2014	32,4	14,8	36,9	104,6
02/06/2014	78,8	41,5		
05/06/2014	46,2	18,9		
Norm EU	80	40	40	110
Norm AL	140	60	60	110

Figure 3. Pollutants' values near Pediatric Hospital

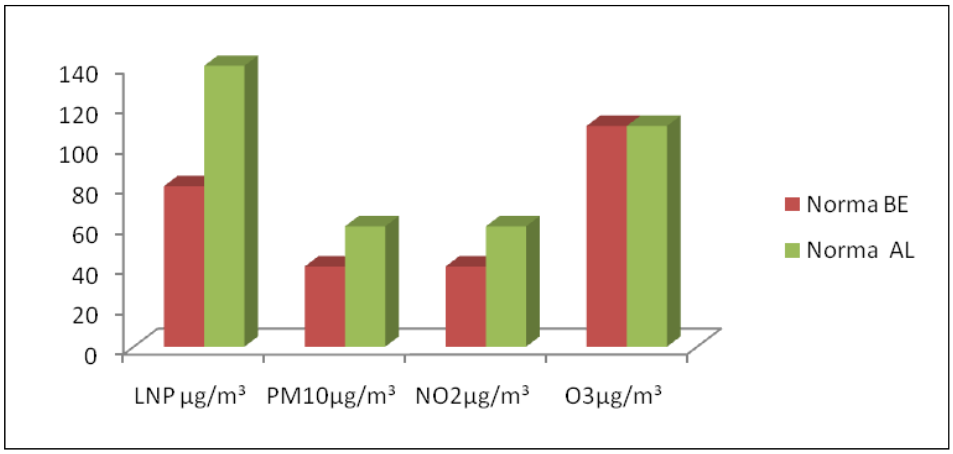


Samplings of analyses that were taken in the fourth monitoring point, are represented by the Emergency of Hospital, and show pollutants' values of LNP, PM10 and NO_2 within the norm values both permitted by our country and those recommended by EU. A slight increase in the level of ozone was noted in this point.

Table 4. Pollutants' values at Emergency of Hospital

Emergency of Hospital				
	LNP µg/m³	PM10µg/ m³	$NO_{2\mu g/m^3}$	$O_{3\mu g/m^3}$
17/06/2014	56,5	21,3	38,3	113,9
Norma BE	80	40	40	110
Norma AL	140	60	60	110

Figure 4. Pollutants' values at Emergency of Hospital



We conclude that based on the obtained results from the analyses of the gathered samples that the level of the monitored pollutants are within the comparative normal values of those determined by the Albanian legislation and those recommended by EU. It is recommended monitoring be implemented through all the seasons of the year, in order to have a clearer view on the evaluation of air quality in these environments.

BULLETIN OF THE INSTITUTE OF PUBLIC HEALTH
Aleksandër Moisiu, Str. 80, Tirana, Albania
E-mail: ishp@shendetesia.gov.al
Tel: 04 23 74 756
Fax: 04 23 70 058