

# Iran's success in eliminating measles and existing challenges

9 May 2022

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# Outline

- Country background information and vaccination history
- Measles and Rubella routine vaccination coverage
- COVID 19 impact on the M&R programme
- Measles Outbreak in the Southern provinces
- Conclusion
- Way forward

# Country Background Information, Iran 2020

Number of provinces	31
Number of districts	446
Infant mortality rate	12.5 per 1000 live birth
<5 mortality rate	14.8 per 1000 live birth
<b>Total population</b>	<b>83,884,000</b>
Population < 1 year	1,273,000
Population 1 - 4 years	5,534,000
Population 5 - 9 years	6,831,000
Population 10-14 years	6,240,000
Population 15+ years	64,006,000
Special Populations/Hard-to-reach Groups	Non-Iranian immigrants, People lived in slum areas, Nomads 8% of total population

# History of the Vaccination Schedule for Measles and Rubella in Iran

- The first use of Measles vaccine was in 1968
- The measles vaccine has been used twice at 9 and 15 months of age since 1984.
- In 2003, catch up SIA by Measles and Rubella vaccine conducted for the age group of 5 to 25 years.
- Since 2004, the MMR vaccine has been used at 12 and 18 months of age.
- As of 2014 all non-pregnant married women are being screened at their first visit to health system for review of their immunity against rubella, and non-immune women are immunized by MR vaccine.

## Definition of measles elimination

- **The absence of endemic measles circulation for at least 12 months in a country with a high-quality surveillance system.**
- **If the above situation continue for 36 months and more, The country will be certified as measles eliminated country.**

## Strategies for Measles and Rubella Eliminating; Iran

- MMR1 and MMR2 coverage >98% at national and more than 95% in all districts.
  - Conducting SIAs (catch up in 2003, follow ups in 2015 and 2021)
  - High performance surveillance of Fever and rash
  - Eligible National Measles and Rubella Lab
- ***RVC verified the elimination of rubella and then measles in Iran in two separate meetings in May and October 2019.***

## نامه تاییدیه حذف سرخک در کشور

VPI.10/02  
E4/48/01

9 October 2019

Dear Minister,

I have the honour to refer to the national report of the National Verification Committee for Measles and Rubella Elimination in the Islamic Republic of Iran which was submitted to the Regional Verification Commission for Measles and Rubella Elimination in the Eastern Mediterranean Region requesting verification of Measles elimination in the country.

Kindly be informed that the country report has been reviewed by the Regional Verification Commission of Measles and Rubella Elimination during its meeting in Tunis, Tunisia, from 3 to 4 October 2019 and based on the data for the period 2016-2018, the Commission has declared verification of measles elimination in the Islamic Republic of Iran, in addition to verification of elimination of rubella that was declared in May 2019.

I would like to take this opportunity to congratulate Your Excellency on this remarkable achievement and to assure you of WHO's appreciation and acknowledgment of the work of the Expanded Programme on Immunization in the Islamic Republic of Iran.

Yours faithfully,



Dr Ahmed Salim Al-Mandhari  
Regional Director

## نامه تاییدیه حذف سرخجه در کشور

VPI.6/3  
E4/48/01

13 June 2019

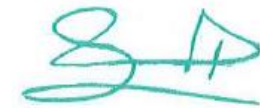
Dear Minister,

I have the honour to refer to the national report submitted by the National Verification Commission for Measles and Rubella in Islamic Republic of Iran to the Regional Verification Commission for Measles and Rubella Elimination in the Eastern Mediterranean Region to request verification of elimination of measles and rubella in the country.

Kindly be informed that the country report has been reviewed by the Regional Verification Commission of Measles and Rubella Elimination during its meeting in Amman, Jordan, from 15 to 16 May 2019, and based on the data till end 2017, the commission has declared verification of rubella elimination in Islamic Republic of Iran. The commission has also concluded that Islamic Republic of Iran is close to eliminating measles and further information is required to support documenting measles elimination.

I take this opportunity to congratulate Your Excellency on this remarkable achievement and to assure you of WHO's appreciation and acknowledgment of the work of the Expanded Programme of Iran.

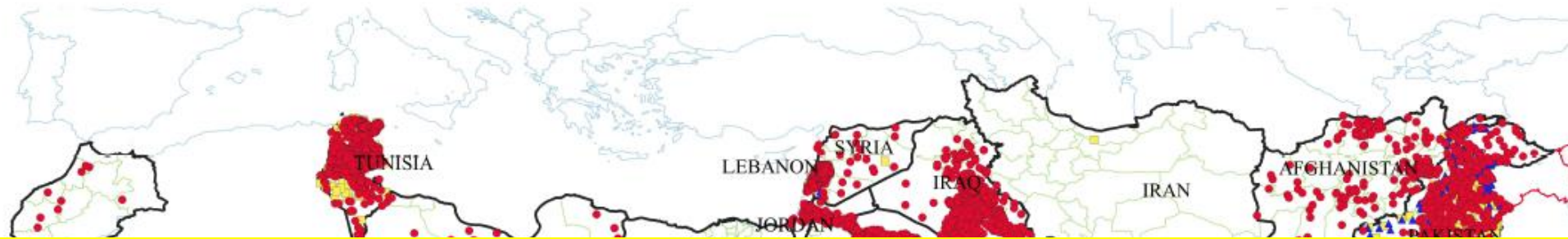
Yours faithfully,



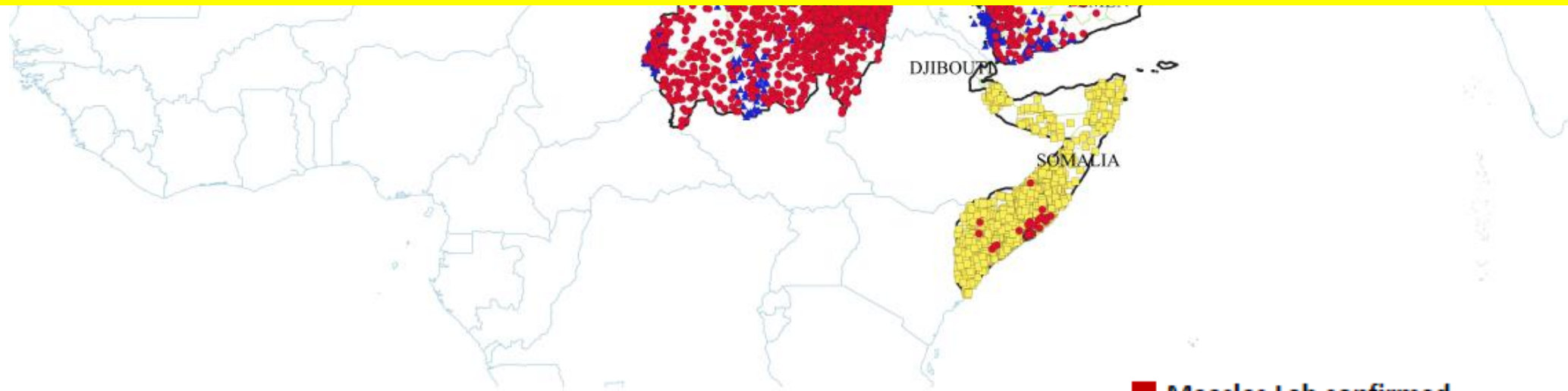
Dr Ahmed Salim Al-Mandhari  
Regional Director



## Cumulative geographic distribution of Measles cases in the EMR countries October 2019



**Just 3 countries including Iran, Bahrain and Oman have certified by WHO as measles and rubella eliminated countries in EMR region.**



0

1000

2000 km

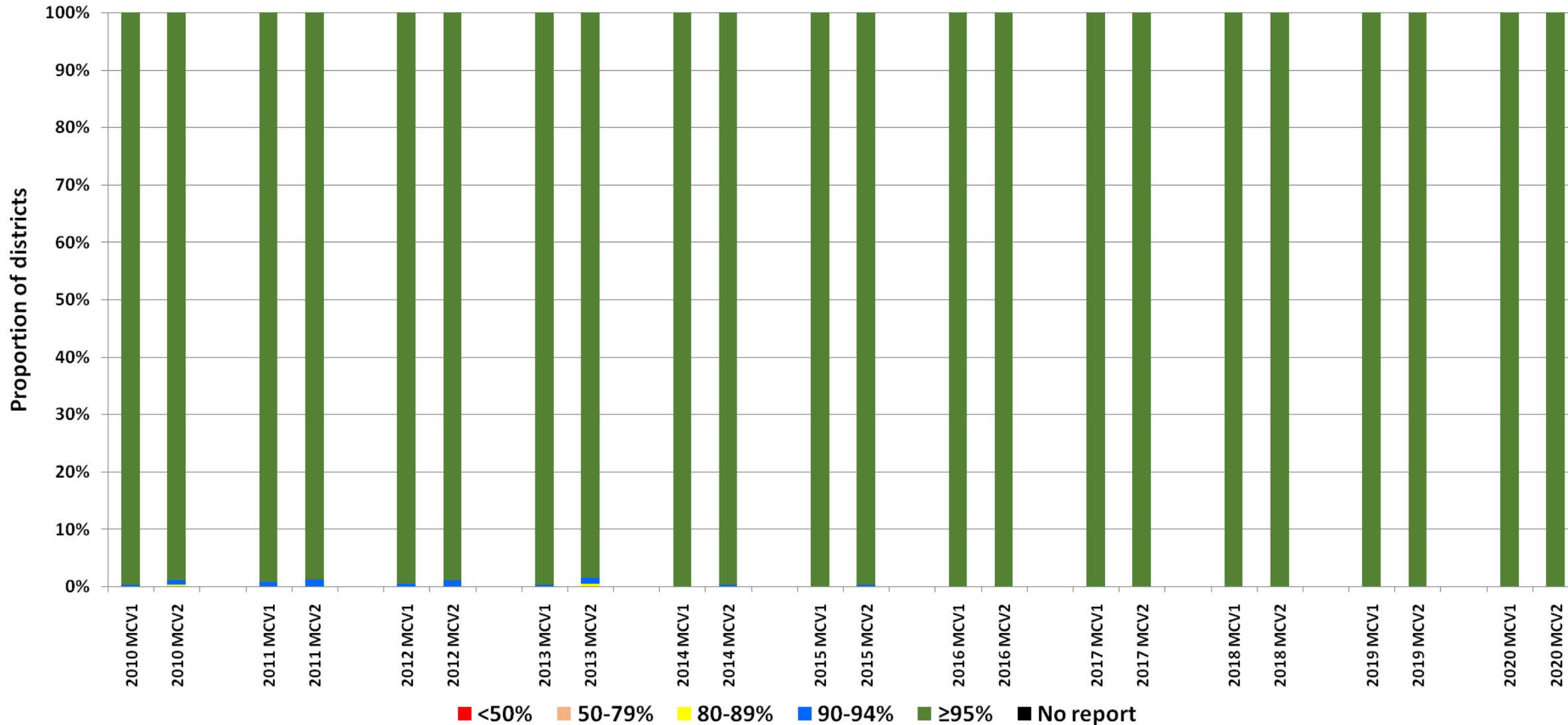
■ Measles Lab confirmed

▲ Measles Epi Linked

● Measles Clinically compatible



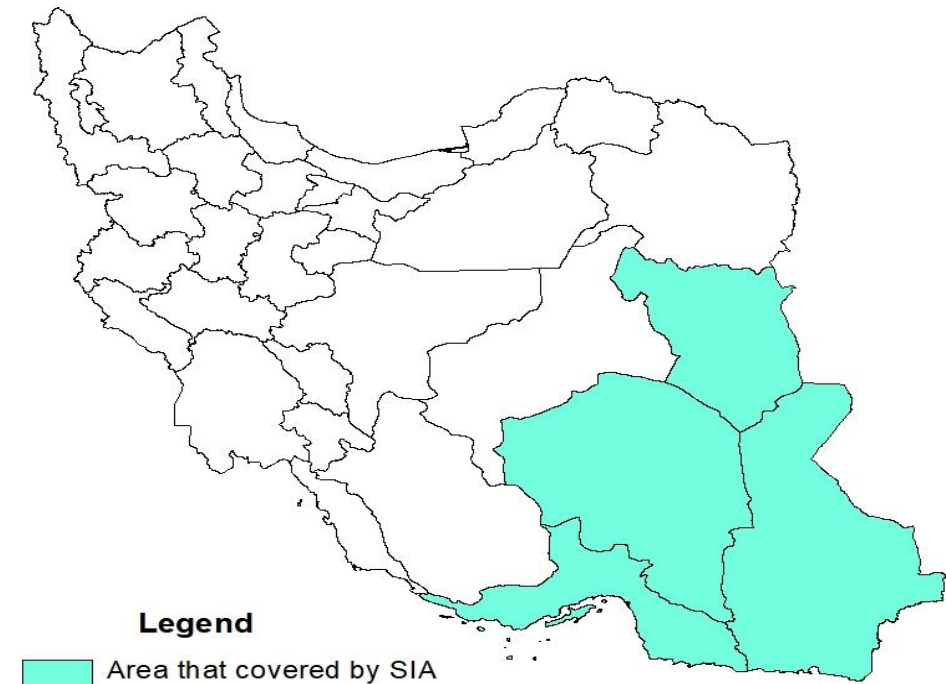
# MCV1/MCV2 Coverage by District, Iran 2010-20



# Outbreak Response in Southeastern part of Iran, Nov 2021

- Based on epidemiology of measles and review of immunity of people, NITAG advised to conduct a campaign by MMR vaccine in high-risk provinces to cover any immunity gap.
- 1126000 children in 9 m-7 y old will be vaccinated.
- 50 districts were involved in this SIA.

Area which covered by MMR SIA, Nov 2021



# Measles elimination surveillance system, Definitions

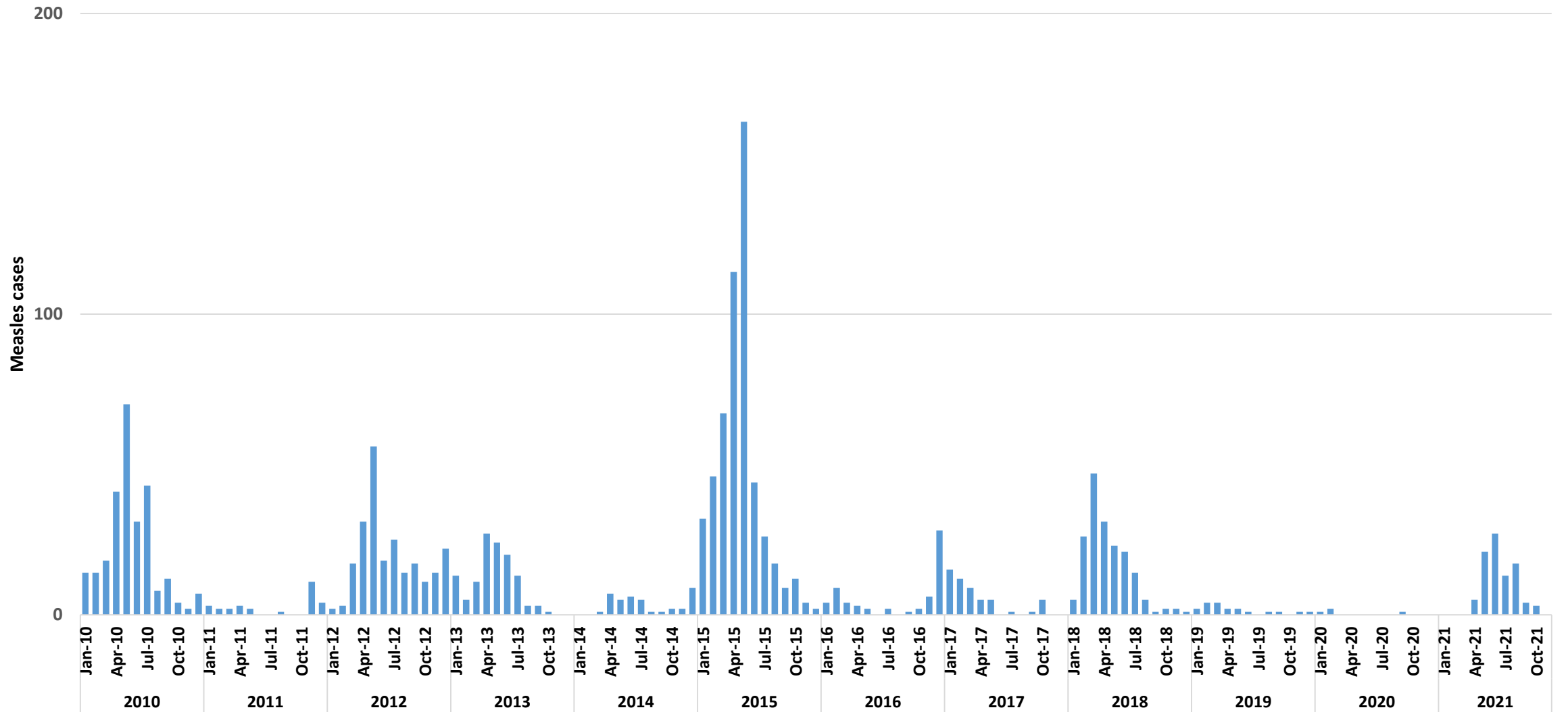
- **SUSPECTED CASE:**

- A suspected case is one in which a patient with fever and maculopapular (non-vesicular) rash, or in whom a health-care worker suspects measles.

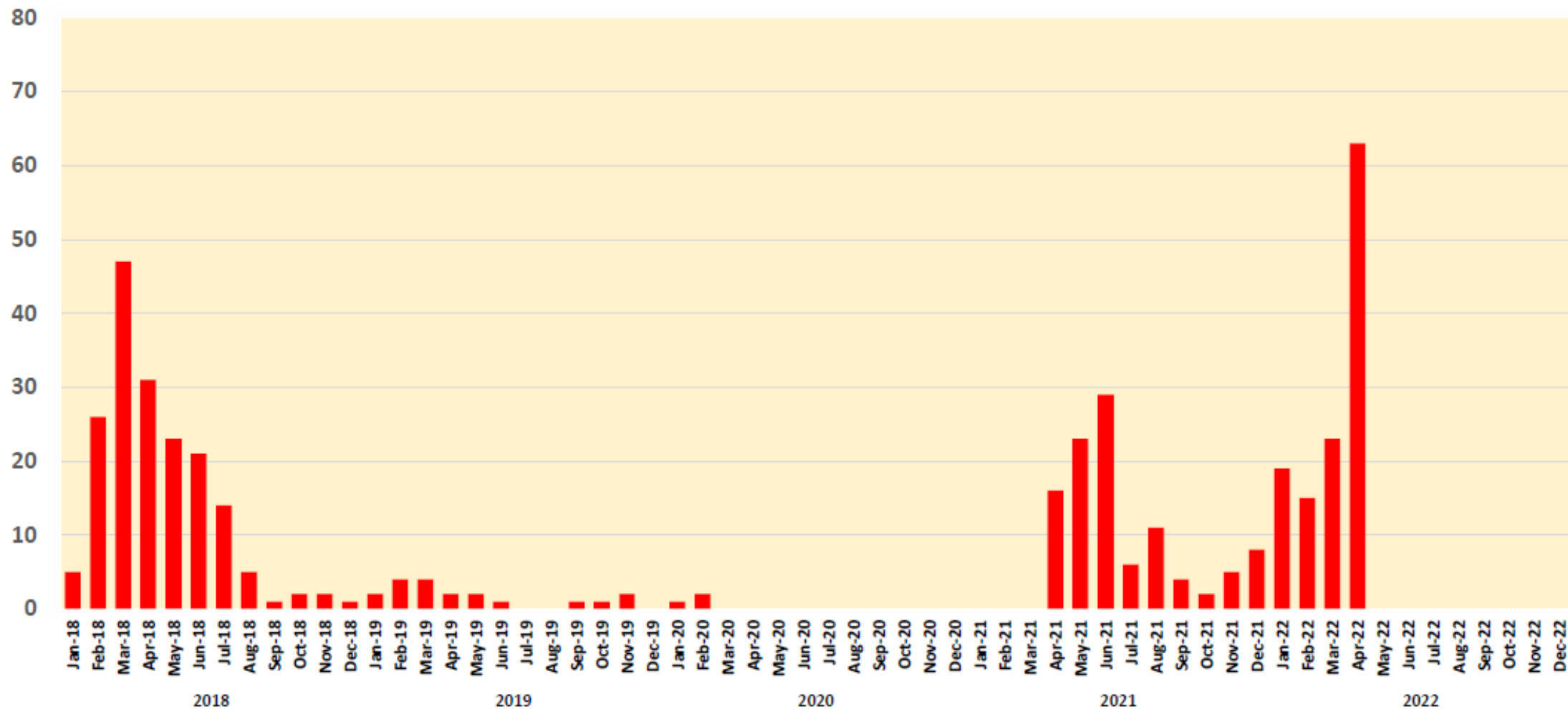
- **FINAL CASE CLASSIFICATION**

- Laboratory-confirmed measles
- Epidemiologically linked measles
- Clinically compatible measles
- Non-measles discarded case

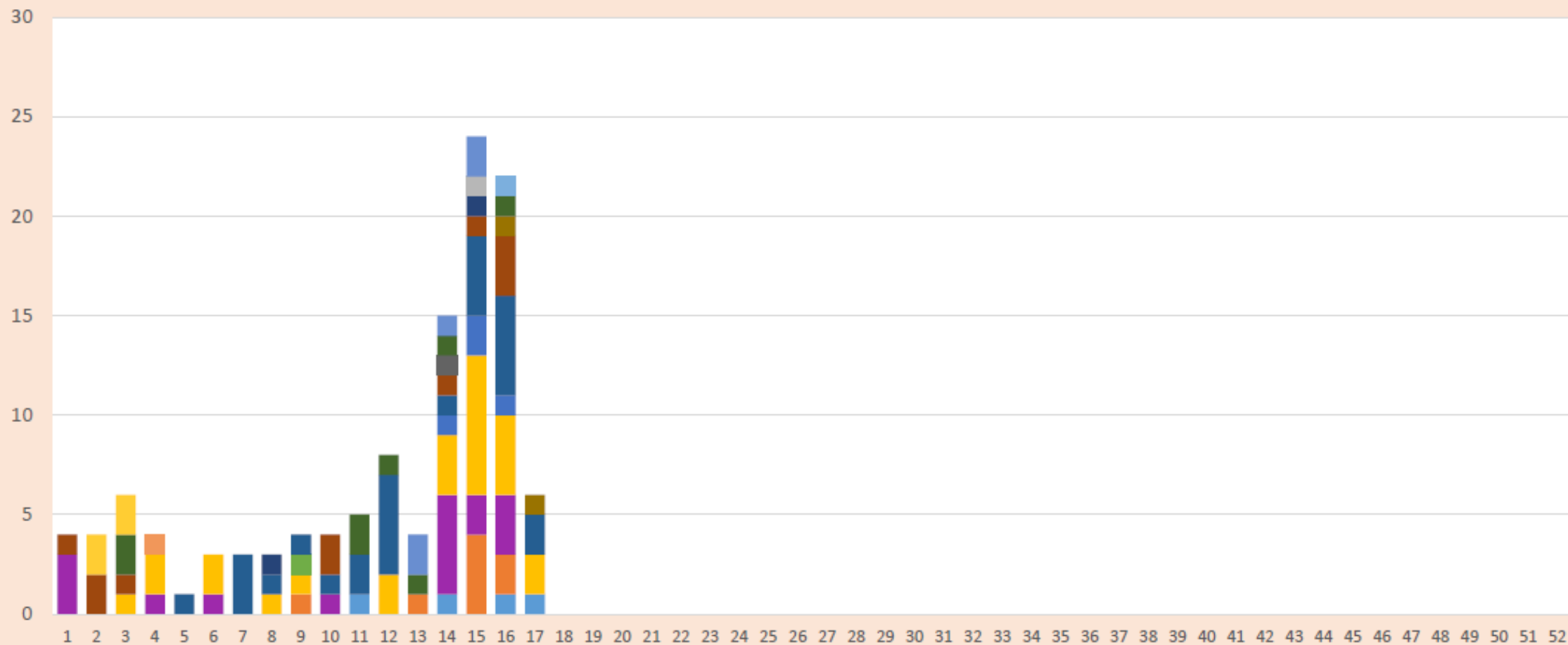
Monthly distribution of Measles cases , Iran 2010-21



## Trend of Measles ,Iran-2018-2022(120 Cases)



Measles lab confirmed epi curve by province Iran20222 (120 Cases)



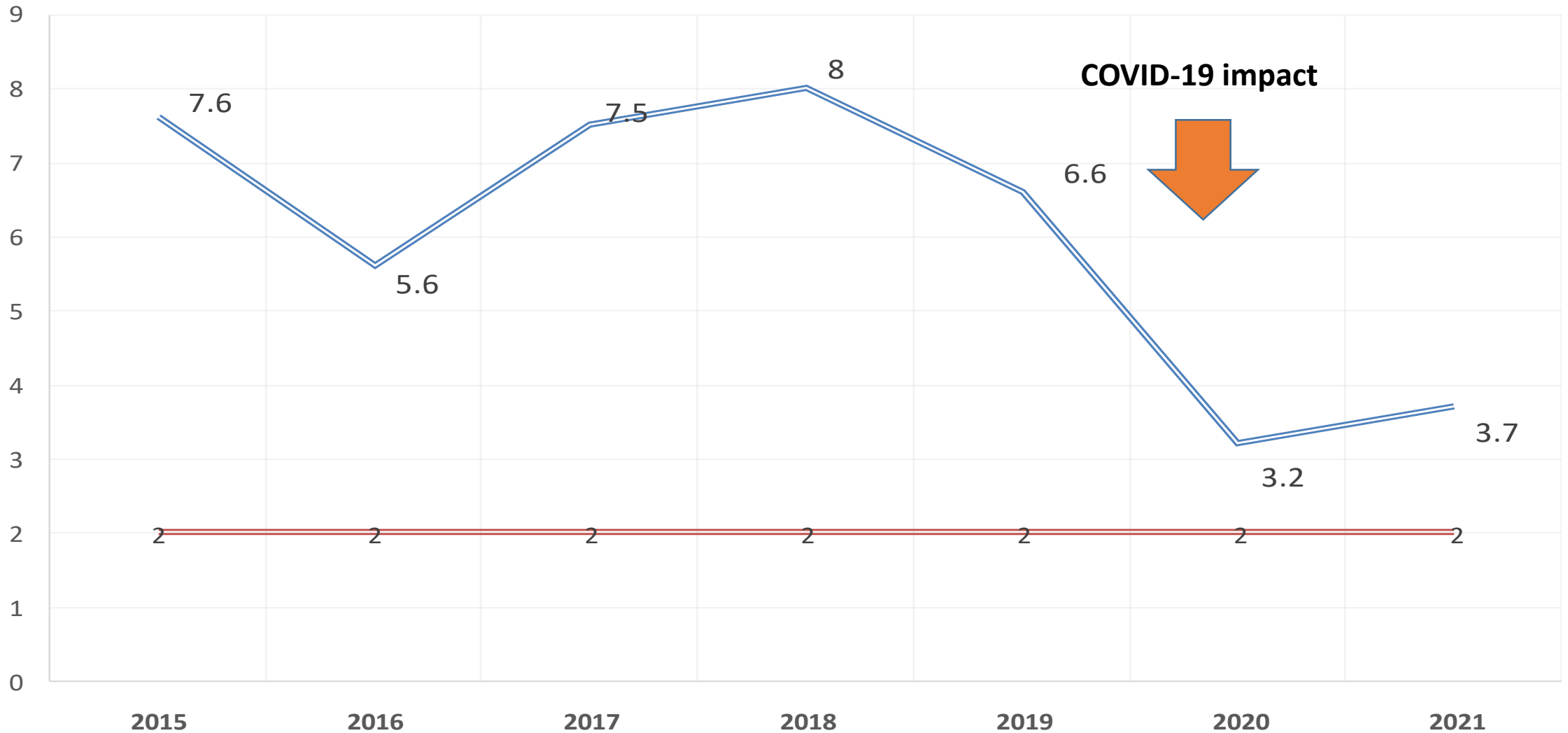
Esfahan
Alborz
Bushehr
Tehran
rasan Razavi
Semnan

Sis&Balu
Fars
Qazvin
Qom
K ordestan
Kerman

Kermanshah
Golestan
MazandaranHormozgan
Yazad

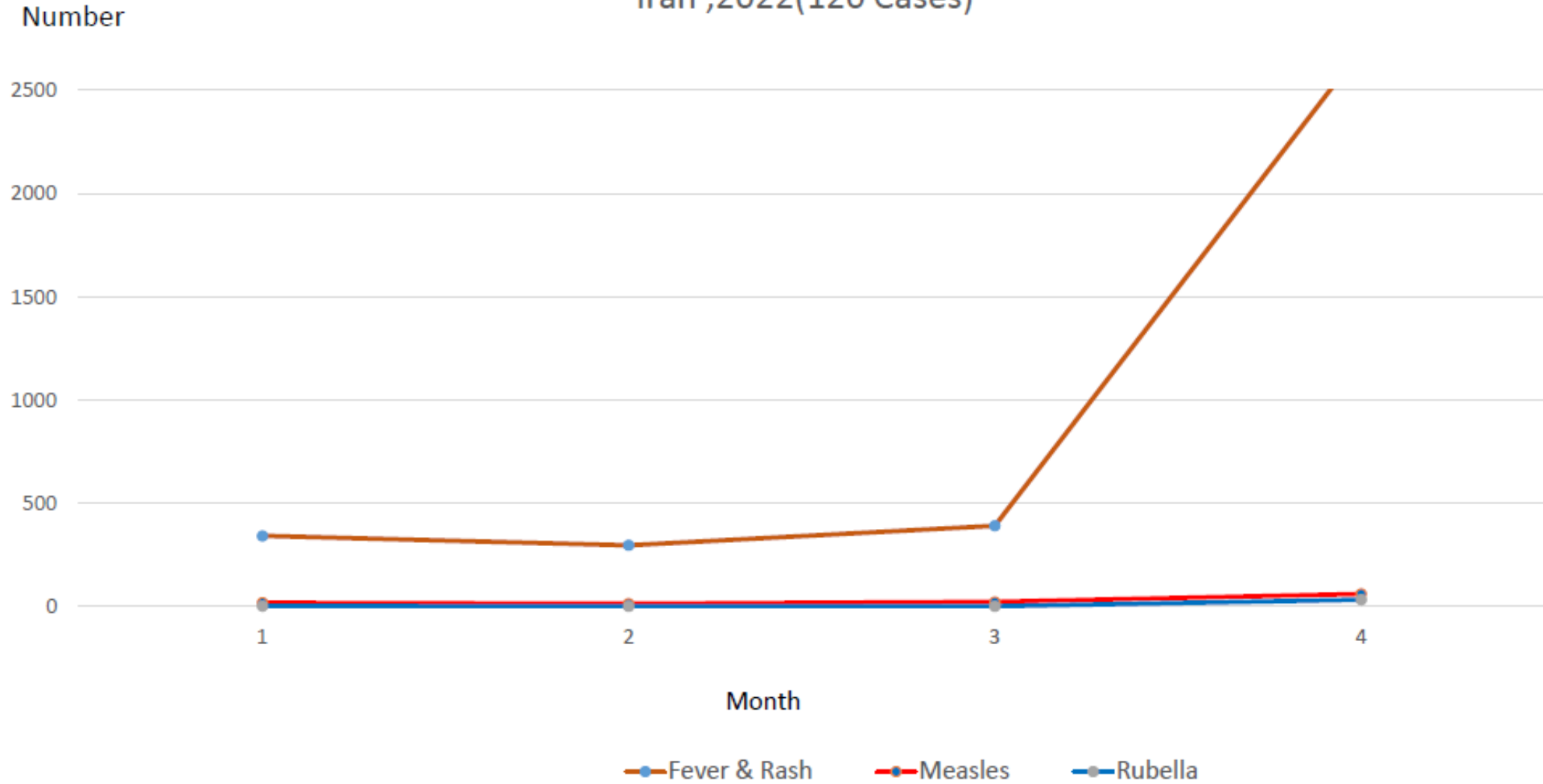
# TREND OF REPORTING RATE OF SUSPECTED MEASLES CASES IN IRAN, 2015-2021 (10 MONTHS)

Per 100000

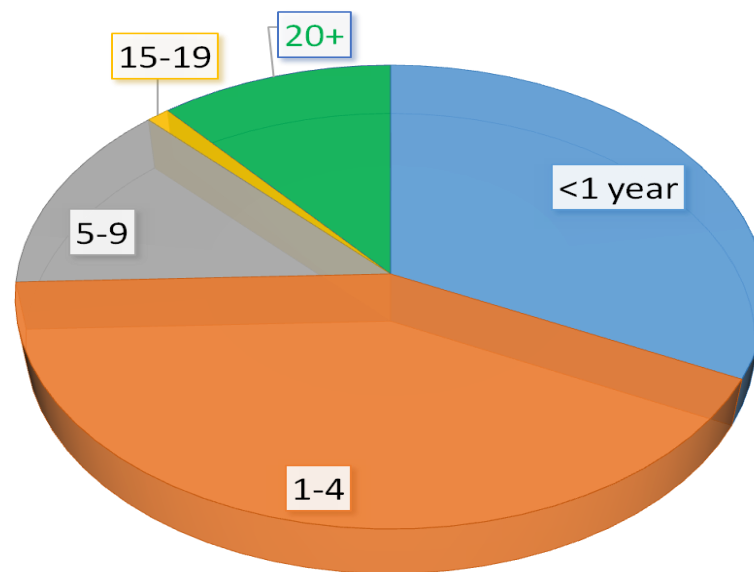




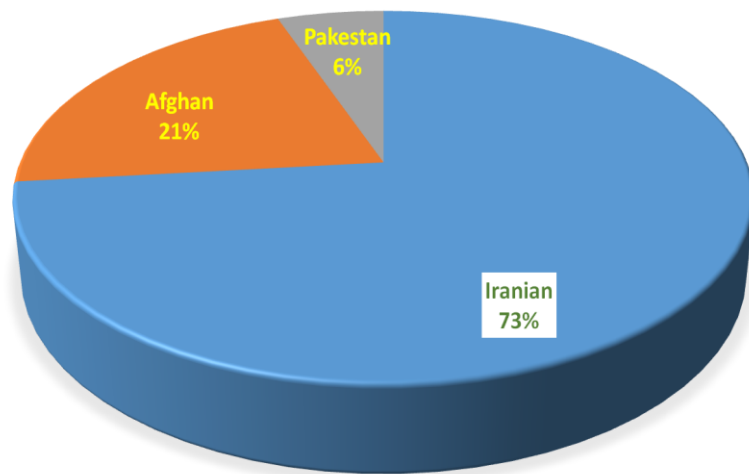
Number of Fever & Rash,(Measles and rubella)  
Iran ,2022(120 Cases)



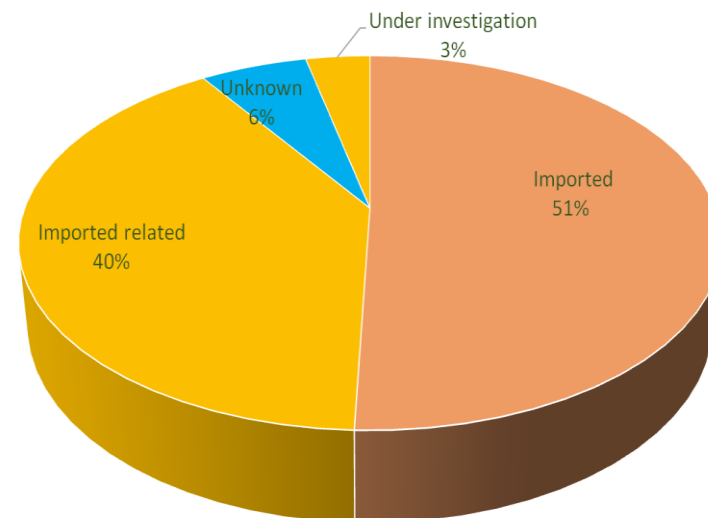
# Measles cases by age groups, Nationality and Source of Infection Iran, 2021



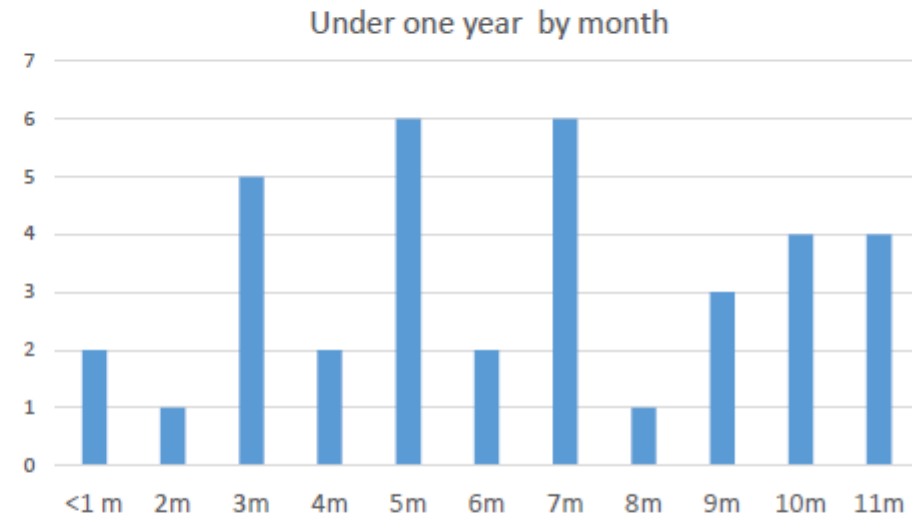
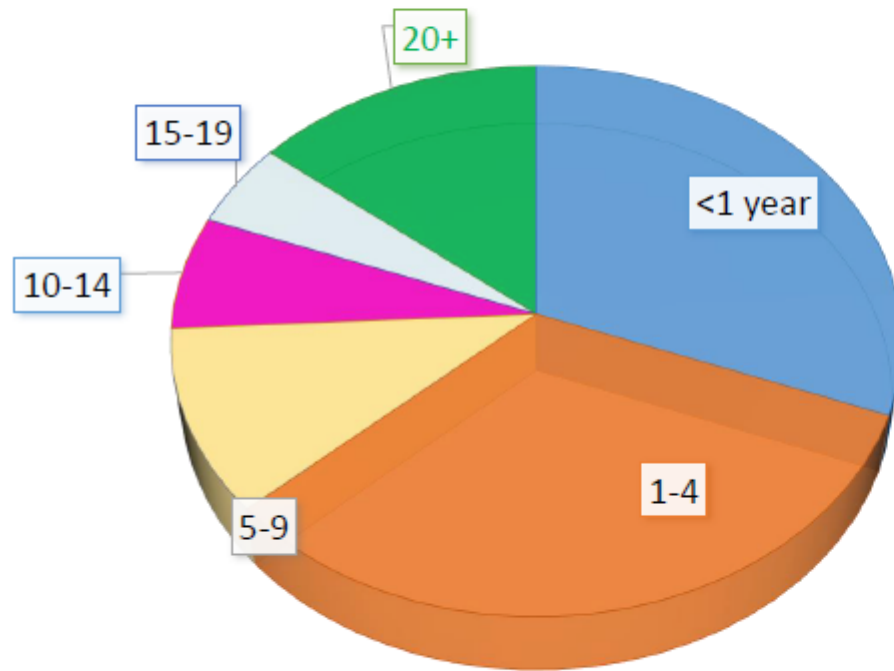
MEASLES BY NATIONALITY ,IRAN-2021(AS OF 26 OCT)



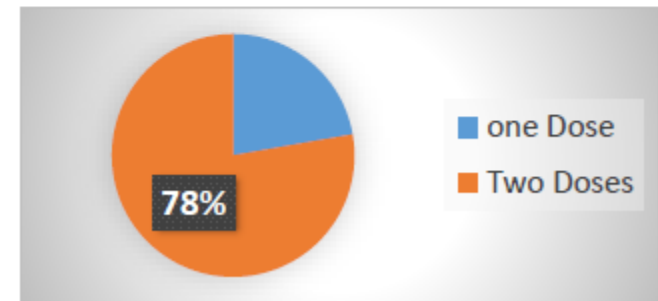
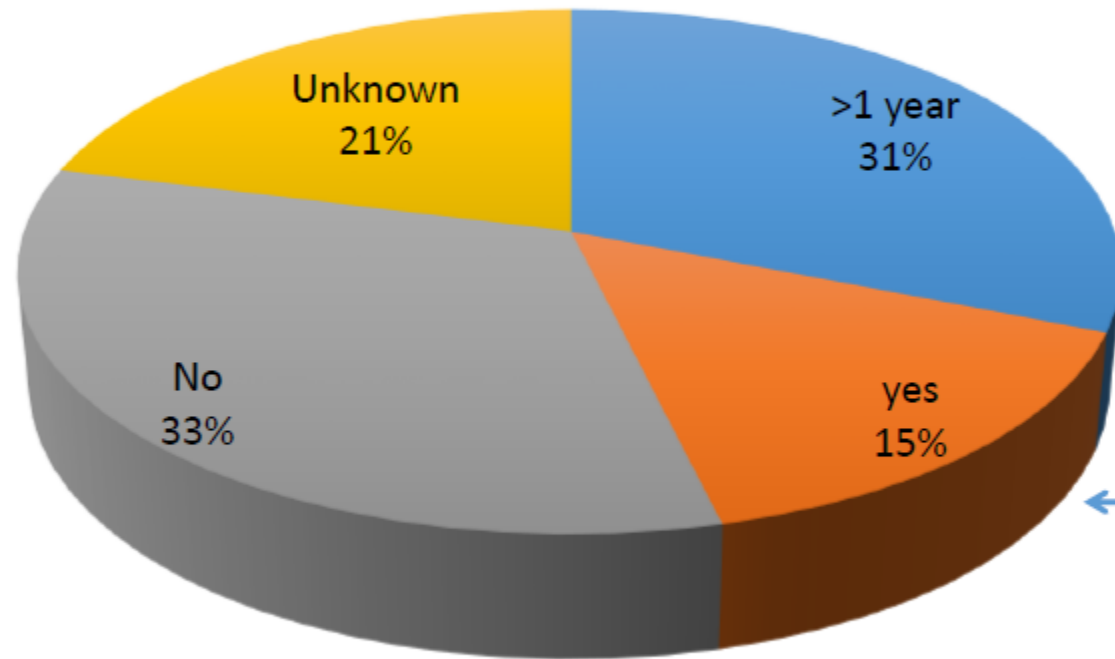
Measles by Source of Infection, Iran, 2021(As of 23 September)



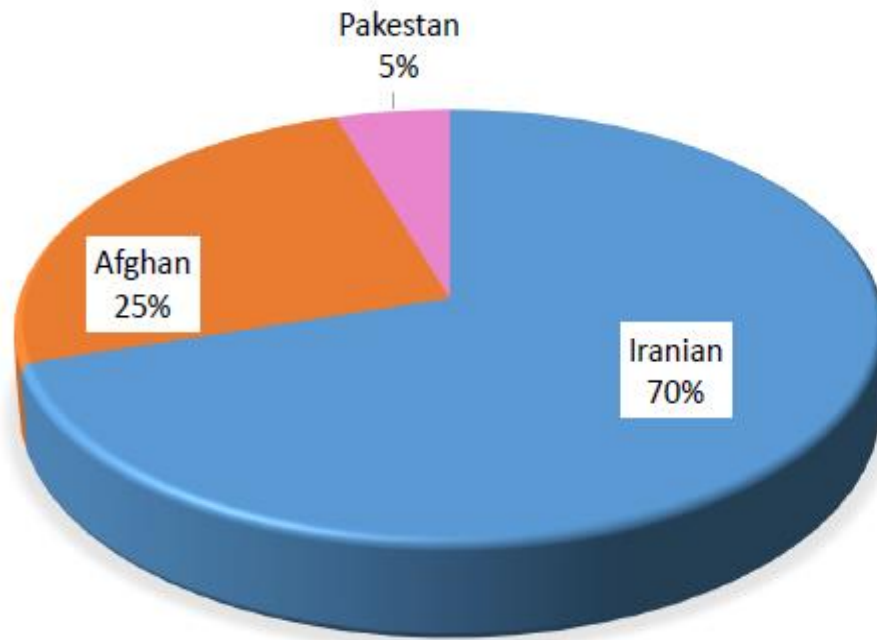
## Lab confirmed Measles by age group in Iran, 2022 (120 Cases)



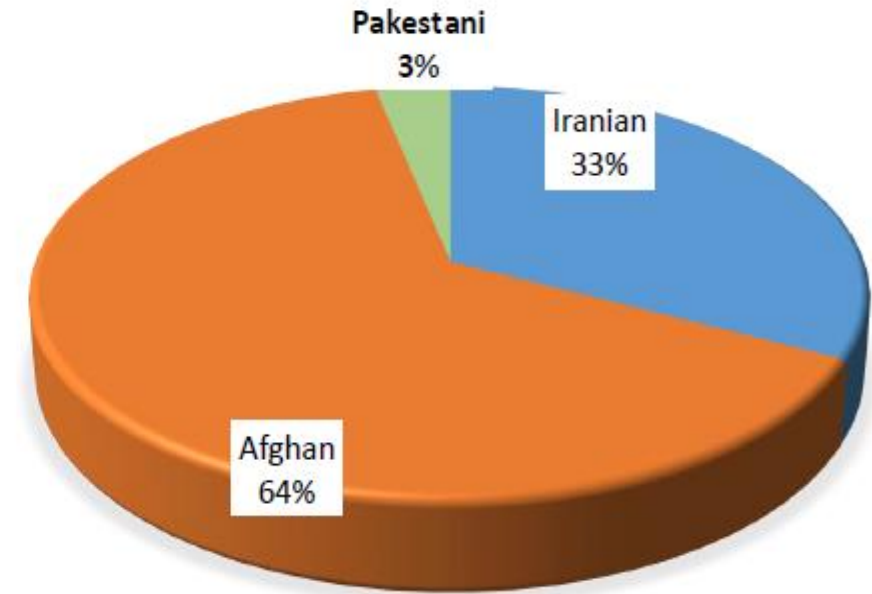
Measles by history of immunization-Iran2022  
(120 cases)



MEASLES LAB CONFIRME BY NATIONALITY IN  
IRAN,2021



MEASLES LAB CONFIRME BY NATIONALITY IN  
IRAN,2022(120 CASES)



# Measles Cases With Genotype and Distinct Sequence ID (2018-2021)

Distinct Sequence ID	2018												2019												2020												2021												
	Month												Month												Month												Month												
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	
MVs/Kabul.AFG/20.2014/3.4298 [B3]				2									2	1	1										1	2																							
MVs/Dublin.IRL/8.16/1/With Distinct Seq ID 4306 [B3]																																																	
MVs/Islamabad.PAK/1.13/1.4194 [B3]	1	14	26	3	2	7	9																																										
MVs/Tonbridge.GBR/5.14/1/ With Distinct Seq ID 4780 [B3]																																																	
B3 variant with distinct seq ID 1310				1					2																																								
B3 variant with distinct seq ID 4518		1	2	1																																													
B3 variant with distinct seq ID 5460			1																																														
B3 variant with distinct seq ID 5461			1																																														
B3 variant with distinct seq ID 5463			1																																														
B3 variant with distinct seq ID 5464					1						1	1				1																																	
B3 variant with distinct seq ID 5465				2																																													
B3 variant with distinct seq ID 5467					2																																												
B3 variant with distinct seq ID 5640				1																																													
B3 variant with distinct seq ID 5704			1																																														
B3 variant with distinct seq ID 5705			1																																														
B3 variant with distinct seq ID 5707			2																																														
D8 variant with distinct seq ID2266																									1	1																							2

## Conclusion

- There has been strong political commitment for all elements of primary health care in particular immunization service.
- Presence of M& R strategic plan and outbreak preparedness and response plan
- Risk of frequent importation from neighboring countries is very high so the country is fully vigilant and prepared to respond any risk that threaten its measles and rubella elimination status



# Way Forward

- Maintaining high immunization coverage (>95%) with 2 doses of MMR vaccine at all districts.
- Considering high risk areas/groups to prevent immunity gap.
- Maintaining standard surveillance system at district level to decrease cases with unknown source.
- Strengthening molecular epidemiology in outbreak investigation.
- Measures to address imported and import-related cases.

# Thank you

