



# **The influence of the media on vaccines:**

## **Measles mumps rubella (MMR) vaccine**

# MMR scare

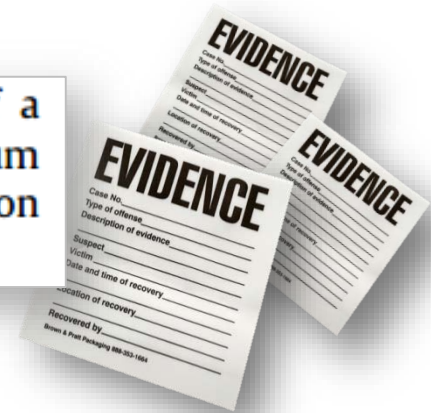
- A 1998 publication in *The Lancet* by Andrew Wakefield suggested there were links between the MMR vaccine and symptoms similar to autism
- There was heavy media coverage about this issue, and much of the public began to fear the safety of the MMR vaccine
- Andrew Wakefield's findings were fraudulent – the paper has been discredited and retracted from *The Lancet*. Wakefield is also barred from practising medicine in the UK



# The evidence...

- Many studies have found no links between the MMR vaccine and the subsequent development of autism or autism spectrum disorders (ASD)...
- A meta-analysis (a statistical method to compare data in a wide range of studies) was carried out by Taylor *et al.*, (2014) and they write...

In conclusion, this meta-analysis provides no evidence of a relationship between vaccination and autism or autism spectrum disorders and as such advocate the continuation of immunisation programs according to national guidelines.



Paper: Taylor, et al., (2014) Vaccines are not associated with autism: an evidence-based meta-analysis of case-control and cohort studies.

*Vaccine* **32**(29):3623-9

Photo credit: crime-scene.com

# The Wakefield Study

"There is no support for a connection between MMR and atypical autism"

Gillberg and Heijbel  
*Autism* (1998)



No evidence for measles, mumps and rubella vaccine-associated inflammatory bowel disease or autism in a 14 year prospective Study.

Peltola *et al. The Lancet* (1998)



"These results provide no support for the hypothesis of an association between IBD and autism."

Fombonne, *The Lancet* (1998)



Rise in diagnosed autism cases pre-dated use of MMR vaccine

Taylor *et al.*, (1999) *The Lancet*

No difference in age at diagnosis between cases vaccinated or unvaccinated by 18 months of age.

Taylor *et al.*, (1999) *The Lancet*

"... the project reported in the Lancet paper was established with the purpose to investigate a postulated new syndrome and yet the Lancet paper **did not describe this fact at all**. Because you drafted and wrote the final version of the paper, and **omitted correct information** about the purpose of the study or the patient population, the Panel is satisfied that your conduct was **irresponsible** and **dishonest**."

The General Medical Council Report on the findings

TIMESONLINE

Fall of Andrew Wakefield, 'dishonest' doctor who started MMR scare



**CONFIDENTIAL**



# The result of the **MMR** scare

- What do you think happened to rates of uptake of the MMR vaccine?
- How would this affect the rates of measles mumps and rubella infections in the population?



# What does the data show?

- We can review the data from 1998 to the present day to see how this media event affected vaccine and disease rates.
- Using the data provided, plot the graph to display MMR jab rates and measles rates in the UK population following the MMR scare.

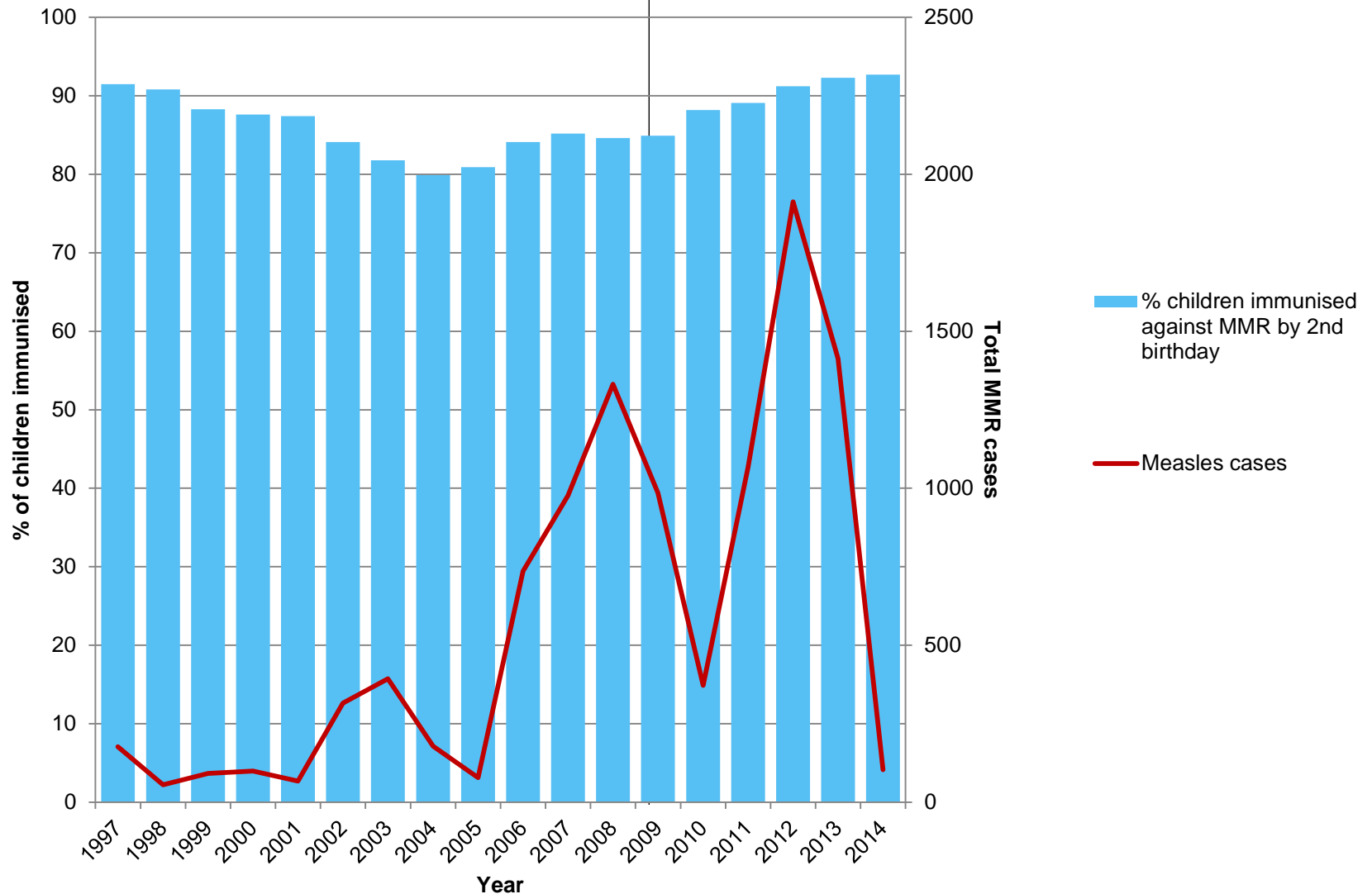


# Tips for plotting the graph

- Plot the vaccine uptake as a bar graph, and measles cases overtop as a line graph
- Remember to label your axes and give the graph a title
- Use an appropriate scale on each of the axes
- Make sure you label the axes with units of measurement i.e. date, % ml kg etc..
- Make the best use of the space on your graph paper to make the graph as clear as possible to interpret

# Review: the data

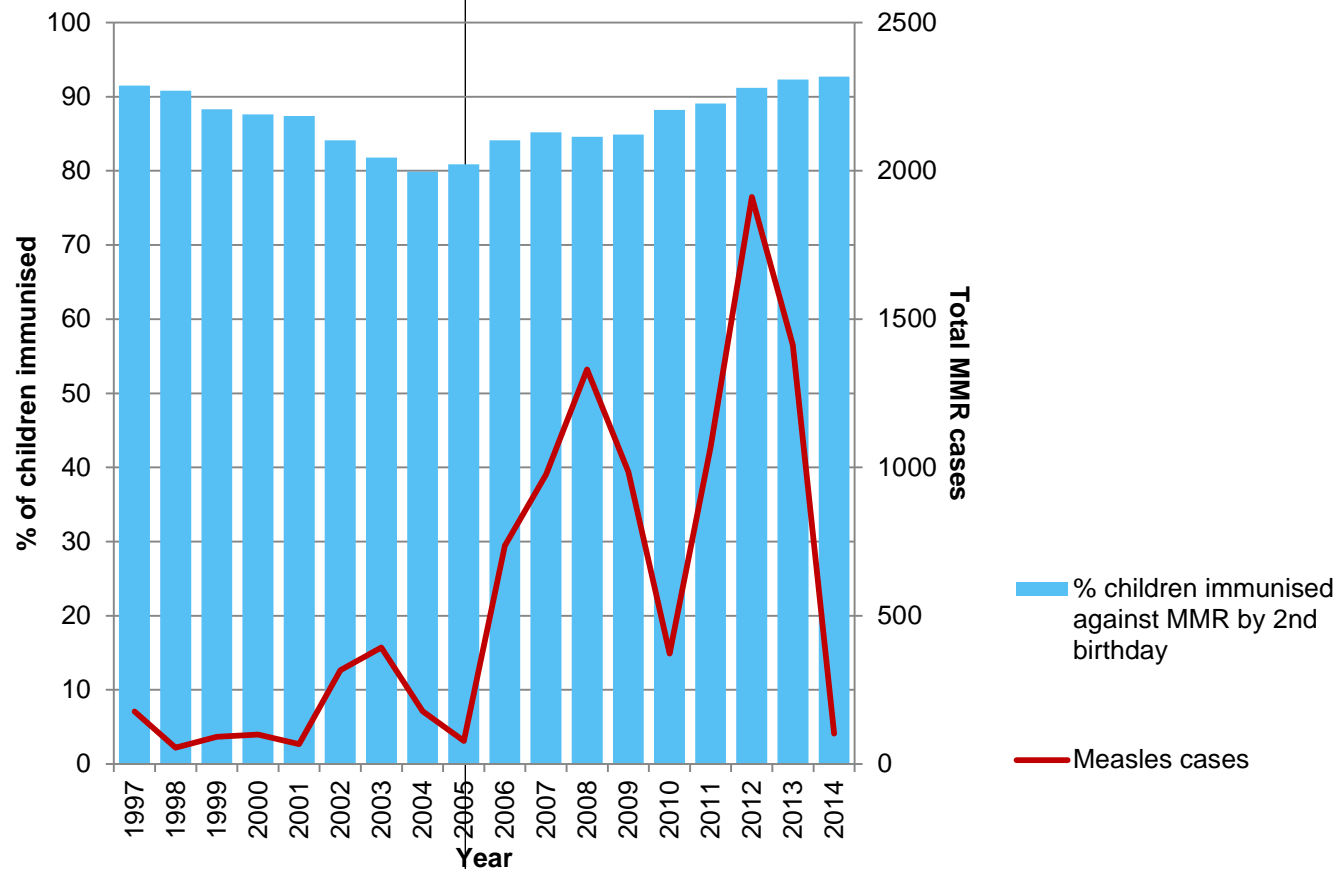
## MMR Vaccination uptake and confirmed measles cases





# Review: the data

**MMR Vaccination uptake and confirmed measles cases**



Does your  
graph look  
similar?

Why or why  
not?



# Interpreting the graph

- Review answers to the student worksheet
- Did you hypothesise correctly at the beginning of this lesson?