

B C V C  
Bristol Childrens Vaccine Centre  
Tinyurl.com/vzv4all  
**Varicella vaccine for all children**  
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Lisbon 8<sup>th</sup> March 2015  
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B C V C **Quiz T/F??**

- Most deaths with & severe cases of varicella occur in people with underlying illnesses
- Use of varicella vaccine at low levels of coverage might increase problems not reduce them
- Universal use of varicella vaccine can make rates of zoster/shingles go up

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B C V C **Names**



- Chicken pox
- Varicella
- Shingles
- Zoster
- HHV3


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B C V C **Faces**



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B C V C **Immunise?**




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B C V C **You can't see the wood for the trees...**



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**B C V C** John Enders...



- Oral polio
- Measles
- Rubella
- Mumps &
- Varicella

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**B C V C** Michiaki Takahashi



- V-OKA strain
- Generated by serial passage
- 42 bases are different from wild type
- 15 in IE62 - major transactivator

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**B C V C** Varicella Vaccine

- Single virus vaccine or as MMRV
- 2 dose course at least three months apart
- Live virus vaccine - but now also recommended in moderately immunocompromised patients

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**B C V C** US recommendations

- Universal - 2 doses
  - Dose 1 12-15 months
  - Dose 2 4-6 years (can be and some advantages to giving sooner)

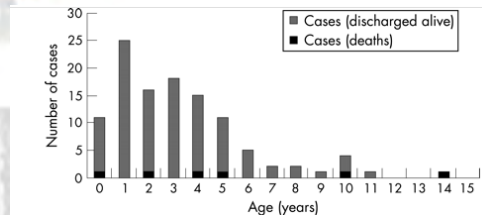
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**B C V C** UK recommendations

- Non-immune health care workers & lab staff
- Household contacts of immunocompromised patients

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**B C V C** UK severe varicella in children surveillance



Age (years)	Cases (discharged alive)	Cases (deaths)
0	10	0
1	25	0
2	16	0
3	18	0
4	15	0
5	11	0
6	5	0
7	3	0
8	2	0
9	1	0
10	1	1
11	1	0
12	1	0
13	1	0
14	1	0
15	1	0

"Most complications, excluding deaths, occur in otherwise healthy children and thus would be preventable only through a universal childhood immunisation programme."


Cameron et al 2007 Arch Dis Child

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**B V C** Who dies of varicella?



In the early 1990s, an average of 4 million people got chickenpox, 10,500 to 13,000 were hospitalized (range, 8,000 to 18,000), and 100 to 150 died each year. **Most of the severe complications and deaths from chickenpox occurred in people who were previously healthy.**

<http://www.cdc.gov/chickenpox/surveillance.html>



**B V C** Questions about varicella vaccine

- Does it work?
- Is there herd immunity?
- Does it increase zoster?





**B V C** Case control study: The vaccine works

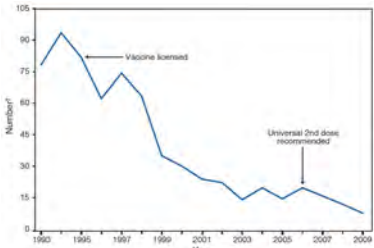
Case Subjects n = 71 (%) Controls n = 140 (%)

Varicella vaccine	Case Subjects n = 71 (%)	Controls n = 140 (%)
0 doses	5 (7.0)	1 (0.7)
1 dose	66 (93.0)	117 (83.6)
2 doses	0 (0.0)	22 (15.7)


Shapiro ED JID 2011



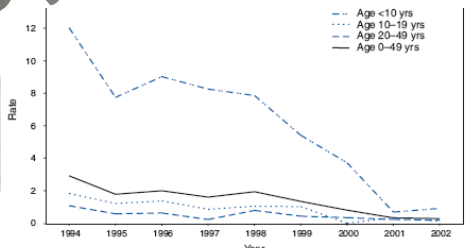
**B V C** Varicella cases in 4 US states - in 1000s




CDC MMWR 2011



**B V C** Varicella hospitalisations



ACIP MMWR 2007



**B V C** Deaths

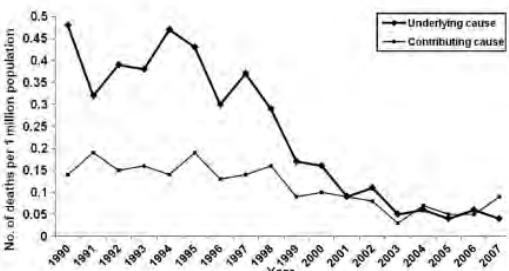

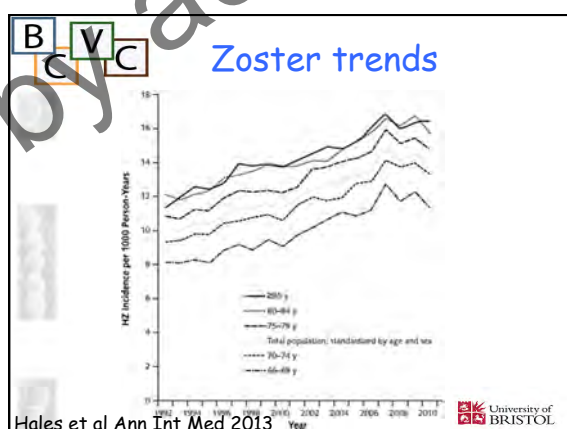
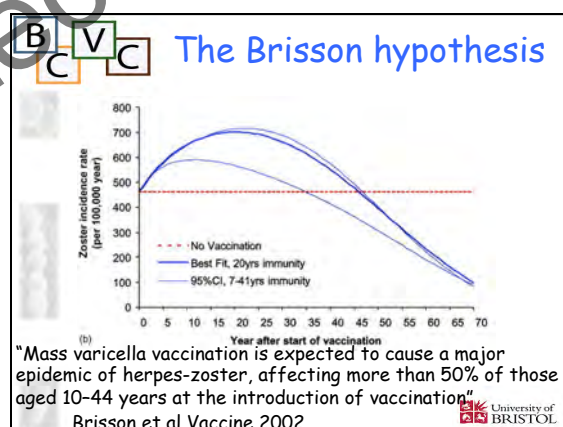
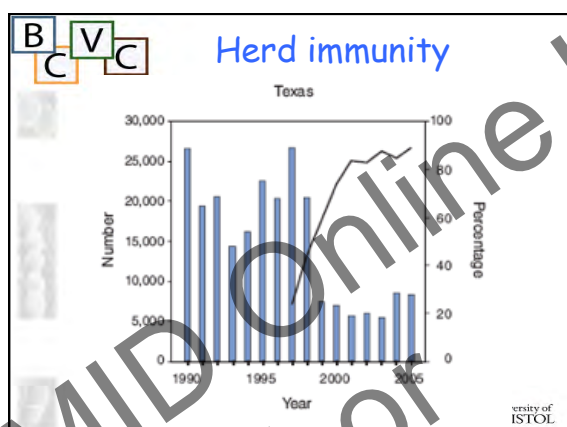
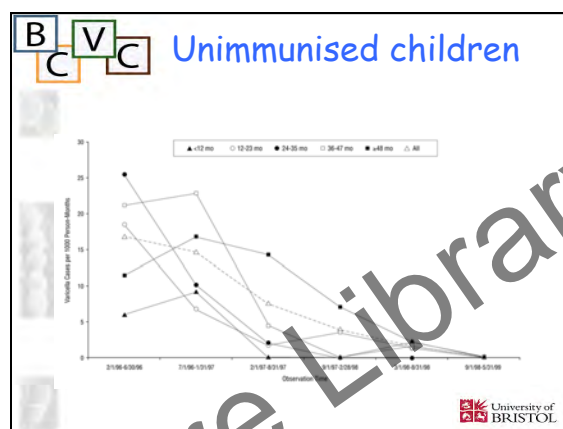
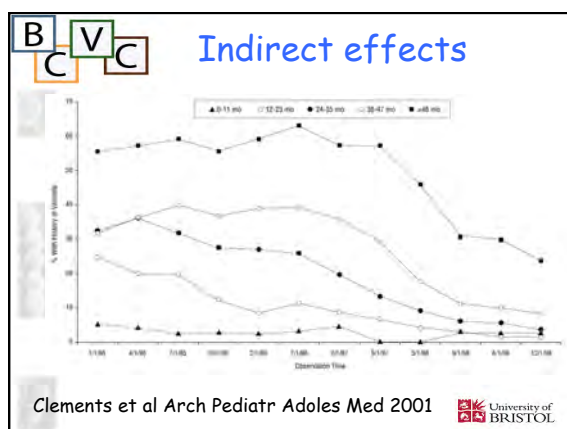


FIGURE 1  
Varicella-related mortality rates in the United States, 1990–2007 (age adjusted to the 2000 US population).

Marin et al Pediatrics 2011





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## Varicella

- Potentially preventable for >30 years
- Time to start preventing it

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