## CPV-2 Timeline

CPV-2 Emerged in US, Europe

Virus Isolation, Electron Microscopy, Immunoflourescence, Hemagglutination



vaccines, low efficacy

Homologous (canine)

modified live vaccines,

good efficacy

Heterologous (feline and mink)



1979

1980

1981

1984

1985

1994

1996

1997

2000

2003

2005

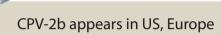
1978



Hemagglutination Inhibition, Serum Virus Neutralization

Worldwide distribution, Panzootic

CPV-2a appears in US, Europe



CPV vaccines approved in US now contain CPV-2 or CPV-2b

Many canine parvovirus vaccines

proven ineffective

Commercial vaccines increased infectivity and efficacy

Laboratory ELISA developed

PCR developed to detect all CPV-2 variants, but not used clinically

antibody detection (TiterCHEK)

Development of ELISA for point of care



CPV-2c first found in Italy

Fecal antigen capture ELISA developed 2001 for point of care use (Witness, SNAP)



with CPV-2b

CPV-2c widespread

in Europe, along

CPV-2c found in US

CPV-2c reported widely in the US and South America 2006



Dot Blot ELISA developed for point of care antibody detection (Vaccicheck)

2007

to detect CPV virus, but expensive

2011 prevalent variant in US

CPV-2c becomes most

CPV-2 and all variants

2013 are present in the US

