

Discussion Section 1

Year	# Cancer deaths (γ)	2 ways to compare
1970	331,000	old number γ
1985	462,000	γ_{new}

AMS 7
9 Apr 18

① (absolute)

$$(\gamma_{new} - \gamma_{old}) = 462,000 - 331,000$$

in 1985 in U.S. there were 131,000 more cancer deaths than in 1970

② (relative)
comparison #1

$$\frac{\gamma_{new} - \gamma_{old}}{\gamma_{old}} = \frac{+131,000}{331,000}$$

significant
figure (sig figs) (5fs)

$$= \frac{(131)}{(331)}^3$$

(131),000 has only 3 (5fs)

3 (5fs)

$$\frac{0.0(131)}{331}$$

$$= 0.39577039..$$

$$\div 0.396 \text{ } 39.6\%$$

from 1970 to 1985, # cancer deaths ⁽²⁾
in U.S. went up by 39.6%

relative
comparison
#2

$$\frac{Y_{old} - Y_{new}}{Y_{new}} = \frac{-131,000}{462,000}$$

from 1985 to

1970, # cancer

deaths in U.S. went

down by 28.4%

$$= \frac{-131}{462}$$

$$= -0.284$$

$$= -28.4\%$$

year	# cancer	U.S. pop.
1970	331,000	?
1985	462,000	?

we think that U.S.

pop. didn't rise anywhere near as fast as 39.6% from 1970 to 1985;

Therefore some but not all of ③
the 39.6% increase is just from
population growth. Q: how could #
cancer deaths/year

go up even if treatment
improving?

A: U.S. pop. is aging
& cancer increases

A₂: we're better in prevalence with
at finding cancer & correctly
attributing cause of death age

$\frac{\text{cancer \# deaths}}{n}$

cancer patients

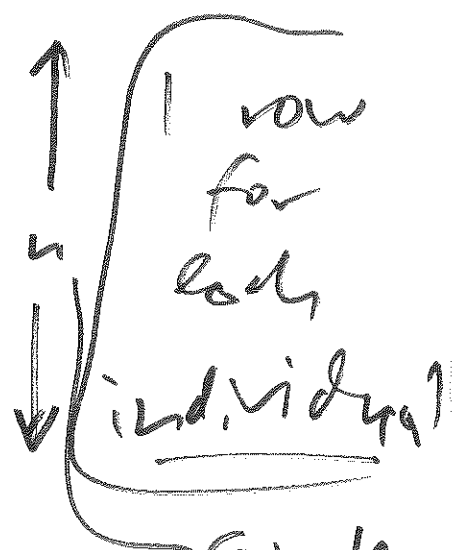
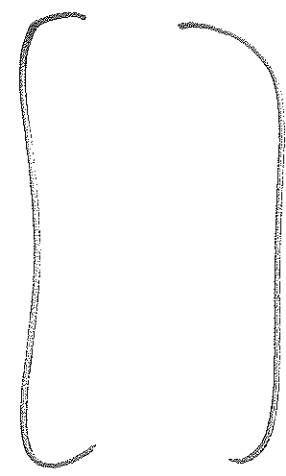
5-year survival rate

→ access to good
health care may change
over time

basic data set

ex.
litter size
in foxes

sample the observed individuals



sample size

1 column

for each variable measured on the individuals

foxes
2
7
4
⋮

1 row for each litter

quant. discrete

	0	1	2
3 (9)	0	1	2
more?	no	yes	yes
# foxes	0	1	2
	⋮	⋮	⋮

qual. discrete

qual.

1 row for each litter

3(1)

3(2)

kind
turtle
snake
turtle
bird
1
1

1 row
for each
animal

phosphate
concentration

0.722

~~1.48~~

0.031

↑

n = 60

↓

1 row
for
each
stream
location

quant. continuous

qual. not dichotomous

nominal ← no ordering
in possible
values