Zero-inflated Poisson regression

Though we can run a Poisson regression in R using the `glm` function in one of the core packages, we need another package to run the zero-inflated poisson model. We use the **pscl** package.

```
summary(m1 <- zeroinfl(count ~ child + camper |
     persons, data = zinb))
```

Zero-inflated Poisson regression

```
##
## Call:
## zeroinfl(formula = count ~ child + camper | persons, dat
##
## Pearson residuals:
##     Min      1Q  Median      3Q     Max
## -1.237 -0.754 -0.608 -0.192 24.085
```

Zero-inflated Poisson regression

```
## Count model coefficients (poisson with log link):
##             Estimate Std. Error z value Pr(>|z|)
## (Intercept)   1.5979     0.0855   18.68   <2e-16 ***
## child        -1.0428     0.1000  -10.43   <2e-16 ***
## camper1       0.8340     0.0936    8.91   <2e-16 ***
```

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```
## Zero-inflation model coefficients (binomial with logit l
##             Estimate Std. Error z value Pr(>|z|)
## (Intercept)    1.297      0.374    3.47  0.00052 ***
## persons       -0.564      0.163   -3.46  0.00053 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1
##
## Number of iterations in BFGS optimization: 12
## Log-likelihood: -1.03e+03 on 5 Df
```

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- Below the model call, you will find a block of output containing Poisson regression coefficients for each of the variables along with standard errors, z-scores, and p-values for the coefficients.
- A second block follows that corresponds to the inflation model.
- This includes logit coefficients for predicting excess zeros along with their standard errors, z-scores, and p-values.