

```
#!/usr/bin/env perl

use 5.032;
use strict;
use warnings;

my $population = 67_100_000; # UK population
my $appendix_inc = 151; # incidence of 151 per 100_000 per year
my @trauma_inc_array =
  ( 1, 10, 100, 1000, 10000 ); # 1 in whatever number specified here

say "Trauma_incidence \t Run \t No_of_appendix \t No_of_trauma \t
No_of_traumatic_appendicitis ";

for my $trauma_inc (@trauma_inc_array) {

  for my $run ( 1 .. 1000 ) {
    my $appendix_total = 0;
    my $trauma_total = 0;
    my $traumatic_appendix_total = 0;

    for ( 1 .. $population ) {
      my $appendix_prob = int( rand(100_000) ) + 1;
      my $trauma_prob = int( rand($trauma_inc) ) + 1;
      my $appendix_day = int( rand(365) ) + 1;
      my $trauma_day = int( rand(365) ) + 1;

      $appendix_total += 1 if ( $appendix_prob <= $appendix_inc );
      $trauma_total += 1 if ( $trauma_prob == 1 );

      if ( ( $appendix_prob <= $appendix_inc )
          and ( $trauma_prob == 1 )
          and ( $appendix_day - $trauma_day >= 0 )
          and ( $appendix_day - $trauma_day <= 3 ) )
      {
        $traumatic_appendix_total += 1;
      }
      elsif ( ( $appendix_prob <= $appendix_inc )
              and ( $appendix_day <= 3 ) )
      {
        $trauma_prob = int( rand($trauma_inc) ) + 1;
        if ( $trauma_prob == 1 ) {
          my $trauma_day = int( rand(365) ) + 1;
          if ( ( $appendix_day - $trauma_day + 365 >= 0 )
              and ( $appendix_day - $trauma_day + 365 <= 3 ) )
          {
            $traumatic_appendix_total += 1;
          }
        }
      }
      else {
        next;
      }
    }
    say $trauma_inc, "\t", $run, "\t", $appendix_total, "\t",
      $trauma_total, "\t", $traumatic_appendix_total;
  }
}
```