The Risks of Gastric-bypass Surgery at Iowa Methodist Medical Center, Des Moines

A couple of weeks ago it was announced in the newspapers that Iowa Methodist Medical Center in Des Moines would reduce the number of gastric-bypass surgeries it performs. This comes on the news that there have been 6 deaths in 225 surgeries performed at the center in the past year. We want to test Iowa Methodist’s claim that their death rate is consistent with the national death rate.

Using the Iowa Methodist data as a sample from the population of all gastro-bypass surgeries in the USA, calculate a 90% confidence for the national death rate for this type of surgery.

1. What is the parameter of interest?
2. Check the assumptions.
   (a) Are the measurements in the sample independent?
   (b) Is the sample selected randomly?
   (c) Is the sample size large enough?
3. What is the sample size?
4. Compute the death rate at Iowa Methodist. This is the sample proportion.
5. Calculate the standard error of the sample proportion.
6. Look up the critical value.
7. Calculate the margin of error.
8. Calculate the interval.
9. Explain your interval.
10. What reservations would you have in using this interval to provide information about the national death rate?