W4 Assignment MMV Question

Possible hypotheses:
A: Person has MMV
B: Person doesn't have MMV

Probability of hypotheses occurring in the population:
P(A): 0.01
P(B): 0.99

Event occurred (i.e. data obtained):
D: The randomly selected person tests positive for MMV

Likelihood of event occurring given the possible hypotheses:
P(D|A): 1
P(D|B): 0.05

Probability that the person has MMV:
$P(A|D) = (1)(0.01) / ((1)(0.01) + (0.05)(0.99))$
$P(A|D) = 0.168$

The probability they have MMV is 0.168 (16.8%).

If a friend tested positive for MMV, I would tell them that while this shows that the probability they have MMV is low, it can't actually tell them whether they have MMV or not.

Obtaining more information would create a better picture. For example, do we know more information about the symptoms of MMV (i.e. what are they, what percentage of people with MMV display them)? If so, then whether my friend is displaying MMV symptoms would further inform my calculation.