Separation holds but not sufficiency

Let A = Gender, Y = Hyperlipidemia, C = Central Obesity

A	Y	C	P
Male	Yes	Yes	0.18
Male	Yes	No	0.05
Male	No	Yes	0.17
Male	No	No	0.12
Female	Yes	Yes	0.14
Female	Yes	No	0.04
Female	No	Yes	0.18
Female	No	No	0.12

Showing separation but not sufficiency:

Probabilities of individual variables can be found in medicalDiagnosis.py, the properties below will hold for any value assignment of A, Y, and C

Showing separation but not sufficiency:

P(A | Y, C) = P(A | Y) => A is independent of C given Y

P(A | Y, C) != P(A | C) => A is not independent of Y given C

Sufficiency holds but not separation

Let A = Region, Y = central obesity, C = Hypertension

A	Y	C	P
Country side	Yes	Yes	0.15
Country side	Yes	No	0.17
Country side	No	Yes	0.04
Country side	No	No	0.12
City	Yes	Yes	0.23
City	Yes	No	0.13
City	No	Yes	0.07
City	No	No	0.09

Showing separation but not sufficiency:

Probabilities of individual variables can be found in medicalDiagnosis.py, the properties below will hold for any value assignment of A, Y, and C

P(A | Y, C) = P(A | C) => A is independent of Y given C

P(A | Y, C) != P(A | Y) => A is not independent of C given Y