The model Independencies are shown below:

(UR ⟂ LB)

(UR ⟂ OR | D)

(UR ⟂ OR | LB, D)

(LB ⟂ UR)

(LB ⟂ OR | D)

(LB ⟂ OR | UR, D)

(OR ⟂ UR, LB | D)

(OR ⟂ LB | UR, D)

(OR ⟂ UR | LB, D)

**Variable Elimination**

Using variable elimination, the probability the battery is low given that Olga reports Jason dropping the ball is 0.1413.

+-------+-----------+

| LB | phi(LB) |

+=======+===========+

| LB(0) | 0.1413 |

+-------+-----------+

| LB(1) | 0.8587 |

+-------+-----------+

**Approximate Inference**

The same probability was found using approximate inference, and as the number of samples increased, the result converged to the exact method above.

+-------+-----------+

| LB | phi(LB) |

+=======+===========+

| LB(0) | 0.1433 |

+-------+-----------+

| LB(1) | 0.8567 |

+-------+-----------+