

# Reducing diagnostic error using decision support on rounds



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## Abstract

Dahlgren Memorial Library's Clinical Informationist provides information support for clinicians at MedStar Georgetown University Hospital (MGUH) on daily patient rounds. As part of this support, the informationist assists clinicians with using the Isabel diagnostic decision support program to generate differential diagnoses for their patients. Isabel enhances the diagnostic determination process by complementing the expertise of the clinician, minimizing risk at the most important decision point in the care process. Studies suggest that clinicians who 'Isabel' their patients at an early stage are able to reduce clinical risk by ensuring that important possible diagnoses have not been missed

## Isabel

Jason and Charlotte Maude co-founded Isabel Healthcare in July 1999 after their then 3 year old daughter Isabel was nearly fatally misdiagnosed by her local hospital. Isabel spent two months in the hospital, including a month in PICU, after experiencing multiple organ failure and cardiac arrest. Isabel's extensive suffering could have been avoided if her physicians had stopped to ask 'what else could this be?' instead of assuming her symptoms were typical of the chicken pox from which she was also suffering. Isabel was later diagnosed to be suffering from toxic shock syndrome and necrotising fasciitis.

Rather than suing the hospital for the error, Jason and Charlotte decided to create the Isabel web based diagnostic checklist system to help clinicians around the world improve their diagnoses. Isabel may help prevent premature closure, where clinicians make a quick diagnosis and stop collecting data. Isabel may also help prevent "anchoring", where clinicians steadfastly cling to an initial impression even as conflicting and contradictory data accumulate. Studies have shown that Isabel can help increase the quality of diagnoses<sup>1,2</sup> and reduce costs due to diagnostic error<sup>3</sup>.

## Decision support on rounds

DML's Clinical Informationist began helping clinicians use Isabel on daily patient rounds in 2012. The Informationist accesses Isabel on an iPad using either the Isabel website or mobile app. Clinical features including age, sex, travel history and symptoms are entered, and a list of possible diagnoses are returned. "Don't miss" diagnoses are highlighted with a red flag, alerting the clinician to serious conditions requiring immediate treatment.



## Discussion

Based on feedback from clinicians and the findings of previous research, it is likely that the use of Isabel at MGUH has improved the quality of diagnoses and reduced diagnostic error. In addition, in 2013 the Isabel mobile app was installed on iPad minis provided to selected clinicians, and in 2015 access was extended to all MGUH clinicians.

## Conclusion

The diagnostic decision support tool Isabel is helping clinicians improve their diagnoses and reduce diagnostic error at Georgetown University Medical Center.

## References

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## Background

The Institute of Medicine's 2015 report *Improving Diagnosis in Health Care* stated that health IT has the potential to support the diagnostic process through clinical decision support (CDS) tools. According to the report, CDS provides clinicians and patients with knowledge and person-specific information that is intelligently filtered or presented at appropriate times to enhance health and health care.