

Credible Practice Rule	Benefit to Including	Pitfall to Excluding
Define context clearly	Defines purpose and expectations of model performance and utility to user community	Lack of clarity of relevance and intensity of testing and other credibility factors to build confidence in the user community
Use contextually appropriate data	Traceability of all sources of data and relevance to model utility for the user community	Community cannot discount a lack of quality informing the model or the use of inappropriate data
Evaluate within context	Communicates the strength of testing and internal scrutiny performed and its relevance to the user community	Inability of the user community to determine if the testing is appropriate, performed with a suitable referent, or extensive enough to address intended and future use.
List limitations explicitly	Informs the user community to the extents the model can be applied per situations	Exposes the community to potential mis-use of the model, or use out of context or outside the range in which it is intended
Use version control	Associates model and simulation products and historical use to the specific version of the model; establishes provenance to data	Hinders the user community from accurate interpretation, repeatability, and debugging of the historical simulation predictions.
Document appropriately	Establishes products and evidence which directly communicate all aspects of the model with sufficient fidelity to allow review and assessment of model and model development process and reproduce modeling and simulation steps	Insufficiencies in this area prevent the community from establishing the suitability of this model in its context of use or future use, regardless of its status in other credibility factors. It further impedes the ability to reproduce the model or replicate the model results.
Disseminate broadly	Allows the user community to access, inspect, test, and comment on the model and application, improving the developers ability to address model issues and eventual intended use. Augments the potential for reuse.	Inhibits community buy-in on the model and its products, as well as limits the developers ability to receive constructive feedback from the community, thus potentially limiting. Severely diminishes reuse.
Get independent reviews	Provides a level of confidence that an unbiased assessor has critically reviewed all aspects of the credibility evidence and provided the findings for developer disposition and community review.	Decision makers that lack in depth knowledge to the model and simulation cannot assess the suitability of the model for their use or determine the weight to attribute to the model predictions
Test competing implementations	Represents a comparative metric to operational models with which the user community has familiarity and has similar context of use. Serves to illustrate the application of both models.	User community lacks insight into the quantitative benefits of this model with respect to other similar models which may impede appropriate use and adoption.
Conform to standards	Ensures the user community that a minimum level of rigor has been followed with respect to that expected in the discipline(s) associated with the model development and intended use. Enhances comprehensibility and interoperability of modeling and simulation by-products.	The user community cannot easily assess if the level rigor in the model development and representation of modeling and simulation products meets the discipline standards without substantial audits by discipline experts and/or ad hoc treatment of outputs. This impacts the confidence in the model to adequately address the intended use. Model exchange and reuse can be diminished.