10 Simple Rules with Conformance Rubric

- The TSR is a communication tool for modelers to organize their model development process and present it coherently to the stakeholder's interests
- See Example TSR here (/resource_credibility_assessment/cpms-tsr-example-predictive-bone-fracture-risk-model-astronauts)
- Image of online TSR fillable form (for continuous updating):

image of resource credibility form (https://www.imagwiki.nibib.nih.gov/sites/default/files/Resource%20Credibility%20Assessment%20_image%20of%20fillable%20form.pdf) **267.34 KB**

- Go to CPMS WG page (/content/committee-credible-practice-modeling-simulation-healthcare-description) (and IMAG FAQ page (/about-imag/frequently-asked-questions-faq)) for instructions to fill out the TSR

Instructions for Evaluating Resource Credibility:

Please evaluate your model for each of the Ten Simple Rules, which are listed for you in the table below and organized into the ten numbered blue boxes on the following slides. Also, for each rule, indicate "conformance level" in the orange box using the rubric provided below. After this form is created, please continue to update your conformance level as your project progresses.

Ten Simple Rules for Evaluating Model Credibility

(also adopted for Analysis Tools and Databases):

Rule	Description
R1 - Define context clearly	Develop and document the subject, purpose, and intended use(s) of the model or simulation.
R2 - Use appropriate data	Employ relevant and traceable information in the development or operation of a model or simulation.
R3 - Evaluate within context	Verification, validation, uncertainty quantification, and sensitivity analysis of the model or simulation are accomplished with respect to the reality of interest and intended use(s) of the model or simulation.
R4 - List limitations explicitly	Restrictions, constraints, or qualifications for or on the use of the model or simulation are available for consideration by the users or customers of a model or simulation.
R5 - Use version control	Implement a system to trace the time history of M&S activities including delineation of contributors' efforts.
R6 - Document adequately	Maintain up-to-date informative records of all M&S activities, including simulation code, model mark-up, scope and intended use of M&S activities, as well as users' and developers' guides.
R7 - Disseminate broadly	Publish all components of M&S activities, including simulation software, models, simulation scenarios and results.
R8 - Get independent reviews	Have the M&S activity reviewed by nonpartisan third-party users and developers.
R9 - Test competing implementations	Use contrasting M&S execution strategies to check the conclusions of the different execution strategies against each other.
R10 -Conform to standards	Adopt and promote generally applicable and discipline specific operating procedures, guidelines, and regulations accepted as best practices.

Rubric for Conformance Level:

Each model builder should rate their conformance using the above rubric and determine how their model currently conforms to the 10 rules. It is not expected that a model would have an "Extensive" conformance level for all 10 rules. Each conformance level may evolve over time as the model matures.

Outreach Capability	Outreach to application-domain experts who may not be M&S practitioners	Outreach to M&S practitioners who may not be application-domain experts	Outreach to application-domain specific M&S practitioners	Outreach to application-domain specific M&S practitioners	None or very limited
Conformance Level	*Comprehensive*	*Extensive*	*Adequate*	*Partial*	*Insufficient*
	4	*3*	*2*	*1*	*0*
Description Level	Can be understood by non-M&S practitioners familiar with the application domain and the intended context of use	Can be understood by M&S practitioners not familiar with the application domain and the intended context of use	Can be understood by M&S practitioners familiar with the application domain and the intended context of use	Unclear to the M&S practitioners familiar with the application domain and the intended context of use	Missing or grossly incomplete information to properly evaluate the conformance with the rule