



最佳实践标准：模拟

INACSL 最佳实践标准：模拟SM 模拟设计

INACSL 标准委员会

关键词

教育学；模拟设计；
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估；目标；介绍；
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随着模拟科学发展，需要对 INACSL 最佳实践标准：模拟SM 不断进行修改和补充。因此，INACSL 最佳实践标准：模拟是动态文件。

标准

模拟旨在满足确定的目标和优化预期结果的实现。

背景

标准化模拟设计为开发有效模拟提供了一个框架。模拟的设计加入了来自成人学习、¹ 教育、^{2,3} 教学设计、^{4,5} 临床照护标准、^{6,7} 评价、⁸⁻¹¹ 和模拟教育的最佳实践。¹²⁻¹⁶ 有目的性的模拟设计可促进与纲领性的目标和/或机构使命相一致的基本结构、过程和结果。

有效的医疗模拟设计可促进一致的结果，增强模拟在各种环境下的整体价值。

所有模拟均需要目的性和系统性，兼顾灵活性和周期性的计划。为实现预期结果，模拟的设计和开发应考虑可提高模拟效果的标准。

不遵守该标准的潜在后果包括：无法有效评估学员、学员无法达成确定的目标或实现预期结果。此外，不遵守该标准可导致在设计模拟活动时资源利用不佳或效率不高。

满足此标准的必要标准

1. 进行需求评估，从根本上证明对设计完善的模拟的需求。
2. 构建可测量的目标。
3. 根据模拟的目的、理论和形式来构造模拟的形式。
4. 设计情景或案例为模拟提供背景。
5. 采用不同类型的仿真以创建所需的逼真度感受。
6. 确保引导方法以学员为中心，受目标、学员知识或经验水平以及预期结果驱动。
7. 开始模拟先从介绍开始。
8. 先进行模拟然后进行引导性反馈和/或反馈环节。
9. 要包括对学员、导师、模拟、设施和支持团队的评价。
10. 提供准备资料和资源来提高学员达成模拟既定目标和实现模拟预期结果的能力。
11. 在完全实施模拟前进行试点测试。

标准 1：进行需求评估，从根本上证明对设计完善的模拟的需求。

必备要素：

- 需求评估可能包括以下分析：
 - 引起关注的潜在原因（例如：根本原因或差距分析）。
 - 组织分析（例如：优势、弱点、机会和威胁分析）。
 - 对利益相关者、学员、临床医生、和/或教师进行调查。
 - 结果数据（例如：试点测试数据、既往模拟数据、累积医疗数据）。
 - 标准（例如：认证机构、规章制度、实践指南）。
- 需求评估包括对个人知识、技能、态度和/或行为的考察；组织计划；系统分析；临床实践指南；质量改善项目；和/或患者安全目标。
- 利用需求评估结果来指导开发模拟总体目标或广泛目标，相应的也会在模拟特定目标的开发方面指导设计者（参见 INACSL 标准：目标和结果）。

- 使用需求评估结果来创造创新性和互动性的模拟，旨在：
 - 改善课堂授课和/或临床带教。
 - 为规范化的临床工作提供训练机会。
 - 提高能力。
 - 提高照护质量和患者安全。
 - 提高对临床实践的准备。

标准 2：构建可测量的目标。

必备要素：

- 设定总体目标和具体目标，来解决确定的需求、优化预期结果的实现。
- 总体目标和具体目标共同为模拟设计提供了一个蓝图。
 - 总体目标体现了模拟的目的并且与组织目标相关联。
 - 具体目标与学员表现相关联。
- 在设计阶段，确定学员在模拟开始前可选哪个目标。
 - 应透露为学员提供基本信息和背景的目标（例如：为心力衰竭患者提供照护）。
 - 应对学员表现的测量或关键行动核查单进行保密。
- 使用可测量的目标来推动模拟的设计、开发和采用方法（参见 INACSL 标准：目标和结果）。
- 导师对整个模拟的目标负责（参见 INACSL 标准：引导）。

标准 3：根据模拟的目的、理论和形式来构造模拟的形式。

必备要素：

- 根据需求评估、资源和总体目标选择模拟形式，要考虑目标学员。
- 借助模拟的目的来设计和开发过程性和/或总结性经历。
- 根据既定目标和目标学员来选择理论和/或概念框架^{15,17,18}（例如：成人学员、跨专业团队¹⁹等）。

- 为模拟选择合适的形式。形式是体验的平台。形式可包括模拟的临床沉浸、现场模拟、计算机辅助模拟、虚拟现实、程序性模拟和/或混合模拟。这些形式通过使用标准化病人、人体模型、触觉设备、虚拟病人、局部模型等来实现。
- 构建整个模拟包括起始点、结构化的学员活动和结束点。
 - 起始点代表学员开始参与模拟时的环境或情况的初始情况。
 - 结构化的学员活动旨在使学员参与（例如：模拟案例或展开情景，和/或心理运动技能的教学/评价）。
 - 结束点指的是模拟的预期终点，通常已展现出预期学习结果、时间已经用完或案例无法继续。

标准 4：设计情景或案例为模拟提供背景。

必备要素：

- 使用一个过程来设计情景或案例，以确保内容的质量和有效性，支持目标和预期结果。
- 设计情景或案例包括：
 - 一个情况和背景故事，以提供逼真的起始点，从这里开始有计划的活动。关于背景的全部信息可口头告知学员，通过患者病历了解或在学员询问后告知。
 - 根据学员行动来为推进临床案例或情景提供框架化的临床进展和提示，包括对学员的提示的标准化。提示应与表现测量挂钩，用于当学员偏离预期目标时再度聚焦重点。提示应通过多种方式传达给学员，包括口头（例如：通过患者、医务人员或嵌入式参与者）、视觉方式（例如：通过监护仪上生命体征的变化）、其他数据（例如：新的实验室结果）等（参见 INACSL 标准：引导）。
 - 指导情景进度和确保有合理时间实现目标的时间框架。
- 情景或案例脚本，旨在确保一致性和标准化，以提高情景的可重复性/可靠性。与计划相偏离可能增加干扰因素，会干扰目标和影响情景或案例的有效性和/或可靠性。
- 识别评价情景目标实现所需的关键行动/表现的测量。测量应当有依据。可使用相关领域专家来增强模拟情景和关键表现测量的有效性。

标准 5：采用不同类型的仿真以创建所需的逼真度感受。

必备要素：

- 通过重视有助于实现目标的物理的、概念的和心理方面的仿真度来设计模拟。
 - 物理（或环境）仿真度涉及模拟的物理环境对现实生活中的实际环境的模仿的逼真度。物理仿真度包括以下因素，如病人、模拟病人/人体模型、标准化病人、环境、设备、嵌入演员和相关道具。
 - 概念仿真度确保情景或案例的所有元素以逼真的方式互相联系，以使整个案例对学员有意义（例如：生命体征与诊断一致）。为了最大程度的提高概念逼真度，相关专家应审核案例或情景，在学员使用前进行试点测试。
 - 心理仿真度通过模拟临床环境下的背景元素来最大程度的提高模拟环境的逼真度，例如：可进行真实对话的活生生的病人声音、所模拟环境典型的噪音和灯光、干扰、家庭成员、医疗团队其他成员、时间压力和竞争优先权。心理仿真度与身体和概念仿真度协同作用来提高学员参与度。
- 用合适的仿真度类型来开发模拟，以创造所需的逼真感受，让学员有兴趣参与。^{13,20}

在适用的情况下，可使用特效化妆来再现患者情况的特点或特征，选择情景中代表患者种族和文化的人体模型，以提高学员的感知，支持情景的仿真度。²¹

标准 6: 确保引导方法以学员为中心, 受目标、学员知识或经验水平以及预期结果驱动。

必备要素:

- 在设计阶段确定引导方法。
- 导师参与程度与学员的知识和经验成反比。
- 各情景、案例或模拟中, 不同的导师要使用一致的引导方法, 以实现干预保真度。²² (参见 INACSL 标准: 引导)
- 使用经过正规模拟教育方法论培训的导师 (参见 INACSL 标准: 引导)。

标准 7: 开始模拟先从介绍开始。

必备要素:

- 识别因学员经验水平和理论框架而异的学员期待值, 针对性的来进行介绍^{23,24}, 为模拟做好准备。
- 在模拟开始前立即进行结构化的、前后连贯的介绍。
- 在介绍中加入有助于建设正直、信任和尊重的环境的活动。确定学员和导师的介绍期待值。这包括建立基本原则和虚构协议 (参见 INACSL 标准: 职业操守和 INACSL 标准: 引导)。
- 介绍中加入向学员进行空间、设备、模拟病人、评价方法、角色 (学员/导师/标准化病人)、时间分配、总体和/或具体目标、病人情况和限制条件等的介绍 (参见 INACSL 标准: 引导)。
- 考虑使用写下来的或录下来的介绍计划来规范化各情景/案例的过程和内容。进行高风险评估时, 模验需要一份写下来的或录下来的介绍计划。

标准 8: 先进行模拟然后进行引导性反馈和/或反馈环节。

必备要素:

- 在设计阶段确定模拟的引导性反馈或反馈方法。

- 使用计划好的引导性反馈或反馈环节来为学员和导师丰富学习内容、提高模拟的连贯性。引导性反馈和反馈不同, 但是这两种关键要素均需要使用最佳实践进行结构化。在基于技能或测试模拟活动的情况下, 可用反馈替代引导性反馈, 以指导学员进一步提高或肯定他们的操作。
- 使用经过正规培训的掌握了引导性反馈技能的导师。
- 遵守 INACSL 标准: 引导性反馈。

标准 9: 要包括对学员、导师、模拟、设施和支持团队的评价。

必备要素:

- 在设计阶段确定评价过程, 以确保模拟的质量和有效性。
- 采用一个评价框架来指导选择和/或开发测量预期结果的有效和可靠工具。
- 在模拟开始之前或之初确保学员了解学员评价方法 (过程性、总结性和高风险)。
- 在评价过程中加入学员、同行和利益相关者的反馈。
- 使用评估数据来帮助评价模拟项目, 以便于提高质量。
- 遵守 INACSL 标准: 学员评价。

标准 10: 提供准备资料和资源来提高学员达成模拟既定目标和实现模拟预期结果的能力。

必备要素:

- 设计者和导师负责确保准备活动可解决模拟期间预期达成的学员知识、技能、态度和行为。
- 确定模拟的所有元素后, 在设计阶段判断必需的学员准备。
- 设计和开发准备活动和资源, 为学员取得模拟目标成功创造最佳的机会。这可能包括:
 - 理解模拟相关概念和内容所需要的活动和/或资源 (例如: 阅读任务、概念图、课程作业、说教部分、回答模拟具体问题、观看准备视听资料、完成预测试、审查病人病历、技能审查和练习等)

- 关于行为准则、保密性和预期的信息（参见 INACSL 标准：职业操守）。
- 允许学员在模拟介绍前完成准备活动。

标准 11：在完全实施模拟前进行试点测试。

必备要素：

- 设计完成后，对整个模拟进行试点测试，以确保其可完成预期目的，提供实现目标的机会，并且学员使用时有效。
- 试点测试期间确认任何模拟中混淆、缺失或不成熟的元素，在实际模拟发生之前进行修订。
- 用与目标学员小组相似的人群作为最佳试验环境。
- 在试点测试中评估评价工具、核查表及其他措施，以评估有效性，确保一致性和可靠性（例如：内容正确性、专家评审、评分者间的可信度等）。

设计模板

有设计模板可供教师使用，模板设计采用了基于证据的设计，并在设计过程进行了规范化。可用模板资源样本（参见参考文献）。

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关于国际护理临床模拟教学协会

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最佳实践标准：模拟

INACSL 最佳实践标准：模拟SM 结果和目标

INACSL 标准委员会

关键词

模拟；标准；目标；
结果；评价

引用文章：

INACSL 标准委员会（2016 年 12 月）。INACSL 最佳实践标准：模拟SM结果和目标。
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随着模拟科学发展，需要对 INACSL 最佳实践标准：模拟SM不断进行修改和补充。因此，INACSL 最佳实践标准：模拟是动态文件。

标准

所有的模拟均始于目标的设计，模拟目标应可测量，
旨在实现预期结果。

背景

结果

结果是教学设计和研究设计不可或缺的一部分。教育者、临床医生和研究者借助结果测量来确定模拟的影响。柯氏模式是一种常用的分级评估模式，可评价培训项目及学习结果的转化。¹ 该模式描述了四种水平的评估：(a) 反应—测量学员对培训的满意度，(b) 学习—

测量培训过程获得的知识、技能和态度，(c) 行为—测量因培训而发生的改变，(d) 结果—质量和安全性的提高；培训后投资回报率的提高，如产出、收益和员工留任。

目标

一旦确定模拟的结果测量，下一步就是设计目标。目标是促进实现模拟结果的指导工具，是合理的教学设计的标志。目标可以是广义的或具体的，是模拟设计的蓝图。布卢姆目标分类²提供了一个设计目标并借助目标来实现预期结果的框架。布卢姆目标分类将学习的三个领域进行划分：认知、心理运动和情感。各学习领域都有一个适用于模拟活动的等级目标分类。修订后的布卢姆目标分类³等级从低级的目标：记忆和理解，发展至更高的目标：应用、分析、评价和创造。

这些动词提供了预期结果的结构，并将 KSA（知识、技能、态度）融入到学员预期实现的结果中。

为了达到预期结果，定义明确、可测量的目标是必不可少的。在管理领域，Doran⁴创建了 S.M.A.R.T.（具体性、可测量性、可实现性、现实性和时限性）框架，来指导设计出有意义、可测量的目标。各组织调整了该框架，得出不同却相似的标准。S.M.A.R.T 框架被用来设计专注于学员在完成模拟后应表现出的预期 KSA 的目标。

美国疾病控制中心⁵为学术界和医疗行业提供了以下目标制定 S.M.A.R.T.标准：

- 具体性：具体为谁做什么？
- 可测量性：是否可量化？是否可测量？
- 可实现性：借助现有的资源和支持我们能否在一定的时间内完成？
- 现实性：是否影响理想目标或结果？
- 时限性：何时可实现该目标？

不遵守该标准的潜在后果可导致：目标不明确、出现非预期结果，以及目标未达到。这可能包括不客观的评估和评价结果；学员满意度下降；无法达到预期 KSA；和/或质量和安全指标无变化。

满足此标准的必要标准

1. 为模拟确定预期结果。
2. 建立基于预期结果的 S.M.A.R.T.目标。

标准 1：为模拟确定预期结果。

必备要素：

- 预期结果应：
 - 与组织的愿景和项目结果一致。
 - 基于课程体系中的目标和概念。⁶
 - 代表医疗实践中的患者多元文化背景和多样性。⁷
 - 贯穿整个项目或课程。
 - 基于需求评估或兴趣领域。

- 通过一个或多个水平来评价，可能包括¹：
 - 个体和总体结果。
 - 预期 KSA。
 - 行为/表现改变。
 - 投资回报。
 - 学员满意度。
- 在参与模拟前与学员交流。
- 必要时修改。
- 遵守 INACSL 标准：模拟设计。

标准 2：建立基于预期结果的具体的、可测量的、可实现的、现实的和时限性的目标。

必备要素：

- 具体的目标
 - 确定学员、场景、仿真性、引导、引导性反馈、评估和评价方法。
 - 包括认知（知识）、情感（态度）和心理运动（技能）学习领域。
 - 明确目标学习领域。
 - 使用学习领域布卢姆目标分类²等级分类来将目标从简单至复杂依次分类。
 - 根据学员的 KSA 调整目标水平。
 - 为每个目标选择一个行为动词。
 - 避免语义模糊的动词。
 - 认识到越具体可测量性越好。
 - 考虑“什么”会为“谁”“怎样”改变。
 - 确定会实现“什么”。
 - 确定会涉及“谁”。
 - 考虑会“如何”测量目标。
- 可测量的目标
 - 过程性、总结性和高风险评价所必需（参见 INACSL 标准：学员评价）。
 - 确定量化改变的参考基准。
 - 确定评价标准。
 - 用可靠、有效和可行的测量方法或工具来评价结果。
- 可实现的目标
 - 符合参与者的知识、经验和技能水平。
 - 在合理的时限内可行。
 - 资源可用于实现预期结果。
- 现实的目标
 - 与组织的愿景和项目结果一致。

- 目标与预期结果相关。
- 适合学员的 KSA。
- 与当前的基于循证的实践、指南、标准和文献一致。
- 时限性目标
 - 确定实现目标的时限（如分钟、小时、天）。
 - 使用具体的时限来计划、实施和评价结果。

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随后的 INACSL 标准

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关于国际护理临床模拟教学协会

国际护理临床模拟教学协会(INACSL)是通过卓越的医疗护理模拟转变实践、提高患者安全的全球领导者。INACSL 是一个模拟实践社区,会员可与模拟领导者、教育者、研究者和行业伙伴合作。INACSL 还提供 INACSL 最佳实践标准:模拟SM,指导模拟设计、实施、引导性反馈、评价和研究的基于证据的框架。

SM



最佳实践标准：模拟

INACSL 最佳实践标准：模拟SM引导

INACSL 标准委员会

关键词

引导；导师；学习理论；学员支持；提示

引用文章：

INACSL 标准委员会（2016年12月）。INACSL 最佳实践标准：模拟SM引导。护理临床模拟，12(S), S16-S20。 <http://dx.doi.org/10.1016/j.ecns.2016.09.007>。

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随着模拟科学发展，需要对 INACSL 最佳实践标准：模拟SM不断进行修改和补充。因此，INACSL 最佳实践标准：模拟是动态文件。

标准

引导的方法多种多样，使用哪种方法取决于学员的学习需求和预期结果。导师应承担管理整个模拟体验的责任并进行监督。

背景

引导模拟的导师需要具备相应的教育、技能和能力，能够指导、支持和找到方法帮助学员实现预期结果。¹⁻⁴ 为了保持作为一名有效导师的技能水平，导师必须参加继续教育并评估自身的引导技巧。^{5,6} 根据理论和研究的指导来选择引导方法。⁷ 引导方法可能会因学员水平、模拟目标以及模拟环境而异，同时也要考虑影响学员知识、技能、态度和行为的文化⁸⁻¹⁰ 和个体差异¹¹。

模拟可能是通过学员和导师进行实时互动进行，或者是学员通过电脑辅助的模拟互动进行，引导方法都可能会不同。导师的角色是通过使用引导方法，帮助学员提高技能，探索批判性思维、问题解决、临床推理和临床判断的思考过程，并将理论知识应用到一系列医疗环境下的患者照护中。¹²

不遵守该标准的潜在后果可能包括：影响学员对模拟的参与度，减少学员达成模拟的预期目标的机会。

满足此标准的必要标准

1. 有效的引导需要有具备模拟教学技能和知识的导师。
2. 引导方法应与学员的学习、经验和能力水平相适应。
3. 模拟前的引导方法包括准备活动和介绍，来帮助学员为模拟做好准备。
4. 在模拟过程中所用的引导方法涉及传达提示（预设的和/或未计划过的），提示旨在帮助学员实现预期结果。
5. 在模拟之后和之外进行的引导来帮助学员实现预期结果。

标准 1：有效的引导需要有具备模拟教学技能和知识的导师。

必备要素：

- 导师通过以下方面证明模拟教学方面的能力：
 - 使用 INACSL 最佳实践标准：模拟 SM。
 - 不断思考和评估自己的模拟教学技能、知识和引导表现。^{5,6}
- 导师通过正式课程/培训和参加继续教育课程和/或有目的的与有经验的导师合作，来获取使用模拟所需要的初始教育。^{1,13}（参见 INACSL 标准：引导性反馈）
- 导师掌握且表现出与以下方面相关的扎实的技能：
 - 培养职业操守并以身作则（参见 INACSL 标准：职业操守）。
 - 运用经验的、语境的、建构主义、社会文化和变革教育理论的原则以及系统和组织改变理论方面的原则。²
 - 意识到模拟所涉及的学员及其他人的多样性对学习体验的影响。^{8,10,11,14}
 - 应用引导技能，包括表现出真诚的互相尊重、创造学习伙伴关系、指导、开发一个动态的目标导向过程、管理学员矛盾、以及鼓励批判性和反思性思考。¹⁵
 - 创造和维护模拟仿真度和模拟技术的使用。

- 识别学员知识和表现的差距，并知道何时以及如何应对整个模拟过程中学员的行为。
- 提供准确、具体和及时的反馈。¹⁶
- 使用基于理论的引导性反馈（参见 INACSL 标准：引导性反馈）。
- 导师已经让自己熟悉预期模拟经验的各个方面。这包括熟悉介绍和准备资源、模拟本身和提示方法，以及所选择的引导性反馈和评价方法。

标准 2：引导方法应与学员的学习、经验和能力水平相适应。

必备要素：

- 评估学员需求。这些包括学员偏爱的学习方法、能力、文化差异，^{8,10} 知识和技能水平（参见 INACSL 标准：模拟设计）。
- 在模拟经验设计阶段确定引导方法（参见 INACSL 标准：模拟设计）。
- 使用适合模拟类型的引导方法，包括人体模型、标准化病人、混合或计算机辅助形式（参见 INACSL 标准：模拟设计）。
- 根据学员水平和模拟的目标，中断或者不中断模拟场景的进展。
- 通过为多组参与者提供一致的模拟经验，来实现干预的保真度。⁵
- 通过模拟中的观察和对学员表现适宜度的监测，来确保收集模拟评估和评价数据的机会（参见 INACSL 标准：学员评价）。

标准 3：模拟前的引导方法包括准备活动和介绍，来帮助学员为模拟做好准备。

必备要素：

- 在模拟开始前，向学员提供信息和/或进行准备活动、技能回顾和进行练习的时间。
- 讨论创造和维持安全的学习环境¹⁷和非竞争性环境的基本原则（参见 INACSL 标准：职业操守）。

- 告知学员在模拟中不可避免会发生错误但是可以在引导性反馈期间进行反思。
- 告知学员学习环境的模拟本质、模拟环境下学习与真实情况的不同之处¹⁰、并讨论虚构协议的概念。¹⁷
- 在模拟开始之前，在指定的时间进行介绍，具体时间因模拟的形式和复杂性而异。¹⁸⁻²⁰介绍部分至少应包括：
 - 讨论模拟的详情和预期。信息披露的详细水平取决于模拟的目的和目标。
 - 向学员提供关于模拟的背景信息。
 - 让学员熟悉模拟环境、进行模拟的形式、人体模型、以及可用或不可用的设备。
 - 为情景指定的角色提供清晰的描述，不论是作为直接照护提供者、观察者还是其他指定的角色。
 - 讨论模拟过程中联系其他人的方法（按需要），寻求更多信息的方法（若适用）。
 - 若适用，在模拟开始前为学员提供时间进行准备。

标准 4：在模拟过程中所用的引导方法涉及传达提示（预设的和/或未计划过的），提示旨在帮助学员实现预期结果。

必备要素：

- 传递提示（又称为提示性信息）来吸引学员注意情景或案例背景相关的重要或非重要信息。提示可以是预先设定的或未经计划的：
 - 根据常见和预期的学员行动会将预先设定的提示加入到模拟的设计中（参见 INACSL 标准：模拟设计）。
 - 根据学员的意料之外的行为给予非计划中的提示（又称为救场²¹）。
- 传递提示以帮助学员理解或理清模拟的实际情况或帮助重新指引学员朝向预期结果努力。²²
- 模拟进行期间以保持情景或案例逼真度的方式完成提示。
- 用多种方法传递提示，比如：实验室结果、医务人员或其他医护部门的电话、患者或家庭成员的意见、房间内设备的提示。

可加入一名演员来提供提示以应对非预期事件。

- 当为多组学员进行相同的模拟时，要使用一致的方法和模式来传递提示，以确保/提高标准化的模拟。

标准 5：在模拟之后和之外进行的引导来帮助学员实现预期结果。

必备要素：

- 遵守 INACSL 标准：引导性反馈。
- 引导不仅仅局限于模拟，因为学习是一个连续的发展过程，参与者会形成新的思维框架和思维方式。
- 引导可能不仅仅局限于汇报，因为学员可能会需要更多时间来思考、消化新知识、需要个别处理的事件或理清模拟经验与临床经验的矛盾之处。
- 当需要强调职业操守问题时，引导可引申至模拟经验之外（参见 INACSL 标准：职业操守）。

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关于国际护理临床模拟教学协会

国际护理临床模拟教学协会(INACSL)是通过卓越的医疗护理模拟转变实践、提高患者安全的全球领导者。INACSL 是一个模拟实践社区,会员可与模拟领导者、教育者、研究者和行业伙伴合作。INACSL 还提供 INACSL 最佳实践标准:模拟SM,指导模拟设计、实施、引导性反馈、评价和研究的基于证据的框架。



最佳实践标准：模拟

INACSL 最佳实践标准：模拟SM 引导性反馈

INACSL 标准委员会

关键词

引导性反馈；思考；
引导；反思；基于
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随着模拟科学发展，需要对 INACSL 最佳实践标准：模拟SM不断进行修改和补充。因此，INACSL 最佳实践标准：模拟是动态文件。

标准

所有的模拟体验均包括旨在提高将来临床表现的事先计划好的引导性反馈部分。

背景

学习依赖于经验和思考的结合。有一点是显而易见的：基本的学习发生于基于模拟经历的引导性反馈阶段。¹⁻⁵ 思考是有意识的考虑一项行动的意义和含义，这包括知识、技能和对已有知识的态度的吸收。⁶⁻⁸ 思考可让学员获得新的理解，认知重建对于学习是必不可少的。^{8,9} 导师的技能对于确保最佳的学习结果非常重要。¹⁰⁻¹⁶

将引导性反馈过程整合到基于模拟的经验可促进学习，提高学员自我意识和自我效能。引导性反馈可促进对知识、技能和态度的理解以及转化，专注于最佳实践来促进安全、高质量的患者护理以及学员专业角色的发展。

¹⁷⁻¹⁸

不遵守该标准的潜在结果是导致引导性反馈部分失败（例如：无法获取理想的学习结果或行为变化），为学员创造的体验可能不太舒适。¹⁸⁻²⁰

满足此标准的必要标准

1. 引导性反馈由胜任引导性反馈流程的人来进行。

2. 引导性反馈在利于学习，支持保密性、信任、开放式交流、自我分析、反馈和思考的环境下进行。
3. 引导性反馈由模拟期间可集中注意力观察并能进行有效引导性反馈的人来引导。
4. 引导性反馈应基于有目的性的引导性反馈理论框架进行。
5. 引导性反馈与模拟体验的目标和结果一致。

标准 1：引导性反馈由胜任引导性反馈流程的人引导。

必备要素：

- 进行最佳引导性反馈实践，着眼于调整引导性反馈形式，促进反思式讨论。
- 通过正式课程、继续教育课程和/或与有经验导师的目标性工作来获得特定初始教育（INACSL 标准：引导）。
- 从学员和有经验的导师处寻求反馈。
- 通过积极参与模拟体验保持引导性反馈水平。
- 通过持续使用工具来不断确认导师的能力。
- 参与通过正式课程、继续教育课程和/或与有经验导师的目标性工作提供的继续教育（参见 INACSL 标准：引导）。

标准 2：引导性反馈在利于学习、支持保密性、信任、开放式交流、自我分析、反馈和思考的环境下进行。

必备要素：

- 使学员熟悉整个引导性反馈流程。
- 确立对学员表现、模拟场景内容和引导性反馈讨论内容保密性的预期。
- 与学员合作确定关于建设性、诚实和尊重的反馈的行为准则。
- 在进行行为反思与分析前，认可并确认学员对模拟体验的情感反应以及学员主要关心的事。
- 通过探索学员的独特视角，表现出对学员的积极态度。
- 引导学员思考影响决策的个人和环境因素，如过去的经验、文化、背景、个性、技能和知识。

- 使用语言和非语言支持行为来鼓励讨论。
- 让观察者和学员都参与引导性反馈，以支持合作式学习。
- 管理非预期的学员反馈。
- 应用小组引导原则，以确保所有学员共同参与讨论。
- 根据小组需要调节引导水平。
- 尽可能或恰当使用独立于模拟发生地点的会议室或专用的讨论室来进行引导性反馈。
- 现场模拟部分结束后立即进行引导性反馈。^{3.5}
- 遵守 INACSL 标准：职业操守和 INACSL 标准：引导。

标准 3：引导性反馈由模拟期间可集中注意力观察并能进行有效引导性反馈的人来引导。

必备要素：

- 当导师在模拟场景中无需履行多项职务和扮演多个角色（例如：扮演患者声音、控制场景、同时为学习任务排序并评价活动、以及在众多角色中能够专注于最重要的角色）时，才能专注。
- 建立专业尊重的氛围，包括涉及讨论内容机密性的要求（参见 INACSL 标准：职业操守）。
- 确保运行技术有足够的支持，以允许导师主要侧重于学习者评估（建设性或总结性）。
- 计划促进自我反思和批判的引导性反馈后活动。
- 列出引导性反馈过程，包括预期学员会通过批判自己的表现并为他人的表现提供信息来推动讨论。
- 选择恰当的反馈技能，可能包括面对面，来自设备、视频会议或视频回放的数据、图片转录表现，核查表，分数以及其他形式的反馈。
- 引导学员参与反思过程。
- 提供学员表现的具体例子。

- 在引导性反馈过程中调整引导水平以促进每位学员根据他/她自己的角色参与讨论。
- 根据模拟目标、学员的决策和行为来提供过程性反馈，包括肯定正面行为、纠正错误的理解和阐明导致错误决策的认知框架。
- 协助学员内化，如何将模拟和引导性反馈中的学习应用到将来的临床实践中。
- 必要时纳入非预期讨论话题。
- 引导对个人和团队表现的反思，以改善目标表现。
- 引导恰当的批判性思维、临床判断、推理、思考和反思。
- 允许根据学员的需求和经验的影响来调整引导性反馈。
- 在引导性反馈结束时总结学习，以促进知识与推理的整合。

标准 4：引导性反馈基于有目的性的引导性反馈理论框架进行。

必备要素：

- 导师使用引导性反馈框架，选择时考虑以下要素：
 - 目标和预期结果。
 - 模拟案例复杂度。
 - 学员需求。
 - 包括反应、分析和总结的最基础阶段。
 - 导师对引导性反馈框架的掌握程度。
 - 模拟场景/体验。
- 目前可用框架为 GAS²¹（收集、分析、总结），以良好的判断力进行引导性反馈，⁶ PEARLS，²² 有意义学习的引导性反馈²³（DML），Plus-Delta，3D 引导性反馈模型，²⁴ 以及临床推理 OPT 模型。²⁵ 适用于引导性反馈过程的框架会继续被开发。

标准 5：引导性反馈与模拟体验的目标和结果一致。

必备要素：

- 考虑引导性反馈的目标。
- 考虑模拟体验的结果并调整引导性反馈以包括以学员为中心的目标。²⁶
- 在引导性反馈中，根据对模拟体验的预期结果来识别学员表现的不足之处。

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关于国际护理临床模拟教学协会

国际护理临床模拟教学协会(INACSL)是通过卓越的医疗护理模拟转变实践、提高患者安全的全球领导者。INACSL 是一个模拟实践社区,会员可与模拟领导者、教育者、研究者和行业伙伴联网合作。INACSL 还提供 INACSL 最佳实践标准:模拟SM,指导模拟设计、实施、引导性反馈、评价和研究的基于证据的框架。



最佳实践标准：模拟

INACSL 最佳实践标准：模拟SM 学员评价

INACSL 标准委员会

关键词

过程性；总结性；评价；测试；评估；高风险测试

引用文章：

INACSL 标准委员会（2016 年 12 月）。INACSL 最佳实践标准：模拟SM学员评价。《护理临床模拟》，12(S), S26-S29。 <http://dx.doi.org/10.1016/j.ecns.2016.09.009>。

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随着模拟科学发展，需要对 INACSL 最佳实践标准：模拟SM不断进行修改和补充。因此，INACSL 最佳实践标准：模拟是动态文件。

标准

所有模拟均需要进行学员评价。

背景

模拟支持对知识、技能、态度和行为进行评价，这些是学员在认知（知识）、情感（态度）和心理运动（技能）学习领域的表现。对学员的过程性评价可促进个人和职业发展，帮助学员在实现目标或结果方面取得进步。总结性评价专注于特定时间段内的结果测量或目标实现，特定时间段通常是在研究项目结束时。² 高风险评价指的是对结果有较大影响或后果的主要指标的评价（如绩效工资、进展或分数）。

使用模拟对学员进行的可靠性评价包括以下方面：(a) 决定模拟的目的，(b) 设计模拟时应涵盖评价的时间、使用有信度和效度的评价工具、对于评价者的培训，以及 (c) 完成评价并解释结果。³

不遵守该标准的潜在后果可导致评价结果不准确、学员体验不佳、学习效果不佳、没有进步、选择的工具不恰当或评价偏倚。

满足此标准的必要标准

1. 在模拟开始前确定学员评价方法。
2. 可以选择模拟进行过程性评价。
3. 可以选择模拟进行总结性评价。

4. 可以选择模拟进行高风险评价。

标准 1: 在模拟开始前确定学员评价方法。

必备要素

- 学员评价应：
 - 以目标/结果和/或模拟目的为导向。
 - 以类型为依托：过程性、总结性或高风险评价。

标准 2: 可以选择模拟进行过程性评价。

必备要素

- 进行过程性评价的目的：
 - 监测结果的实现进度。
 - 提供连续的过程性反馈。^{4,5}
 - 促进并提高学员的临床能力。
 - 确定并弥补知识和技能方面的不足。
 - 评估对真实临床体验的准备状态。
 - 引导教学和学习。
- 需要经过正式培训的导师（参见 INACSL 标准：引导）。
- 采用小班教学，理想情况下每 3-5 个学生最少 1 名导师。^{6,7}

标准 3: 可以选择模拟进行总结性评价。

必备要素

- 进行总结性评价的条件：
 - 在某一时间段内（例如课程结束时或某特定时间段）。
 - 在安全的学习环境下。
 - 在熟悉环境和设备后。
 - 实现模拟结果所需的适当仿真度。
 - 使用标准格式和评分方法（例如利用标准化病例，包括何时提供提示信息、场景时长和其他场景详情）。
 - 视频录制的评价，应由多位经过培训的评价者进行评审。^{6,8}
- 适当时，使用基于理论的方法确定及格分数线。⁹
- 选择有效、可靠的工具。
- 为基于观察的评价提供评分者培训。^{4,5}

- 当需要一名以上评分者时，确定评分者间的内在一致性。
- 事先告知学员评价过程。
- 为学员提供关于结果达成的总结性反馈。

标准 4: 可以选择模拟进行高风险评价。

必备要素

- 进行高风险评价的条件：
 - 在学习结束时，但是也可在其他时间进行，以评估知识差距或识别重要的安全问题。
 - 基于特定的学员目标。
 - 在向学员解释后果和结果之后。
 - 基于预定参数来决定模拟是否结束。
 - 进行模拟预运行后。
 - 由经过培训的、无偏见的客观评分者或评价者进行。
 - 客观评分者或评价者使用综合性工具（例如明确列出积极行为和负面行为的核查单或量表）。
 - 在学员有机会多次接触模拟（包括评价）后。^{7,10}
- 使用的评价工具曾经在类似人群中测试过。
- 每名学员应由一名以上评价者来进行评价，无论是直接观察还是视频录制。⁸

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最佳实践标准：模拟

INACSL 最佳实践标准：模拟SM 职业操守

INACSL 标准委员会

关键词

职业操守；职业界限；保密；模拟

引用文章：

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随着模拟科学发展，需要对 INACSL 最佳实践标准：模拟SM不断进行修改和补充。因此，INACSL 最佳实践标准：模拟是动态文件。

标准

模拟所涉及的所有人都需要表现出并遵守职业操守。

背景

职业操守指的是期望整个模拟过程中所涉及的所有人都表现出的合乎伦理的行为。职业操守是一个人的内在原则体系，包括多种互相关联的品质，如保密、同情心、诚实、奉献、合作、互相尊重以及参与学习过程。¹⁻⁴ 职业操守是指在很强的负面诱惑或压力下，不论有无旁观者，都选择做正确的事情，即使是在模拟过程结束后也一直坚守这种精神。⁵

不论一个人在模拟中的角色是什么，不管是学员、导师、教员、操作者或其他人员，所有模拟所涉及的人员都应有职业操守，并且意识到自己的个人和职业行为对他人有何影响。³

所有模拟所涉及的人员都需要讨论职业操守品质，尤其是保密性。保密程度取决于各机构所制定的政策。各组织必须有分享学员表现的确定方法。^{6,7} 法律、伦理、和/或机构法规规定有责任报告不恰当行为。^{8,9}

当参与模拟时，每个人都容易受到伤害。因此必须要认识到存在不平等的权力，平衡并保持职业界限，以免影响从模拟学习中获得知识。¹⁰ 跨越界限可能是无意的、无心的或故意的，但是这些判断可影响分数、关系、工作、职位和职业。任何人都有责任遵守和监督跨学科、跨职业的职业操守。

不遵守该标准的潜在后果是可能导致非预期行为和/或干扰模拟结果。学员可能无法完全投入到模拟中，进而改变或影响该学员的表现。可影响职业、自尊，导致职业关系中缺乏信任，失去安全的学习环境，影响群体行为。¹⁻⁶

满足此标准的必要标准

1. 培养职业操守品质并始终以身作则。
2. 遵守职业实践、指南、原则和伦理的标准。
3. 创建并维持安全的学习环境（参见 INACSL 标准：引导）。
4. 根据机构政策和程序需要对学员的表现和模拟内容保密。

标准 1：培养职业操守品质并始终以身作则。

必备要素：

- 职业操守品质包括：
 - 有条理并为模拟做好准备。
 - 为自身角色和责任负责。
 - 合作、支持、不威胁、互相尊重。
 - 能够以安全、无偏见的方式分享专业知识和/或经验。
 - 冷静、有同情心、建立信任感。
 - 了解模拟中照护多样人群和患者多样性相关的问题。
 - 诚实、细心、对模拟相关的文化差异和伦理问题敏感。
- 认识到模拟期间的不专业、不合伦理的行为，并采取应对措施。
- 有意识的选择以职业操守行事。

标准 2：遵守职业实践、指南、原则和伦理的标准。

必备要素：

- 始终在自己的职业领域追求卓越。
- 遵守指导本行业实践的法律和职业标准以及伦理准则。
- 了解最新行业实践标准、指南、原则和伦理。

- 纳入学员学科的职业实践标准和伦理准则，以发展、提醒和加强职业操守品质。

标准 3：创建并维持安全的学习环境（参见 INACSL 标准：引导）。

必备要素：

- 清晰地沟通职业操守品质和保密的重要性。
- 支持主动学习、思考和刻意练习。
- 以有效、尊重的方式提供清晰的沟通和诚实的反馈。
- 保持职业界限，把对职业角色/身份和个人关系的负面影响降至最低（即同事间、伙伴间、导师与学员、或学员间）。

标准 4：根据机构政策和程序需要对学员的表现和模拟内容保密。

必备要素：

- 确立政策和程序，确保与需要并有兴趣了解学员表现的人合理分享信息，包括监测、报告和解决违反情况的机制。⁶
- 确立政策和程序，以合理保护和销毁书面文件、音频和/或视频片段。
- 根据机构政策，完好保存场景内容、模拟中发生的事件/行为、给予的反馈、模拟前后及过程中的所有对话。

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关于国际护理临床模拟教学协会

国际护理临床模拟教学协会(INACSL)是通过卓越的医疗护理模拟转变实践、提高患者安全的全球领导者。INACSL 是一个模拟实践社区, 会员可与模拟领导者、教育者、研究者和行业伙伴合作。INACSL 还提供 INACSL 最佳实践标准: 模拟SM, 指导模拟设计、实施、引导性反馈、评价和研究的基于证据的框架。



最佳实践标准：模拟

INACSL 最佳实践标准：模拟SM 模拟强化跨专业教育（Sim-IPE）

INACSL 标准委员会

关键词

跨专业教育；合作性实践；跨专业沟通；团队合作

引用文章：

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随着模拟科学发展，需要对 INACSL 最佳实践标准：模拟SM 不断进行修改和补充。因此，INACSL 最佳实践标准：模拟是动态文件。

标准

模拟强化跨专业教育（Sim-IPE）¹ 可使不同专业的学员参与模拟体验，以实现共同的目标和结果。

背景

当今社会的复杂医疗需求要求医护人员作为一个团队协同合作。安全、高质量的医疗护理离不开医护团队有效的合作、沟通和知识技能的分享。Sim-IPE 结合模拟教育与跨专业教育（IPE），提供发展与掌握跨专业实践能力的协作方法。^{2,3} 基于模拟的体验是公认的促进 IPE 团队合作的有效方式。

Sim-IPE 旨在帮助个人“互相了解、学习，以实现有效合作、提高健康结果”²（第 31 页），进而为目的性学习创造机会。创造丰富的学习机会可能较难，因为模拟教育中存在多种可影响学习的自然因素（如：模拟、模拟病人、模拟项目、课程、日程表、学员和导师）。为了实现最佳跨专业学习效果，教育者应借助已发表的理论（教育、组织和/或管理）、概念、框架、标准和能力来指导 Sim-IPE 的开发实施和评价。^{4,5}

教学体验的每个方面均应整合基于模拟的教育和 IPE 的策略。

此外，来自人为因素的研究和团队表现的策略对于 Sim-IPE 中的高效沟通和合作必不可少。

设计 Sim-IPE 活动来测量方法、经验和学习结果的成果以丰富 Sim-IPE 的科学性时，应考虑评价方案。^{3,6} 模拟和 IPE 均与患者安全有一定关系，但是尚没有多少证据来证实它们之间的关系（Sim-IPE），并且目前可用的多数测量工具缺乏心理测量发展。⁷ 需要使用具备信度和效度的测量工具，来确定 Sim-IPE 的有效性，包括学员态度、临床实践能力和患者结果的变化。我们鼓励教育者和研究者传播来自于 Sim-IPE 经验的结果。

不遵守以上标准的潜在结果可能包括学习机会受影响、专业信誉不高、低效的工作关系、不安全的学习环境以及角色不明确。⁸

满足此标准的必要标准

1. 基于理论或概念框架进行 Sim-IPE。^{4,5,9}
2. 使用最佳实践标准设计和开发 Sim-IPE。
3. 识别并解决实施 Sim-IPE 的潜在障碍。
4. 制定恰当的 Sim-IPE 评价方案。

标准 1：基于理论或概念框架进行 Sim-IPE。^{4,5,9}

必备要素：

- 纳入成人学习理论、框架、标准和能力，来构建 Sim-IPE 的开发。
 - 探索团队合作或危机资源管理框架，并考虑采用以保持一致性。
 - 借助已发表的理论模型、框架和/或能力（如：国家接受的核心能力、认证和评审机构、专业协会），有目的性的设计 Sim-IPE。
- 规划课程蓝图，以确定潜在和/或合适的 Sim-IPE 整合。
- 整合 Sim-IPE 所涉及的各个医疗行业的理论和理念模式。

标准 2：使用最佳实践标准设计和开发 Sim-IPE。

必备要素：

- Sim-IPE 的最佳实践应：
 - 考虑多种体验以实现预期结果
 - 整合模拟专业人士开发和审核过的可信的、¹⁰ 具有挑战性的、基于现实的活动/场景。
 - 设计 Sim-IPE 所涉及专业的共同目标。
 - 活动的设计基于学习目标、¹¹ 学员的知识、技能、需求和经验。
 - 保证安全的学习环境。
 - 针对模拟目标，提供合适的、基于团队的结构化的引导性讨论和反馈。^{6,9,10,12,13}

标准 3：识别并解决 Sim-IPE 的潜在障碍。

必备要素：

- 进行需求评估，以确定组织或项目机构是否已经准备好进行 Sim-IPE 以及利益相关者是否能够受益。¹⁷
- 判断机构和领导对 Sim-IPE 的投入。^{2,4,6,15}
- 在开发、计划和评价过程中立足于 Sim-IPE 的可持续性、机构及当地所关注的问题。
- 在开发、计划和实施的过程中借助 Sim-IPE 带头人和利益相关者。
- 检查可用资源，包括资金支持、模拟空间、设备、物资、时间和支持人员/导师，因为 Sim-IPE 属于资源集中型教育。^{4,6,14,15}
- 提供基础的和持续的导师培训。^{4,16-18}
- 确定 Sim-IPE 的基础设施，包括课程基础和课程开发。^{2,16-18}
- 给教育者提供支持，包括对参与者的认可和提供时间，让他们参与模拟的设计、实施和引导性反馈。^{6,15,16,19}
- 初始启动后，开发后续支持方案。
- 考虑某些国家可能出现其他的 Sim-IPE 障碍。¹⁹
- 遵守 INACSL 标准：模拟设计和 INACSL 标准：职业操守。

标准 4：制定恰当的 Sim-IPE 评价方案。

必备要素：

- 使用可靠和有效的工具（如果有）。

- 向专家咨询, 来开发评价工具(如统计学家、研究员或心理测量学家)。
- 调查 Sim-IPE 如何有效整合到各种课程中(学校教育和毕业后教育)。
- 评价 Sim-IPE 如何影响个人和团队行为。
- 探索 Sim-IPE 如何用于发展和评价跨专业能力。
- 评价 Sim-IPE 如何影响学习者结果。
- 评价 Sim-IPE 如何影响患者结果。^{7,18}
- 评价 Sim-IPE 如何影响文化。

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最初的 INACSL 标准

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关于国际护理临床模拟教学协会

国际护理临床模拟教学协会(INACSL)是通过卓越的医疗护理模拟转变实践、提高患者安全的全球领导者。INACSL 是一个模拟实践社区,会员可与模拟领导者、教育者、研究者和行业伙伴联网合作。INACSL 还提供 INACSL 最佳实践标准:模拟SM,指导模拟设计、实施、引导性反馈、评价和研究的基于证据的框架。



最佳实践标准：模拟

INACSL最佳实践标准：模拟SM运营

INACSL标准委员会

关键词

战略性计划；政策和程序；
基于能力的培训；
财政资源；系统整合；
角色职责；计划指标；
人员；工作描述

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随着模拟科学发展，需要对 INACSL 最佳实践标准：模拟 SM 不断进行修改和补充。因此，INACSL 最佳实践标准：模拟是动态文件。

标准

所有模拟项目的实施均需要整个系统和基础设施来支持和维护。

背景

模拟运营包括为高效开展模拟教学（SBE）计划所需的基础设施、人员和流程。这几个交叉因素应构成一个完整的系统，能够与更大的教学和医疗机构结合，以实现SBE的目标。SBE不再是医疗培训和/或职业发展计划的辅助计划，而是一项全面的综合计划，需要

具有业务头脑以及技术知识丰富的人员作为团队成员，对SBE计划的实施进行领导和支持。基于循证基础的最佳实践来实施模拟所需的知识、技能和特质正在迅速发展¹⁻³。这些技能可能为个人所有或由团队所共有。业务、教育和技术技能的专家可促进目标和结果的发展、可持续性、仿真度和完成⁴。定义模拟运营的需求超越任何角色或职务。成功的模拟运营是不同部门之间领导、教师、学员和适应性关系的动态合作。

SBE运营以战略性计划开始，为SBE计划构建结构并定义功能⁵。该计划的指导原则与计划任务一致。该战略性计划为SBE计划利益相关者的需求提供支持⁶。完整的战略性计划有匹配组织实施能力⁷的现实的目標。

该方案提供了测量进度的基础，建立了按需通知变更的机制。该文件达成了共识，概述了开始状态、预期结果、达成这些结果需要进行的以及记录SBE计划结果的评价指标。

人员和财政资源也是SBE计划不可或缺的一部分。全球模拟中心发展的最大障碍是缺少财务支持和技术（营运）人员⁸⁻¹⁰。美国国家护理委员会研究发现接受过培训的专业模拟人员对于确保一致和可重复的SBE结果不可或缺²。随着正规模拟教育开始实现¹¹⁻¹³，有必要将接受过正规模拟教育和培训作为优先雇用的条件。但是，接受过在职培训和有相关经验的人员若能表现出相应的能力和熟练度也可替代这种正规培训¹⁴。SBE计划还必须为实施和满足计划各方面所需的合理仿真度、空间、设备、资源和专业知识进行预算和利用^{4,15}。

SBE预算和人力资源要求必须与培养和支持SBE人员的专业知识和职业发展相匹配。SBE^{6,16,17}教育中的熟练度、能力和专业知识会提高地区/或全球医疗服务的结果¹⁸。精心设计的SBE计划需要投入大量的资金、资源和时间，通常无法立即产生相应的投资货币化回报^{19,20}。最终，目标是提高新学员、转向实践的临床医生、参加继续教育的持证临床医生的能力指标，并为病人结果带来正面影响。

随着SBE计划持续发展，必须解决管理、教育、协调和技术实施的问题^{6,18,21,22}。书面政策和程序会定义角色描述、工作要求、问责制、安全性、意外事件、有效性和效率^{23,24}，而目的性的系统整合会联合多个可能不相干的小组为SBE计划实现一个共同的目标。这些流程正在不断地改进，需要管理和业务知识，以成功满足SBE计划、关键利益相关者和受影响医疗系统的需求²⁵⁻²⁷。

不遵守该标准的潜在后果是计划可能无法实现SBE战略目的和目标。如果不高效利用或准确识别专业知识，计划可能无法创造有效、高效的SBE计划。如果财政拨款无法满足SBE计划的战略需求，持续性也会受到影响和/或发展会受到抑制。

满足此标准所需的标准：

1. 实施一项整合并匹配SBE计划资源以实现目标的战略性计划。
2. 为人员提供适当的专业知识，以支持和维系SBE计划。

3. 利用系统来管理空间、设备和人力资源。
4. 维持和管理财政资源，以支持SBE计划目标和结果的稳定性、可持续性和发展。
5. 使用正式流程以实现有效的系统整合。
6. 创建政策和程序以支持和维系SBE计划。

标准 1：实施一项整合并匹配SBE计划资源以实现目标的战略性计划。

必备要素：

- o 独立于管理机构（若存在），定义支持SBE计划和大型组织任务和愿景的战略性计划^{5,6}。
- o 为以下目标制定计划：
 - 即时战略目标（短于一年）
 - 短期战略目标（1-2年）
 - 长期战略目标（3-5年）
- o 使用支持SBE计划目标和结果的SBE计划组织图，最少确定以下角色²⁰：
 - 模拟领导
 - 模拟营运
 - 模拟教育
- o 战略性计划流程中涉及关键利益相关者^{17,24,28}。
- o 加入持续的模拟人员职业发展方案，其中包括相关的能力验证（参见标准2）^{2,6,17,23,29}。
 - 发展计划应根据具体计划和人员而异，以满足确定的需求，可能包括以下内容：
 - 参加当地、地区和/或全国会议
 - 完成在线或现场SBE主要课程
 - 加入地区网络以分享资源和技能
- o 以规定的审查/修订周期实施系统化评价方案，允许因发生证据、规定和/或计划变化而进行更频繁的审查和/或修订，包括不断回顾模拟最佳实践文献²⁹⁻³¹。
- o 阐明模拟计划的价值定位或投资回报^{19,20}。
- o 确认合理的资本支出，包括^{4,15}：
 - 设施改进和扩展
 - SBE设备
 - 耐用的医疗设备

- o 计划更换已达到使用寿命的资产。
- o 使用一项沟通计划向关键利益相关者报告战略目标的进度^{5,32-34}。

标准 2：为人员提供适当的专业知识，以支持和维系SBE计划。

必备要素：

- o 为SBE计划设计符合组织结构的工作描述。
- o 阐明实践的范围、教育要求和各角色的报酬。
- o 作为招聘和连续聘用流程的一部分，确保人员能够满足工作技能要求，或者在接受培训后能够达到预期^{2,35}。
- o 准确描述SBE计划中各角色的责任。这些角色可以由一名或多名职位不同的人承担：
 - 实施角色职责可能包括¹⁰：
 - 视听
 - 信息技术/系统
 - 模拟人操作和编程
 - 标准化/模拟病人协调、沟通和描述
 - 管理和维护日程表
 - 模拟环境设置/故障
 - 化妆
 - 数据收集
 - 图形和视频内容创建、处理和修改
 - 领导、行政和/或管理角色职责可能包括：
 - 编写、监督、修订和实施政策和程序
 - 日常营运计划监督和管理
 - 与利益相关者联系³⁶
 - 协调人员和资源
 - 培训
 - 聘用/解雇
 - 入职培训
 - 耗材和固定资产订购
 - 预算编制和监督
 - 战略性计划
 - 当教育、资格认证和能力经过验证，无论职务是什么，人员的责任都可以扩展至²：
 - 病例设计和开发
 - 实施和引导
 - 评价
 - 引导性反馈

o 使得经过培训的人员具备设置、操作和维护设备的能力以达到模拟目标。这必须包括以下能力，视具体工作描述而定^{6,7}：

- 模拟IT基础设施计算机网络和连接
- 视听系统
- 随着模拟类型和形式的展开，进行操作和故障排除
- 服装道具和化妆
- 媒体文件的使用、处理、存取、存储、安全和销毁
- 道具的布置、编剧和使用
- 模拟教育目的和教学方法
- 适用的医疗设备和专有名词
- 根据适用项目来应用和培训标准化/模拟病人
- 根据需求评估，开始并持续进行模拟项目的技能开发

标准 3：利用系统来管理空间、设备和人力资源。

必备要素：

- o 设置和分解模拟培训所需要的角色、任务和预期（参见INACSL标准：模拟设计）。
- o 维持人员能力培训计划，使其有能力操作适用设备^{17,28,37}，这些设备可能包括：
 - 病床/诊疗台、设备带、监护仪和其他医疗设备
 - 计算机系统
 - 配药系统
 - 电话系统
 - 生命体征监护仪
 - 局部模型
 - 模拟人
 - 视听或汇报系统
 - 虚拟现实或增强现实培训系统
 - 外科/程序模拟器
 - 基于计算机的培训计划
 - 3D 打印机
 - 电子病历、文档和其他医嘱录入程序
 - 所有其它的模拟特定设备
- o 遵守解决教育目标/目的书面方案，包括支持活动所需的耗材、设备和人员的列表。（参见INACSL标准：模拟设计）
 - 所有基于模拟的活动必须在实施前进行试点测试³⁸⁻⁴⁰。
 - 书面病例说明必须包括设置、运行、引导性反馈或介绍、任务报告和每项模拟活动分解的预期时间。

- 应视情况为标准化/模拟病人培训留出和规划充分的时间⁴¹。
 - 协调和计划环节间的转换，以将停顿时间降至最低⁴²。
 - 使用预定或定期的评审流程，确保所有模拟活动均可行且为根据计划进行资源合理设计。
 - 将结果数据、学员、导师和人员反馈加入该评审流程^{5,30}。
 - 发展系统和/或流程以及政策来为请求分优先级、预定房间、设备，确保在所有模拟活动中都有人员运行和支持。
 - 利用库存控制系统来管理设备和耗材的购买、发货、接收、跟踪、存储和再订购。
 - 确保所有SBE经验和相关活动均在符合机构、国家、国际或其他法规职业安全实践的环境内进行^{43,44}。
- 例如：
- 如果活动中会产生烟雾或气体，要通风
 - 使用正确的人体工程学技术来提升重型设备，以防止受到伤害
 - 针刺和其他伤害的预防、识别和报告

标准4：维持和管理财政资源，以支持SBE计划目标和结果的稳定性、可持续性和发展。

必备要素：

- 通过量化、正式的方案来分析和控制成本，来维持确定的SBE预算⁴⁵⁻⁴⁷。
- 每年对项目的收益和支出制定营运预算。
 - 考虑可通过以下方式开展创造收益的计划活动：
 - 继续教育项目
 - 为外部客户提供服务
 - 捐赠者、利益相关者、伙伴关系、联盟、资助金或贷款⁴⁸。
- 根据组织和SBE计划的环境评审、当前和未来目标/目的和优先级来准备和执行营运预算³⁴。
 - 确定无法改变的固定成本，不论进行模拟的数量是多少。
 - 例如：设施的日常管理费用、维护和服务合同、人员和所有固定人员的职业发展。
 - 根据SBE活动的数量和参与者的人数，确定可变成本。
 - 例如，SBE活动的人员安排，如导师、营运/技术专员的人数，标准化/模拟病人和消耗品的数量，如临床和办公用品。

- 将战略性计划中确定资本支出成本加入作为预算项目（参见标准1）。
- 预测人员角色和责任，包括满足SBE计划的未来参与者结果、计划目标和规定所需的职业发展需求。
 - 预期中包括工作量、职位和工资权益、工作描述、角色预期和执业范围。
- 至少从以下方面来报告SBE计划指标影响与组织成本和/或节省开支之间的关系⁴⁹⁻⁵²：
 - 教育有效性
 - 教育效率
 - 资源管理
 - 患者安全
 - 护理质量
 - 新雇佣效果

标准 5：使用正式流程以实现有效的系统整合。

必备要素：

- 根据大型组织的战略需求指导计划的模拟活动²⁷。
- 制定计划任务和/或愿景和书面政策和程序，阐明SBE计划与其他利益相关者和大型组织或地区相关的角色。
- 与利益相关者沟通SBE计划的任务、愿景和目标如何能够有助于医疗教育的整体改进，并最终提高医疗质量^{27,53-55}。
 - SBE计划可以利用并加入确定的关键表现指标，以提高关乎结果的模拟学习经验⁵³。
- 积极参与并与不同组织进行双向计划合作，为参与者、医疗和/或计划结果的改进做出贡献²⁷。
 - 各小组使用SBE计划来解决质量、患者安全、跨专业教育（IPE）、研究和风险管理，以改进系统活动。
- 确保 SBE 计划具备连续的系统性和计划性改进流程，包括 [Error! Reference source not found.](#)[Error! Reference source not found.](#)[Error! Reference source not found.](#)。
 - 存在并使用的质量/表现改进、传播和维持方案

- 使用一致性数据收集方法的明确的指标
- 适当的资源（例如：人力因素、系统工程、心理测量和信息学）来满足预期计划目标。

标准 6：创建政策和程序以支持和维系SBE计划。

必备要素：

- 考虑和加入人力资源因素，不论雇佣状态是什么（例如：全职、助手、志愿者、学生等），如：
 - 工作量和报酬权益由出资单位支持
 - 所承担角色应有匹配的教育、资历和能力要求
 - 将计划和意外的人员离职计算在内
 - 为所有SBE人员进行持续的能力和熟练度确认²
 - 预期会遵守模拟最佳实践的适用标准²
- 确定做出雇用和升职决定时如何认可、评估和考虑过去的经验和非正式培训。
- 定义数据收集、存储、存取、销毁和报告流程，以确保其实施符合机构和认证机构的预期。
- 描述安全的耗材管理，包括如何处理、保护、存储和维护。根据具体情况，这些可能受机构、国家、国际或其他法规方案支持²⁷。例如：
 - 溶剂
 - 化妆耗材和材料
 - 过期和模拟药物
 - 除颤仪
 - 锐器盒
- 为任何化学、药物或其他危险供应品提供安全信息，以及人员可如何访问。
 - 例如：在美国，适用材料的安全数据表（SDS）⁵⁷或加拿大，工作场所危险材料信息系统（WHMIS）⁵⁸
- 创建明确指南以：
 - 解决重复、矛盾和/或令人困惑的请求。
 - 为空间、设备和人员的使用确定优先级。
 - 根据使用优先级确定日程安排的截止日期。
 - 确定耗材资源的再订货点。
- 确定设备存储、位置、安全和存取的指南，包括：
 - 模拟设备的使用和维护
 - 计划的停工时间和周期性维护日程安排
 - 如何维护和组织模拟设备的用户和系统手册
- 制定录像资料获取、保留和使用政策
 - 政策可能因活动类型和计划用途不同而变化，但是应保持一致并明确叙述
 - 保密
 - 阐明学习活动的心理安全和学员预期
 - 为非预期事件、学员招待或模拟人故障等制定应急计划。

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关于国际护理临床模拟教学协会

国际护理临床模拟教学协会（INACSL）是通过卓越的医疗护理模拟改造实践、提高患者安全的全球领导组织。INACSL是一个模拟实践社区，会员可与模拟领导者、教育者、研究者和行业伙伴合作。INACSL还提供INACSL最佳实践标准：模拟SM，一个指导模拟设计、实施、汇报、评价和研究的基于证据的框架。



最佳实践标准：模拟

INACSL 最佳实践标准：模拟SM 模拟术语

INACSL 标准委员会

关键词

模拟术语；术语
表；术语；定义

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随着模拟科学发展，需要对 INACSL 最佳实践标准：模拟SM不断进行修改和补充。因此，INACSL 最佳实践标准：模拟是动态文件。

模拟术语声明

统一的术语可提供指导和清晰的沟通交流，体现了模拟经验、研究和出版物方面共同的价值观。使用统一的术语可清晰的沟通知识和观点，可推动模拟科学的发展。

背景

标准化的术语可促进参与模拟 (SBE) 的计划者、参与者及其他人的理解和沟通，不论模拟环境如何。因此，模拟术语标准化有助于推动教育、实践、研究和出版领域的用语一致性。

INACSL 模拟术语的定义与 INACSL 最佳实践标准：模拟SM一致，旨在解释标准中术语的意义。尽管模拟术语中的有些定义在医疗模拟字典（如：虚拟病人）中可以找到，在 INACSL 最佳实践标准：模拟SM中使用这些定义很重要。¹

不使用模拟术语的潜在后果可能有：混淆、交流有误、理解有误、和/或无法实现模拟的预期目标和预期结果。

术语

情感

指的是涉及态度、观念、价值观、感觉和情感的学习领域。该学习领域的分类是分层次的，学习是一个涉及内在个人和职业发展的连续阶段。²⁻⁵

评估

指的是提供关于个体学员、团队或项目相关信息或反馈的过程。

具体来说，评估指的是对相关知识、技能和态度(KSA)进程的观察。评估结果可用于提高将来的结果。⁵

虚拟病人

参与虚拟模拟时能够进行较为复杂的行动（包括面部表情和身体反应）的三维图示。用户可通过鼠标、键盘或可控制虚拟模拟的一种操纵杆来控制虚拟病人。^{1,6}

背景

背景叙述，介绍既往史和/或背景，专为模拟中的虚构角色和/或情况而设计。⁷

临床

与医疗环境下个人、家庭或团队护理相关的实际或模拟体验，有应用 KSA（知识、技能、态度）的机会。^{8,9}

临床判断

根据各种知识来确定是否采取行动的一系列判断的艺术。当事人能够认识到某一临床情况的变化和显著方面，诠释其意义，做出适当的反应，并思考采取干预措施的有效性。临床判断受个人的既往经验、问题解决能力、批判性思维和临床推理能力的影响。参见图片。¹⁰⁻¹⁴

临床推理

指随着某一情景的展开回顾相关知识、技能（技术性和非技术性）和态度，使用思考（认知）和反思性思考（元认知）来收集和理解数据的过程。分析后，将信息整合到一起，得出有意义的结论，以判断可选择的措施。参见图片。¹⁵⁻²⁰

指导

指挥或引导个人或小组，以实现一个或多个目标，开发一项特定技能或多项技能，或培养一种或多种能力的方法。^{8,9}

认知

指的是包括知识、理解、应用、分析、整合和评价的学习领域。该领域的学习目标是学员进阶到更高水平的学习，进而能够对所面临的情况做出判断。^{2,5}

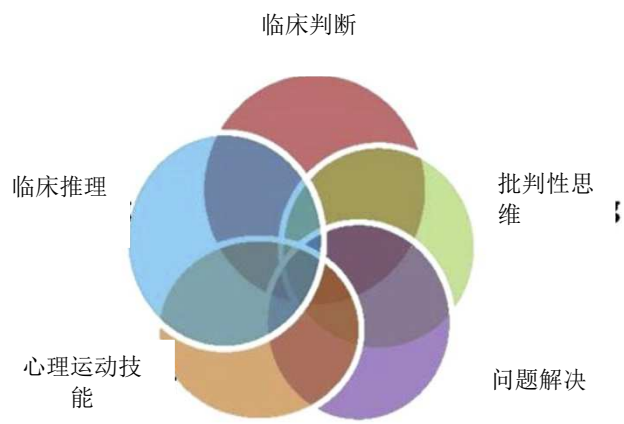


图 技能发展和临床判断[®]。该图由国际护理临床模拟教学协会编制，体现了从基础的技能进阶至更高水平的临床判断和推理能力（其目的是做安全、有效实践的决策）所需的技能发展的复杂性。各发展水平互相关联，因此，它们互相作用、互相影响。

能力

能够基于标准化的准则完成某一特定角色或技能的能力。个人具备能够充分或合理完成某一项工作的能力。标准可能包括一系列被定义的用来指导识别、开发和评价一个人完成某一特定角色的能力的行为。²¹

计算机辅助模拟（又称为虚拟现实）

旨在通过使用替代媒介来提供体验式的模拟学习。学习者可在多种潜在环境下完成特定任务，利用信息来提供评估和照护，做出临床决策，并在行动中观察结果。可在互动过程中和互动后提供反馈。²²

概念图

一种实现各种概念间关系的视觉化的教学策略或方法。这包括概念的分支、分层结构图，使用箭头和标签来显示它们之间的相关关系。²³

建构主义

一种认为知识是个体通过与他们所在环境的互动所创造出来的内容的学习理论。在建构主义中，学习是一个发现的过程，在这个过程中学习者寻求理解问题，由此指导着与个人化相关联的发现过程。模拟正是基于建构主义理论进行。²⁴

批判性思维

一个需要验证数据的严谨过程，包括任何可能影响思想和行动的假设，以及评价需要采取的必需行动的有效性时对整个过程的认真思考。这个过程需要有目的性的，以目标为导向的思考，基于科学原则和方法（证据），而不是假设或猜想。参见图。^{12,25,26}

提示（又称为提示性内容）

为帮助学员理解情景并帮助情景进展，从而实现既定目标而提供的信息。提示包括两种类型，概念性和现实提示，提示方式包括通过设备、环境，或病人以及角色扮演。概念性提示向学习者提供了信息，以实现模拟的预期结果。现实提示通过模拟患者或角色传达的信息帮助学员理解或弄清所模拟的现实。^{27,28}

引导性反馈

在模拟结束后立即开始的反思性过程，由经过培训的导师借助基于循证依据的引导性反馈模式展开。鼓励学员进行反思性思考，就学员的表现提供反馈，同时对完成模拟的不同方面进行讨论。鼓励学员探索情感和问题，反思并互相提供反馈。引导性反馈的目的是同化和顺应的结合过程，以将学到的内容应用到将来遇到的情景中。^{27,29}

决策制定

从多个选择方案中选择一个行动方案的心理过程（认知过程）。^{8,9}

多样性

一个概念，包括理解个人的独特性以及认识到人与人之间的差异。多样性的维度包括民族、种族、性别、年龄、宗教、社会经济地位、身体素质或残疾、性取向，以及宗教、政治或其他信仰。³⁰⁻³²

学习领域

.....学习者可实现的三个独立但却相互依赖的学习结果组成。这些领域包括：认知、情感和心理运动，代表了学习复杂程度的不同种类和水平，通常称为教育分类法。

--参见表。^{3,4,33,34}

嵌入参与者（又称为情景向导、情景角色扮演者、演员或合作者）

模拟情景中指定的引导情景的角色。取决于目标、学员水平和情景，引导可以是积极的、消极的、中性的、或是干扰性的。尽管嵌入参与者角色是情景的一部分，但是在情景或模拟中不会向学员透露角色的根本目的。¹

评价

一个广义的概念，通过一种或多种测量手段获得数据，并对数据进行评价。这涉及做出关于优势与不足的判断。评价用质量和生产力来衡量标准的表现。³⁵评价可以是过程性的、总结性的、高风险的或与模拟项目或过程相关。

过程性评价

导师重点评价学员通过预设标准实现目标的过程中的进展；针对参与模拟的个人或团体的过程，目的是为个人或团体的进步提供建设性反馈。^{5,27}

总结性评价

在一个学习阶段末尾或各个分散时间点所进行的评价，会依据预设标准向学员提供结果反馈；判断学员参与医疗活动能力的过程。对结果的评价可能与评分有关。^{5,27}

高风险评价

与模拟相关的，在多个分散的时间点由重要的学术、教育或执业结果（如等级评定，包括通过还是不通过聘用；关于能力、绩效工资、升职或认证的决定）来进行的评价过程。³⁶高风险指的是过程的结果或后果。

表 布卢姆最初的（1956 年）和布卢姆修订后的（2001 年）护士质量和安全教育能力和知识、技能和态度（KSA）目标分类对比

学习领域	知识维度	护士质量和安全教育（QSEN）能力
最初的布卢姆目标分类 (QSEN, 2014 年)	修订后的布卢姆目标分类 (布卢姆, 1956 年)	护士质量和安全教育（QSEN）项目 (Bloom, 1956 年; QSEN, 2014 年; Williamson & Harrison, 2010 年)
认知	事实知识	知识
心理运动	概念知识	
情感	过程性知识	技能
	元认知知识	态度

项目或过程评价

系统性的收集关于模拟的活动、特点和结果的信息，以对项目进行判断、提高或推进项目有效性、增强理解并告知未来项目的决定。³⁷ 具体来说，该过程包括对学员、导师、模拟体验、设施和支持团队的评估。

引导

在整个模拟过程（前、中、后）中，通过提供指导来促成结果的一种方法和策略。³⁸

导师

经过培训的个人，在模拟的某些或所有阶段提供指导、支持和组织，包括介绍、模拟运行和/或引导性反馈。^{8,9}

反馈

学员、导师、模拟病人或同行间提供的信息或进行的对话，目的是提高对概念或表现方面的理解。³⁸

虚拟协议

学员和导师之间关于预期学员如何与模拟情景互动，以及导师会如何对待互动的明示或暗示的共识。³⁹

仿真度

查看或代替事物以增强可信度的能力。¹ 模拟体验接近现实的程度；仿真程度越高，真实感越强。仿真度水平由环境、使用的工具、资源及学员等许多相关因素决定。

仿真度包括多个维度：

概念仿真度

确保情景或案例的所有元素以逼真的方式相互关联，使整个案例对学习者有意义（例如：能反映诊断的生命体征）。¹

物理/环境仿真度

物理因素，如环境、人体模型、房间、化妆、设备、噪音和/或道具。⁴⁰

心理仿真度

学员的许多因素，如情感、信念、自我意识以及模拟环境在多大程度上可以唤起学员在实际环境中需要的内在心理活动。学员感受到的逼真程度，包括模拟情景中心理因素，如情感、信念和自我意识。⁴⁰

框架

个人解读新信息和体验以理解新的体验所使用的看不见的“镜头”。框架形成于过去的经验，可基于知识、态度、感觉、目标、规则和/或感知；学员或导师的内在心态；知识、思想、感觉、行动（语言/身体语言）、态度（语言/非语言）和感知。^{41,42}

力反馈设备

计算机技术，通常为三维，整合本体感受（触摸），允许学员基于系统反馈与虚拟设备进行互动和控制虚拟设备。力反馈设备可用于模拟触摸、模拟器官或身体触诊、和/或切割、撕裂或拉伸组织，例如使用虚拟胸管或虚拟静脉穿刺系统。学员的决定很大程度上受系统反馈影响。^{1,43}

混合式模拟

使用两种及以上模拟形式来提高一个情景的仿真度：整合真实患者接触的环境、生理、情感和对话因素。例如：使用人体模型代表患者，嵌入参与者来扮演患者声音，或扮演担忧的家庭成员的角色。^{1,44}

现场模拟

在真实的患者照护情景中进行的模拟，医护人员会完成正常工作以实现较高水平的仿真度。^{1,45-47}

跨专业教育

两个或更多专业的学习者（或医护人员）互相学习，以实现有效的合作，提高医疗结果。⁴⁸

干预保真度

指的是对已设计的研究计划遵循及执行的程度。任何与研究设计不一致的地方均应指出。⁴⁹⁻⁵³

知识、技能、态度(KSA)

持续提高个人所在的医疗系统的质量和安全性所需的知识、技能和态度的缩略语。³⁴

知识

个人通过经验或教育所获得的意识、理解和专业知识。

技能

通过刻意练习和不懈努力所掌握的能力以开展活动。

态度

对某一观点、个人或情况作出积极或消极回应的倾向。

救场

应对模拟中意外事件的方法。预案可以是预先确定的，和/或干预措施可在模拟中自主发生，以使学员完成模拟。⁵⁴

模拟类型

该术语指的是作为模拟活动一部分所使用的模拟类型，例如：局部模型、人体模型、标准化/模拟病人、高端模拟人、虚拟现实和混合模拟。¹

化妆

创建某一情景特定的模拟伤口、损伤、疾病、衰老过程和其他物理特点所用的技术。化妆借助化妆品、道具（如尖锐物体）、和气味来支持学员的感官知觉和模拟情景的逼真性。^{55,56}

需求评估

识别学习者知识、技能或态度差距的系统性过程。^{5,7}

目标

在模拟中，期待学员实现的具体的、可测量的结果的描述。描述可包括匹配学习者知识和经验水平的认知（知识）、情感（态度）或心理运动（技能）学习领域。⁵⁸⁻⁶⁰

结果

学员为实现一系列目标而取得的可测量结果。预期结果是因模拟而发生的知识、技能或态度的变化。^{8,9}

学员

参与模拟活动以掌握专业实践所需要的 KSA 的个人。⁸

介绍

模拟开始前进行的信息沟通或环境熟悉环节，在此期间向学员提供指导或准备信息。介绍的目的是为学员创造一个心理上的安全环境。⁶¹ 建议的活动包括回顾目标；建立“虚拟协议”；使学员熟悉设备、环境、人体模型、角色、时间分配和情景。

过程性模拟

使用模拟形式（如局部模型、人体模型、计算机）来协助学习，以完成一项技术技能或过程，过程指的是为实现某一目的而采取的一系列步骤。¹

问题解决

指的是借助现有知识和收集相关信息，来选择性的注意患者照护环境的信息，以制定解决方案的过程。这个复杂的过程需要不同的认知过程，包括推理性和策略性的方法，以应对某一情况。⁶²

专业界限

设定用来维护模拟的所有参与者间进行有效和恰当的互动/行为的清晰明确的界限。⁶³

职业操守

一个人始终遵循所从事行业的伦理准则来进行执业的品质。⁶⁴⁻⁶⁶

提示信息（又称提示）

情景中给予学员的提示或线索。

心理运动

指的是一个涵盖专业实践领域所需技能的学习领域。⁶⁷

心理运动技能

高效、有效、迅速、准确的进行肌肉运动或身体运动的能力。心理运动技能不仅仅是能进行运动；它还包括在不同的情况下以及在一定的时间限制内熟练、顺利、一致的进行运动的能力。⁶⁷ 参见图。

护士质量和安全教育

护士质量和安全教育的定义为护理的质量和安全管理能力。护士质量和安全教育的总体目标是解决该项挑战：使护士能够利用必要的 KSA 特点来不断提高其所工作的医疗系统的质量和安全性。² 参见表。

反思

在模拟期间或之后所进行的自我监控的参与。它是经验性学习的一个必不可少的部分，可以帮助促进发现新知识以便将该知识应用到未来的工作中。

反思对于元认知技能获取和临床判断必不可少，可缩小理论与实践之间的差距。反思需要创造性和有意识的自我评价，以应对独特的患者情况。⁶⁸⁻⁷⁵

可靠性

一项测量的一致性或在相同条件下由相同学员使用一个工具以相同方式测量的程度。指的是一项测量的可重复性。如果某个人在两次类似情况的测试中取得的分数相似，则认为该项测量可靠。可通过重复测试或内部一致性测试确定可靠性。^{8,9}

角色

在模拟中所承担的责任或角色。^{8,9}

安全的学习环境

所有学员（包括导师）互动所形成的情感环境。在这种积极的情感环境下，所有参与者都不惧怕承担风险、犯错或挑战自己的舒适地带。意识到学习的心理方面、非故意性偏见的影响、文化差异以及对自我内心的关注有助于有效地创建一个安全的环境。⁸

情景

刻意设计的模拟体验（又称为案例），可为学员提供达成设定目标的机会。情景提供了模拟的背景，其长度和复杂性可因目标而异。^{59,61,76-78}

自我效能

指个体对自己是否有能力完成某一行为的感知或信念。这可能体现在个体如何行动和/或表现。⁷⁹

模拟

一种教育策略，通过创建或复制特定的条件来模仿现实中可能发生的实际情况。模拟可涵盖一种或多种形式，以促进、提升或验证学员的表现。⁸⁰

模拟经验

多种结构性活动，代表实际或潜在的教育、实践和研究情况。这些活动可让学员培养或增强知识、技能和/或态度，在模拟环境下提供分析和应对现实环境的机会。

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模拟的临床沉浸

一种计划好的模拟，学员全神贯注于一种与现实世界类似的情况或环境中。目标是以完全互动的方式唤起或复制逼真的情况。⁸²

模拟强化跨专业体验

在模拟活动中，来自两个或更多专业的学员和导师共同参与模拟医疗体验中，以“……追求共同的或相关联的教育目标，⁸³而相关个体“互相学习以实现有效合作、提高医疗结果”。⁸⁴

标准化患者（又称为模拟患者）

经过培训的个体，始终按病例脚本来扮演患者或他人，以实现授课、练习或评价的目的。^{1,85}

效度

一项测试或评价工具能够准确测量预期收益概念的程度。^{8,9}

虚拟现实（又称为计算机辅助模拟）

计算机生成的现实，可让一个学员或一组学员体验各种听觉和视觉刺激。虚拟现实可通过专门的耳机或眼罩来体验。^{1,86}

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