

# Digital Health Logic Model

Example Model with DHZ Use Case Data and  
Empty Template for General Use

Adapted from:

Smith, J.D., Li, D.H. & Rafferty, M.R. The Implementation Research Logic Model: a method for planning, executing, reporting, and synthesizing implementation projects. *Implementation Sci* **15**, 84 (2020). <https://doi.org/10.1186/s13012-020-01041-8>

**DETERMINANTS (+ opportunities, - challenges)**

**INTERVENTION CHARACTERISTICS:**

- + Intervention source: Digital pain drawing (PD) tool developed together with the spine center
- + Relative advantage: Improved patient guidance and data analysis capabilities
- + Adaptability: Easy onboarding, runs on multiple devices, usable as PRIM and PROM, integrates with patient and physician documentation, fits into patient journey, and links with other tools
- + Trialability: Can be tested on a small scale easily
- Specificity: Tool is specifically for spine-related conditions, may not apply to other areas

**INNER SETTING:**

- + Existing use of PDs and outcomes
- + Interest in developing the tool
- + Fast decision making processes
- Potential technical challenges
- Onboarding of patients at home: Potential challenges in getting patients to engage
- Ensuring clinicians adopt and use the tool

**OUTER SETTING:**

- + Large patient population
- + Increasing importance of digital tools in medicine
- Regulatory requirements (MDR)
- Potential competition from similar tools
- Not all patients can or want to use digital tools

**CHARACTERISTICS OF INDIVIDUALS:**

- + Broad variety of knowledge and skills in the team
- Interdisciplinary team communication challenges

**PROCESS:**

- + Regular team meetings
- Accessing patients for testing

**PHASE & INPUTS**

**DESIGN PHASE**

**Stakeholder engagement** (1)

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**STANDALONE TESTING**

**Prototype PD tool** (2)

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**INTEGRATED TESTING**

**Refined PD tool** (3)

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**IMPLEMENTATION**

**PD tool integrated into hospital system** (4)

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**EVALUATION**

**Implemented PD tool** (5)

**IMPLEMENTATION STRATEGIES**

- Needs assessment
- Initial PD tool design
- Stakeholder consultations

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- Pilot testing of standalone PD tool
- Data collection on usability and acceptability

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- Pilot testing of integrated PD tool within the hospital system
- Data collection on feasibility and appropriateness

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- Training and support for clinicians
- Information and support for patients
- Full-scale deployment

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- Process evaluation (implementation sustainability)
- Outcome evaluation

**MECHANISMS**

- Stakeholder Engagement: Ensures relevance and user ownership
- Iterative Feedback: Allows continuous refinement

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- User Engagement: Identifies usability and acceptability issues early
- Feedback Integration: Guides targeted improvements

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- Contextual Adaptation: Improves tool fit within the hospital system
- Stakeholder Feedback: Provides insights for necessary adjustments

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- Training and Support: Enhances engagement and provides insights for necessary adjustments
- Workflow Alignment: Ensures tool complements existing processes

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- Continuous Monitoring: Identifies issues and opportunities for improvement
- Outcome Assessment: Provides evidence for impact and guides refinements

**OUTPUTS & FEEDBACK LOOPS (FL)**

- Prototype PD tool
- Stakeholder feedback
- FL: Iterat. design adjustments based on feedback

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- Pilot test results
- Identified areas for improvement
- FL: Modifications based on pilot feedback

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- Identified areas for improvement
- FL: Modifications based on pilot feedback

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- Number of trained users
- Number of completed PDs
- FL: Continuous support and troubleshooting

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- Data on process and outcomes
- FL: Implementation adjustments based on evaluation findings

**OUTCOMES**

- Well-defined PD tool features
- Stakeholder commitment

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- Refined PD tool
- Validated **usability** and **acceptability**

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- Refined integration of PD tool
- Validated **feasibility** and **appropriateness**

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- Improved **clinical processes**
- Enhanced **patient management**
- **Adoption** and **fidelity**

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- Understanding of the tool's **impact**
- Recommendations for future improvements
- **Sustainability**

DETERMINANTS (+ opportunities, - challenges)

INTERVENTION CHARACTERISTICS:

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INNER SETTING:

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OUTER SETTING:

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CHARACTERISTICS OF INDIVIDUALS:

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PROCESS:

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PHASE & INPUTS

**DESIGN PHASE**

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**STANDALONE TESTING**

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**INTEGRATED TESTING**

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**IMPLEMENTATION**

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**EVALUATION**

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IMPLEMENTATION STRATEGIES

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MECHANISMS

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OUTPUTS & FEEDBACK LOOPS (FL)

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OUTCOMES

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