



# Wise Practices of Leadership Development Technical Report

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**NOTE: The literature review and interviews that form the basis of this report were completed prior to the Pandemic. The final Wise Practices Toolkit takes account eLearning that has now become the norm.**

## Preface

The Canadian Health Leadership Network (CHLNet) is a purpose-built coalition of over 40 organizations (member representatives are referred to as Network Partners). CHLNet's vision is *Better Leadership, Better Health – Together* and they strive to achieve this by researching the need for better leadership and evidence of effective approaches to developing and supporting great leadership and increased leadership capacity in health organizations. Further details are outlined in CHLNet's Strategic Plan (see [www.CHLNet.ca](http://www.CHLNet.ca)). A key initiative to advance its vision is the Wise Practices study, which follows a Benchmarking Study (called "Bench 2") earlier this year that outlined important perceptions of leadership gaps in health organizations across Canada and suggested that evidence-informed guidance and tools were required. **Wise practices** are those that are evidence-informed based on a possible combination of empirical evidence, the wisdom of practical experience ("best practice"), and the potential for innovative approaches.

Over the past seven months, CHLNet has supported an ad hoc, expert Steering Group to guide this study (referred to as "Wise Practices"). The Group was co-chaired by Gillian Kernaghan (St. Joseph's Health Care, London) and Maria Judd (Canadian Foundation for Healthcare Improvement) and involved the following members: Sharon Bishop (Saskatchewan Health Authority), Stevie Colvin (Alberta Health Services), Maryanne D'Arpino (Canadian Patient Safety Institute), Graham Dickson (CHLNet and Royal Roads University), Kelly Grimes (CHLNet), Andrea Johnson (Nova Scotia Health Authority), Brenda Lammi (LEADS Canada/Canadian College of Health Leaders), Ellen Melis (Unlimited Potential), Wendy Nicklin (CHLNet Emeritus, International Society for Quality in Health Care), Rita Notarandrea (Canadian Centre on Substance Use and Addiction), Ingrid Richter (University of Ottawa), Bill Tholl (CHLNet), Johny Van Aerde (Canadian Society of Physician Leaders), Judy Wylie (Hotel Dieu Grace Healthcare Windsor), and the principal investigator and author of this report, Jaason Geerts (LEADS Canada and Cass Business School, City, University of London).

This project was also supported by generous financial and in-kind contributions from the Canadian Foundation for Healthcare Improvement (CFHI), the Canadian Centre on Substance Use and Addiction, the Canadian Society of Physician Leaders (CSPL), the Canadian College of Health Leaders (CCHL), and CHLNet.

The **purpose** of this study was to gather evidence from academic literature and from Canadian and international Subject Matter Experts (SME's) on evidence-informed approaches to, or innovative wise practices of, leadership development in health. This evidence was intended to form the empirical basis for designing a toolkit that could support those designing or refining programs as they strive to increase individual and organizational leadership capacity and to achieve performance excellence and system transformation.

## Executive Summary

The Canadian Health Leadership Network (CHLNet) conducted a study of wise practices of health leadership development. **Wise practices** are those that are evidence-informed based on empirical evidence, the wisdom of practical experience (otherwise called “best practice”), and the potential for innovative approaches.

The purpose of the study was to produce an evidence-informed toolkit of wise practices of health leadership development. This toolkit is intended to support those designing or refining programs as they strive to increase individual and organizational leadership capacity and to achieve performance excellence and system transformation.

Wise practices were identified through two literature reviews and the input of Subject Matter Experts (SME’s) through interviews and surveys. A conceptual framework was created to depict the key aspects of the study, including its purpose, data sources, key sub-topics, and outputs, as well as their interrelation.

### Wise practices

#### *Program Design*

##### *Pre-planning and addressing the context*

- ✚ Align programs with the organization’s values, vision, Strategic Plan, and context
- ✚ Use a leadership capability framework as a common language, such as LEADS
- ✚ Involve stakeholders in a needs, gaps, and opportunities analysis to inform the program goals and to earn their support

##### *Design process*

- ✚ Select desired outcomes that are aligned with the organizational strategy and context
- ✚ Outline how programs integrate with each other and with HR/OD practices
- ✚ Select the participants intentionally to best meets the needs of the organization
- ✚ Select the content, structure, faculty, and composition of programs using an outcomes-based design
- ✚ Select the developmental activities based on their intended impact on outcomes
- ✚ Consider eLearning options as substitutes for or complements to in-person aspects
- ✚ Provide a blended approach that involves formal learning, experiential components, feedback, reflection, and exposure to peers and mentors, akin to the 70-20-10 model

##### *Evaluation and accountability*

- ✚ Devise an evaluation framework for the program, its components, and the participants

- ✚ Ensure that participants have Personal or Leadership Development Plans (PDP/LDP), Accountability Agreements (AA), and further opportunities.

### *Program Delivery*

- ✚ Communicate clearly the relevance of, and connections among, the goals, content, program activities, and outcome metrics of leadership development
- ✚ Address the characteristics of adult learners (self-directed, experienced and knowledgeable, relevance- and practical-oriented, and goal-oriented)
- ✚ Embed activities in experiential learning cycles: a sequence of goal setting, the activity, evaluation and feedback, discussion, reflection, revision of goals, and support
- ✚ Create a psychologically safe space in which participants can experiment, commit errors, and receive follow-up support.

### *Evaluation and accountability*

Creating an evaluation framework and including accountability agreements are essential to maximizing the impact of leadership development and to the achievement of desired outcomes.

Evaluation frameworks can:

- ✚ Provide precise focus to leadership development and signal that it is valued and that application and positive outcomes are expected
- ✚ Contribute to optimizing the experience (otherwise called quality control),
- ✚ Establish benchmark data to measure relative change,
- ✚ Enhance the process of development, and consequently, outcomes, and
- ✚ Provide evidence of outcomes that have been achieved/the return on investment (ROI), which can promote continued and increased investment.

The **focuses** of evaluation are on *outcomes* of the program at various levels, including unanticipated outcomes, and on participants' *satisfaction* with the program and its components *as measured by* how each component contributed to the achievement of desired outcomes.

**Types of data:** it is important to collect *subjective* data (perceptions) and *objective* data (external ratings, statistics or factually verifiable results).

Evaluation should take place at *baseline* (or before the program begins), periodically *during* programs, at the *end* of the program, and *six to nine months following* the program.

Evaluation is most beneficial when accompanied by an Accountability Agreement (AA) for participants, as well as of accountability on behalf of participants' supervisors.

## **Application of learning and sustainability strategies (individual and team level)**

Application of learning strategies before and after interventions have been found in some cases to have a larger impact on program success than the activities implemented during programs themselves. These strategies include:

### *Before programs*

- ✚ Address participants' motivation to develop and involve them in the design process
- ✚ Ensure that there is requisite organizational support and protected time
- ✚ Apply an outcomes-based design that links program components together explicitly
- ✚ Select developmental activities based on their intended utility in achieving the desired outcomes, particularly those that involve direct application to work
- ✚ Consider whether and how eLearning options should be included
- ✚ Consider providing designation-specific syndicate sessions for mixed programs
- ✚ Evaluate programs and participants' performance and hold them accountable
- ✚ Conduct a barriers and enablers assessment and use the results to remove or circumvent obstacles to application and leverage enablers.

### *During programs*

- ✚ Communicate explicitly the purpose, goals, content, outcomes, and evaluation framework of leadership development so that there is a shared understanding and accountability among the providers, faculty, participants, and other stakeholders
- ✚ Evaluate during the programs and modify program components, support, and/or participants' goals accordingly
- ✚ Provide mentoring and coaching for medium and longer length programs
- ✚ Embed activities in experiential learning cycles

### *Following programs*

- ✚ Ensure that each participant has a Leadership Development Plan (LDP) and Accountability Agreement (AA) afterward that outline clear next steps, along with further development opportunities.

## **Leadership initial implementation and system-wide integration strategies (organizational level)**

### *Introducing leadership development*

- ✚ Demonstrate the need for leadership development by connecting program goals to the organizational strategy and context

- ✚ Ensure that the design of programs is customized, evidence-informed, and involves input from key stakeholders to enhance their relevance and shared ownership
- ✚ Decide which program participants are best to achieve the goals
- ✚ Earn the engagement and support of senior leaders and supply of adequate resources
- ✚ Identify barriers to success and enablers that can be leveraged
- ✚ Establish an organizational culture that is conducive to, and supportive of, change
- ✚ Decide whether to trial a pilot program or launch a multi-pronged approach
- ✚ Evaluate the program(s) and hold participants and their supervisors accountable
- ✚ Communicate early wins publicly and identify internal champions or ambassadors
- ✚ Ensure that participants have a Leadership Development Plan (LDP) and Accountability Agreement (AA) with clearly defined next steps
- ✚ Consider organizational next steps in terms of programs and HR/OD practices.

### *Integrating leadership development*

- ✚ Ensure that senior leaders value leadership development as an investment in people, as an organizational strategic priority, and as a key performance enabler at all levels
- ✚ Introduce a leadership capability framework as a common leadership language
- ✚ Integrate formal programs and informal activities and depict them in a blueprint
- ✚ Reinforce development with HR/OD practices, such as hiring interview guides, onboarding, performance evaluations, and the development of career pathways
- ✚ Hold specific people accountable for leadership development and develop a talent management continuum and succession planning strategy
- ✚ Develop a communications strategy to inform staff and to celebrate successes
- ✚ Build internal capacity to develop leadership without relying on external providers
- ✚ Engage non-positional leaders, mainly by leveraging internal champions or ambassadors, so that leadership disperses widely across the organization
- ✚ Two key components of distributing leadership across an organization are trust and psychological safety, which were stressed consistently by SME's as being essential
- ✚ Calculate the return on investment of leadership development in a meaningful way
- ✚ Consider how the voices of patients and families can inform leadership development
- ✚ Consider engaging in initiatives with community representatives

## *Principles of leadership development*

The principles follow from the sentence: *research suggests that leadership development is optimized when it is: needs- or opportunity-based, customized for the participants and their organization or community and their context, evidence-informed, experiential and application- and outcomes-oriented, motivational and relevant, symbiotic and involves shared ownership and support, evaluated and involves shared accountability, capacity-expanding through increased self-awareness, efficacy, adaptability, innovation, and collaboration skills, investment-oriented and integrated.*

## *Next steps*

This project is proceeding in three phases. Phase 1 is now complete with this technical report that gathered evidence from academic literature and from Canadian and international subject matter experts to identify wise practices that have been shown to be effective in terms of leadership development in health. Phase 2 is now underway to distill from the pool of wise practices necessary elements to build an impactful program. A subgroup has been struck of OD/HR experts to help us with a focus on technology and virtual delivery mechanisms that an enhanced need as a result of COVID-19. And lastly in Phase 3, we will organize the tools and resources identified in Phase 2 in a web-based architecture so individual organization representatives can utilize the toolkit to inform the development of their unique organizational programs. The final toolkit will be free to CHLNet network partners.

## *ABC's of leadership development: critical success factors*

The following points represent critical success factors for leadership development, most of which can be included at little or no financial cost.

- ✚ The natural start is **education**/new knowledge, skills or capabilities (e.g. workshops, lectures, or webinars)
- ✚ Include **application** (to work) activities, such as action learning projects and simulations with peer and expert feedback
- ✚ Consider how to best utilize **eLearning** options for education and information sharing
- ✚ Include **Leadership Development Plans** (LDP's) and **Accountability Agreements** (AA's)
- ✚ **Evaluate** programs and performance *and hold people accountable*

- ✚ Include **mentoring** and **peer coaching**. Mentorship is most effective when each mentee has two mentors: one 2 – 5 years more advanced and one more senior (15 – 25 years ahead). Provide guidance to mentors, mentees, and peer coaches on expectations and effective strategies
- ✚ Ensure **formal feedback** is provided to participants and that they are encouraged to **reflect** on its relevance to their the LDP, enhancing their self-awareness. 360’s can be highly effective
- ✚ Provide **networking** opportunities to facilitate peer support, collaboration, and coalitions, to connect participants to experts, and to stimulate ideas for innovation
- ✚ Involve **patient and family** voices in discussions concerning organizational needs and opportunities, which can inform the selection of desired outcomes
- ✚ **Integrate** leadership development programs and interventions with other human resources and organizational development practices, such as performance evaluations and promotion criteria. This is **absolutely essential** to maximizing outcomes.

### *Executive leaders*

The following developmental activities are especially helpful for executive leaders, given their experience and busy workloads:

- ✚ 360’s followed by one-on-one **professional coaching**
- ✚ **Group coaching** for the Senior Leadership Team to problem-solve together and develop team dynamics
- ✚ **Micro-burst** specific information sessions on current topics and training sessions
- ✚ **eLearning** options that leaders can access at their convenience
- ✚ **Networking** with external counterparts and key contacts, including government officials and potential and current donors

Also, involving them as **mentors** for senior leaders as part of succession planning and occasionally for mid-level and junior leaders can contribute to healthy culture promotion and to demonstrating the importance of development.

### *Junior and mid-level leaders*

The following are leadership development focuses particularly for junior and mid-level leaders.

- ✚ Develop their **technical expertise**, which is influential in leadership effectiveness
- ✚ Pay particular attention to **eLearning** options for younger leaders

- ✚ Develop *communication* and *teamwork* capabilities, particularly through action learning projects
- ✚ Expose them to *career pathway* opportunities through job shadowing and mentors
- ✚ Develop *business acumen* in those progressing to senior leadership roles
- ✚ Develop their *change leadership* and sustainability capabilities
- ✚ Provide *networking* opportunities with those in different departments so that they develop a better understanding of the system.

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## Introduction

The recent CHLNet study involving nearly 2,000 Canadian health professionals and academics (called “Bench 2”) revealed widespread concerning perceptions of leadership gaps in Canadian health organizations that are reportedly having a large negative impact on organizational outcomes and are, purportedly, getting worse<sup>1</sup>. The study also unveiled that nearly half of respondents reported being dissatisfied with both the selection and effectiveness of leadership development programs offered by health organizations. There were also causes for hope in the study’s findings, including that diversity in succession planning is becoming more common and diversity of perspectives among senior and mid-level leaders appears to be increasing, albeit slowly. Furthermore, clinicians (nurses and doctors) reported that their main incentives for taking on a leadership role were believing that they could make an organizational difference and the majority stated that the second strongest incentive was being provided adequate leadership development. For these reasons, one of the central recommendations of the report is that evidence-informed leadership development is needed to close the gaps and increase organizational capacity.

It is estimated that organizations spend \$50 billion (USD) on leadership development annually<sup>2</sup>, which is nearly half of all funds allocated per year to cancer treatment<sup>3</sup>. There is reliable evidence that leadership development can contribute to positive outcomes at the individual, team, organizational, and benefit to patients levels<sup>4</sup>. These outcomes include reports of decreased absenteeism, increased job satisfaction, staff well-being, retention, engagement, motivation, commitment, sense of shared purpose, staff performance, organizational performance clinically and financially, and improved patient outcomes. Conversely, there are also numerous examples of leadership programs that have been shown to underperform or fail<sup>5</sup> and that the application of learning to the workplace following development interventions has been found to be as low as 5%<sup>6</sup>. For example, the CHLNet Bench 2 study revealed that nearly every organization involved in the study offers leadership development; however, ratings of the satisfaction with the programs were generally low. There also appears to be widespread uncertainty regarding which information on the design of leadership programs even in academic journals is reliably evidence-informed and which is not, since a recent study found that the majority of published studies are of limited or anecdotal quality<sup>7</sup>. It is unsettling if funds are devoted to programs that are designed without reliable evidence<sup>8</sup>, especially in sectors such as health where there are tightening budgets and rising costs and people’s health are on the line.

The state of health leadership portrayed by the results of the 2019 CHLNet benchmarking study, the potential for leadership development to contribute to closing the gaps and to build individual and organizational capacity, and the widespread uncertainty regarding which approaches to program design, delivery, evaluation, implementation, and integration are reliably evidence-informed were key motivations for conducting the Wise Practices Study. This project was also launched in response to the requests and funding provided by CHLNet Network Partners who sought clarification in terms of the most reliable evidence on the topic, as well as tools and resources that could be applied in practice.

## **Structure of the report**

The structure of this report begins with the methodology of the study, including its conceptual framework, methods of data collection, sample, and data analysis. This is followed by the key findings, or wise practices of leadership development, based on the sub-topics identified in the research questions and the conceptual framework. The discussion outlines the principles of leadership development and the implications for practice, which is the foundation for the creation of the toolkit. This is followed by the “ABC’s” of leadership based on the principles, which provide suggestions of applying them to program design. Finally, next steps and conclusions are provided.

## **Methodology**

The team assembled to undertake this study was comprised of a Steering Group of CHLNet Network Partners representatives, health leaders, and academics.

The first step in the research process was to determine the project scope, outputs, data sources, and the central research questions. An advisory group of the CHLNet core secretariat and the lead researcher determined the scope of the study and key sub-topics of interest based on themes highlighted in recent scholarship<sup>1</sup>. The advisory group also decided to prepare a conceptual framework to depict the key aspects of the study, including its purpose, data sources, key sub-topics, and outputs, as well as their interrelation. In terms of outputs, the advisory group planned for a research report (i.e. this report) as part of a toolkit that would also include others tools and resources to guide those designing and refining

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<sup>1</sup> This includes a book (Dickson and Tholl, 2020), a recent PhD dissertation (Geerts, 2019), and an academic publication (Geerts et al., 2020)

programs. Based on the purpose of the study and these key sub-topics, the advisory group drafted an initial set of research questions, which was discussed with the Steering Group until consensus was reached.

The research questions that guided this study were:

1. What evidence-informed approaches to leadership development design, delivery, and evaluation appear to contribute to optimizing the outcomes of programs in health organizations?
2. What evidence-informed application of learning strategies appear to contribute to maximizing the outcomes of leadership development and the sustainability of those outcomes?
3. What approaches to introducing leadership development to organizations and integrating it system-wide appear to be most effective?
4. What core principles<sup>2</sup> appear to underly optimal leadership development?
5. What tools and resources could form a toolkit that would best support those designing, delivering, and integrating leadership development programs?

The advisory group also proposed data sources that could most effectively and feasibly provide reliable evidence to answer the research questions. The Steering Group approved these sources, which were a review of the literature, an online survey sent to Subject Matter Experts (SME's), and key informant interviews (KII's).

## **Conceptual Framework**

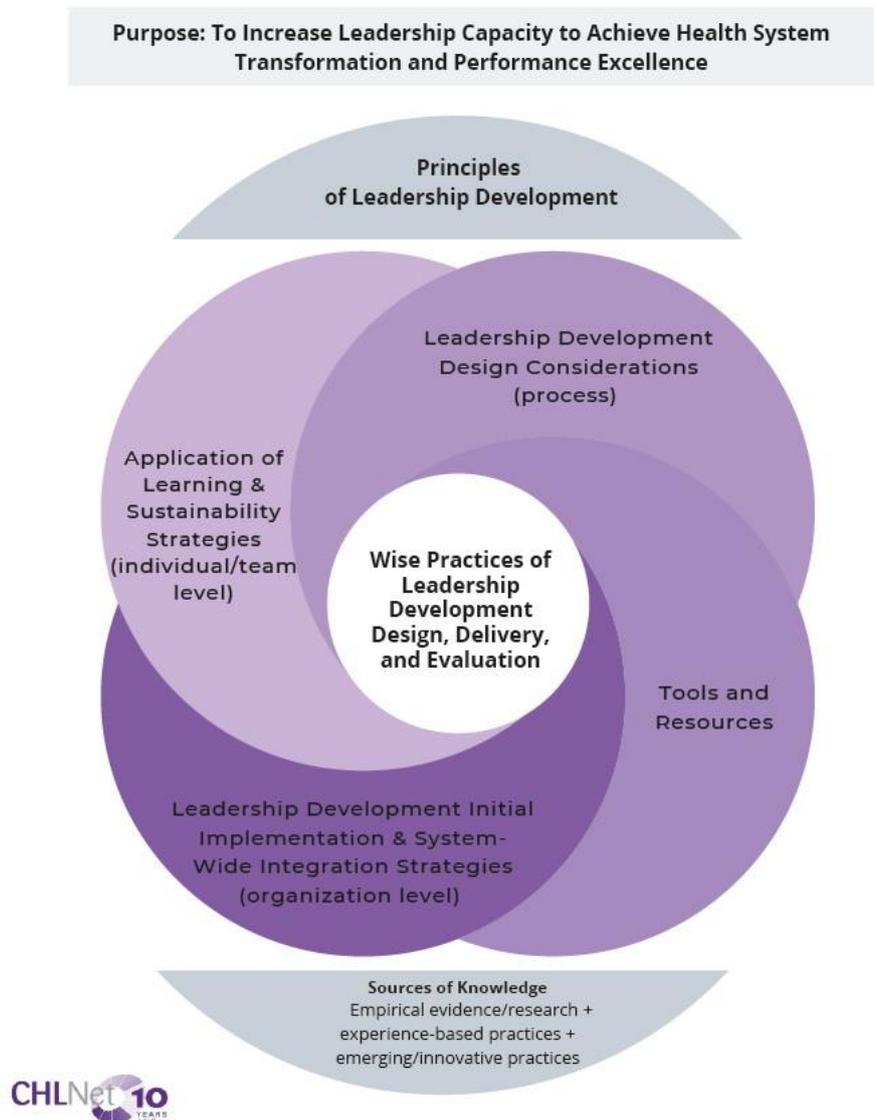
A first draft of the conceptual framework was created by the advisory group and, after input from the Steering Group on several iterations of the framework (Figure 1). The framework will be verified when the web-based architecture is finalized. The central purpose is stated at the top as the guide for the study and the sources of knowledge are placed at the

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<sup>2</sup> “Principles” refer to underlying, fundamental ideas that appear to apply widely (in this case, to leadership development), rather than the ethical foundation of a belief system or of a chain of reasoning.

bottom, since the latter formed the foundation of the evidence gathering. The wise practices of evidence-informed leadership development design, delivery, and evaluation – key sub-topics - are in the centre, since they are the basis for the recommendations for practice and the outputs. Supporting these core findings are approaches, strategies, and resources that can contribute to maximizing the outcomes of programs. These resources also include the toolkit, which is the main output of the study. Finally, placed above these cores and supporting sub-topics are the overarching principles of leadership development that were derived from an analysis of all data collected and that appear to apply to each component.

**Figure 1.**  
**Wise Practices Conceptual Framework**



## Data Collection

To investigate the sub-topics depicted in the conceptual framework and answer the research questions, several steps were taken to gather and triangulate data in a blended approach.

The first step was to conduct two separate reviews of the academic literature: the first was a systematic review on leadership development and the second was a scoping review on the application of learning, each building on academic publication manuscripts<sup>9</sup>.

The second step was designing an interview guide that could be used for key informant interviews with Subject Matter Expert's to add additional insights on the sub-topics. This was prepared by the lead researcher, shared with the Steering Group, and revised until consensus was reached. The interview questions focused on the most effective ways to:

- ✚ develop health leaders,
- ✚ build health leadership capacity in an organization,
- ✚ differentiate approaches to leadership development based on specific features of the participants groups (such as level of seniority),
- ✚ develop distributed (or shared) leadership in an organization,
- ✚ maximize the application of leadership learning to the workplace setting,
- ✚ integrate leadership and leadership development across the organization, and
- ✚ measure the impact of leadership development and assess whether the desired outcomes were achieved.

For the complete interview guide, see Appendix 2. The lead researcher conducted key informant interviews with 12 international Subject Matter Experts (SME's) who were selected by purposive, expert sampling based on their expertise as health leadership practitioners, administrators, or academics. The third step was creating an online survey (Appendix 3), which included identical questions to the study's interview guide for consistency. The survey was circulated to a separate group of SME's (n = 16) and nine responses were received.

### Sample (Subject Matter Experts (SME's))

For a complete list of the Subject Matter Experts (SME's) involved in offering data to this study, see Appendix 4. Interviewees and survey respondents were all given the option to provide their responses anonymously.

## Data Analysis

The data were analyzed in the following steps:

- 1) Findings from the literature reviews that were empirically linked to improved outcomes formed the basis of the findings listed below, which were coded selectively according to the sub-topics described in the conceptual framework.
- 2) Responses from the interviews and surveys were analyzed using six steps of thematic analysis<sup>10</sup> according to the same sub-topics (“latent themes” through selective coding).
- 3) These data were then triangulated with the key findings from the literature reviews to provide a more comprehensive understanding of the sub-topics and to test their validity through the convergence of information from different sources.<sup>11</sup> This involved analyzing the extent to which there was synchronicity among the data sources and noting disparities, as well as single outlying points of interest (“manifest themes”). This was also an opportunity to assess whether there is a research/practice divide.
- 4) The set of principles of leadership that is presented in the discussion below derives from a set included in an academic manuscript<sup>12</sup>. Data collected from this study were then analyzed through an iterative validation process that considered whether the original set should be modified in light of new evidence. The revised version was discussed with the Steering Group until consensus was reached.

## Findings

### Response rates and respondents

Sixteen Subject Matter Experts (SME’s) were invited to have a phone interview and 12 agreed (which resulted in a response rate of 75%). The online survey was sent to 16 separate SME’s and nine responded (with a response rate of 56%).

The **structure** of the findings that follow mirror the explanation of the conceptual framework. The wise practices are at the heart of this study and they are described in order of design, delivery, and evaluation. Supporting the wise practices and mechanisms for putting them into practice are application of learning and sustainability strategies at the

individual and team level, as well as approaches to implementing leadership development initially in an organization and system-wide integration. In the discussion section, the principles of leadership development are presented as overarching predictors of effective leadership development. Finally, in terms of next steps, CHLNet is creating and gathering tools and resources in a toolkit, including a decision tree to guide the choices in the design process.

## **Wise Practices of Leadership Development**

The wise practices are presented below in terms of design, delivery, evaluation, application of learning and sustainability strategies, and leadership implementation and integration strategies.

### **Design summary**

There are many considerations when designing or refining leadership development programs that are reliably linked to improved outcomes. These include:

#### *Pre-planning and addressing the context*

- ✚ Aligning programs with the organization's values, vision, Strategic Plan, and context
- ✚ Using a leadership capability framework as a common language, such as LEADS
- ✚ Involving stakeholders in a needs, gaps, and opportunities analysis to inform the program goals and to earn their support

#### *Design process*

- ✚ Selecting desired outcomes that are aligned with the organizational strategy and context
- ✚ Outlining how each program integrates with other interventions and with HR/OD practices
- ✚ Selecting the participants intentionally to best meets the needs of the organization
- ✚ Selecting the content, structure, faculty, and composition of programs using an outcomes-based design
- ✚ Selecting the developmental activities based on their intended impact on outcomes
- ✚ Providing a blended approach that involves formal learning, experiential components, feedback, reflection, and exposure to peers and mentors, akin to the 70-20-10 model

## *Evaluation and accountability*

- ✚ Devising an evaluation framework for the program, its individual components, and the participants
- ✚ Ensuring that each participant has formal post-program goals, a Personal Development Plan (PDP) or Leadership Development Plan (LDP), an Accountability Agreement (AA), and further opportunities.

## **Design details**

### *Pre-planning and addressing the context*

The first design consideration is aligning programs with the organization's values, vision, Strategic Plan, and context, which can enhance their perceived importance and relevance<sup>13</sup>. **Context** in this sense refers to internal and external circumstances affecting the organization and its people. This involves a range of possibilities, from high recent turnover, a merger with another or other organizations, or external factors such as a pandemic. Demonstrating to senior leaders that there is alignment can also result in them providing more resources and support than if they consider leadership development to be extraneous to the vision, Strategic Plan, and context<sup>14</sup>. This is essential to maximizing the outcomes of leadership development, since the most commonly reported cause of programs underperforming or failing is an organizational culture that is adverse to change<sup>15</sup>. Similarly, the Bench 2 study revealed that only a quarter of respondents rated their organizational cultures as being highly supportive of innovation.

Second, program outcomes can be enhanced when they involve a leadership capability framework, which outlines the key capabilities, competencies, or skills required to lead effectively. Capability frameworks provide a common language that can facilitate leadership development and are most effective when they are tailored to different levels of seniority<sup>16</sup>, such as the LEADS in a Caring Environment framework. The LEADS framework includes level-specific behaviours for each of the 20 capabilities at four levels: frontline/point of service, middle, senior, and executive<sup>17</sup>. The Bench 2 study revealed that 86% of respondents reported that their organizations use a capability framework, most of which are using LEADS.

Third, to inform the program goals and to generate organizational engagement and support, it is beneficial to gather input from the relevant stakeholders, including by

conducting a needs, gaps, and opportunities analysis<sup>3</sup>, which can enhance outcomes<sup>18</sup>. This is the process of identifying the personnel, knowledge, skills, or capabilities required at the individual, team, and organizational levels to achieve desired outcomes, to increase leadership capacity, and/or to maximize opportunities to improve, innovate, or expand<sup>19</sup>. This analysis is intended to ensure that leadership development is focusing on the outcomes, goals, personnel, and content that can best serve the organization in its current state and in the future<sup>20</sup>, which can increase its relevance, utility, and effectiveness<sup>21</sup>. Stakeholders whose input can be solicited include senior leaders<sup>22</sup>, human resources and organizational development professionals, and those anticipated to be directly affected by leadership development<sup>23</sup>, such as patients and families. Involving potential program participants themselves in this process can increase their motivation to learn and their ownership of their own development<sup>24</sup>. This is particularly important in light of the Bench 2 results that staff, physician, nurse engagement ratings were low. Needs, gaps, and opportunities analyses are typically done through a combination of surveys, semi-structured interviews, focus groups, and other forms of data collection, as well as building on pre-existing data, such as previous engagement surveys.

In addition to improving the quality of the program, involving stakeholders in this process can earn their engagement and support, which involves them actively encouraging and supporting faculty and participants and allocating the requisite monetary, technological, and personnel resources to enable the successful achievement of desired outcomes<sup>25</sup>. This support ideally comes from senior leaders<sup>26</sup>, participants' direct supervisors<sup>27</sup>, peers<sup>28</sup>, and everyone in the organization as part of a culture that encourages and supports innovation. **Innovation** in this sense refers not only to new ideas of programs and services, but also the freedom to adapt one's approach to meet organizational priorities. Senior leaders can also demonstrate their support by participating in programs themselves and role modeling leadership behaviours<sup>29</sup>. Providing protected time for leadership development, funding the costs of courses, and offering stipends are further examples of organizational support<sup>30</sup>. Unfortunately, the Bench 2 study indicated that protected time had purportedly declined by 39% in the past five years.

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<sup>3</sup> **Needs** can relate to capabilities that are lacking in certain individuals or across the organization, those required for specific positions or roles, those intended to develop key talent, or those deemed important for organizational improvement, innovation, or expansion (Edmonstone, 2013; McCauley, 2008). **Gaps** relate to a disparity between the skills, capabilities, experience, or capacity of current personnel and those required to achieve the organizational vision and Strategic Plan. **Opportunities** in this sense refers to potential improvements, innovations, or expansions within the current capacity of the organization to achieve.

## *Design process*

A fourth consideration is selecting explicit goals of leadership development that are aligned with the organizational strategy and context, which can specify the purpose of leadership development<sup>31</sup> and should be linked to desired outcomes<sup>32</sup>. It is also beneficial if it is clear how different development programs integrate with each other and are reinforced by human resources and organizational development practices, rather than seeming in isolation. It is important that leadership development goals extend beyond the individual participants, which, although rarely done, include consideration of outcomes at the team, organizational, benefit to patients and families, economic, environmental, and benefit to community levels (Appendix 5). These deserve attention, particularly at a time of tightening budgets, increasing costs, worrying climate change, and increasing collaboration between health and community organizations. It is important that people are a central focus of leadership development goals; that is, considering how programs can improve the lives of staff, community members, patients, and families.

It is beneficial if the goals of leadership development are tailored specifically to the participants.<sup>33</sup> Enabling participants to select their own goals and desired outcomes can increase their motivation to develop, the perceived relevance of leadership development, and the application of learning<sup>34</sup>. Additionally, when participants' supervisors contribute to selecting the goals and desired outcomes, the supervisors are more likely to identify those that can reasonably be addressed through leadership development and to provide the resources and support to facilitate their successful achievement<sup>35</sup>.

The fifth design consideration is selecting the participants for leadership development, which can be done strategically to serve organizational purposes<sup>36</sup>. This can include preparing individuals for formal positions, succession planning, facilitating system-wide change, developing high-potential employees<sup>4</sup> as part of the talent management strategy<sup>37</sup>, or increasing the representation of expertise and diversity among leaders. Bench 2 revealed that there is expected to be considerable turnover among senior and mid-level leaders in the next five years, which provides a succession planning opportunity to fill those roles with competent, well-prepared leaders. Surprisingly, although 80% of Bench 2 respondents

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<sup>4</sup> High-potential employees are those considered likely to succeed in advanced roles based on past accomplishments (Kesler, 2002), professional expertise, and proven leadership capabilities (Goodall & Baker, 2015).

reported being in a positional leadership role, half stated that they had never undertaken any formal leadership development.

A related design consideration is having mixed or designation-specific participant groups, such as by level of leadership or profession. Many SME's in this study favoured both kinds, while adding that their preference would depend on the context and goals of the program. Executive leaders and physicians were mentioned often by SME's as benefitting from specific programs or aspects of programs, since this format can provide a psychologically safe space in which to reflect and discuss with others who have similar responsibilities. SME's indicated that learning preferences among professionals may commonly differ (i.e. some suggested that physicians prefer to learn differently from other health professionals), as may the focus of participants' roles (e.g. strategic or clinical) and the capabilities required according to professions, roles, and levels of leadership. Conversely, there are many proponents of mixed programs, since they can promote enterprise thinking, develop skills in collaborating across professions, and align behaviours among colleagues who work in interdisciplinary teams. They are also reported to cross boundaries, challenge silos and siloed-thinking, foster cohesion, facilitate networks developing, and augment trust among participants. Most of the leadership programs reported in Bench 2 were interdisciplinary and the portion had doubled since 2014. Given the variegated perspectives on the matter, customization appears to be important according to the culture and needs of the organization and participants.

The sixth design step is selecting the content, structure, faculty, and composition using an outcomes-based design. An outcomes-based model<sup>38</sup> appears to be the optimal design for leadership development in terms of individual and system-wide programs, since it makes explicit the connection between the goals and desired outcomes, as well as all other aspects of the design, delivery, and evaluation<sup>39</sup>. It is beneficial if the selection of these latter three aspects is informed by empirical evidence<sup>40</sup> and wise practices and is based on the intended efficacy of each design component in facilitating the achievement of the goals and outcomes<sup>41</sup>. These measures can increase application and outcomes considerably<sup>42</sup>.

It is optimal if the *curricular content* of leadership development derives principally from the knowledge, skills, and behaviours identified in the needs, gaps, and opportunities analysis, and is directed explicitly to the program goals and desired outcomes, which ensures that the perceived relevance and utility are high<sup>43</sup>. Though sometimes considered separate from leadership capabilities, many positional leaders also require business acumen (e.g. the ability to interpret a budget sheet), which should also be considered when selecting the content of programs.

The next step concerns the *location(s)* of programs: in-house, external, online, or mixed. There are advocates for each of the four; however, one study that directly compared in-house to external programs found no subjective difference between their outcomes<sup>44</sup>, while others report that the outcomes of in-house interventions are greater than those of external programs and that the former can result in a greater ROI<sup>45</sup>. Similarly, a recent systematic literature review reported being unable to find any evidence, even in grey literature, of the effectiveness of eLearning<sup>5</sup> in health management and leadership capacity building<sup>46</sup>. This absence of empirical evidence is likely attributable to the nascent nature of the field of study. The COVID-19 pandemic has forced nearly everyone to consider how operations that were normally conducted in person can be done virtually. This will likely increase the level of online interactivity after the pandemic compared to before, thus, eLearning is even more worthy of consideration now.

In-house interventions can involve a development environment that is similar to participants' actual workplace in terms of the physical space, equipment, and culture, which can result in increased perceived relevance<sup>47</sup>. In-house interventions also tend to be less costly<sup>48</sup> and generally involve internal faculty, the benefits of which will be described subsequently. However, in-house programs can become insular and can deprive participants of a sense of the broader, socio-political context and different perspectives<sup>49</sup>. Conversely, external programs can expose participants to new faculty, professional facilitators, colleagues from other communities, organizations, professions, and industries, as well as novel ideas<sup>50</sup>. Off-site interventions can also free participants from work-related interruptions, enabling them to give their full attention to the program<sup>51</sup>. However, external programs may disproportionately rely on standardized, "off the shelf" program models, rather than customized content or interventions<sup>52</sup>, which can detract from the perceived relevance and utility.

Online programs can engage geographically dispersed participants, often at a far lower cost and without travel time<sup>53</sup>. They can also provide increased convenience through self-paced and asynchronous learning (such as through pre-recorded and self-directed materials)<sup>54</sup>, current information, including information that may not be available in-house, engaging multimedia, such videos, podcasts, and gamification, and important opportunities for collaboration through online forums, communities for practice, wikis, and group video

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<sup>5</sup>**eLearning** is defined as the use of digital technology for education and development (Car et al. 2018)

chats<sup>55</sup>. Finally, the potential for virtual reality and related simulations to play a larger role in leadership development in the future is high<sup>56</sup>. Critics of eLearning propose that online programs can never adequately replace face-to-face interactions<sup>57</sup>. Some, including experienced leaders, much prefer in-person interactions, some learners have poor digital literacy and become frustrated with technological imperfections, unreliable internet connections or the lack of necessary equipment can compromise the effectiveness of eLearning, and the development and maintenance of some eLearning resources can be prohibitively expensive<sup>58</sup>.

In terms of the *length* of leadership programs, Lacerenza et al. (2017) suggest that longer programs produce superior outcomes at the individual and organizational levels<sup>59</sup>. The authors argue that this is perhaps because cognitive, behavioural, and organizational changes take time<sup>60</sup>. Another likely explanation is that longer programs can include the implementation of action learning projects,<sup>6</sup> for which application is implicitly part of the design. The effect sizes for shorter programs are reported to be smaller<sup>61</sup>; however, short interventions can be effective for training task-centric, directive skills<sup>62</sup>.

In terms of *faculty*, there does not appear to be a consistent relationship between outcomes and the choice of internal, external, or mixed (internal and external) faculty<sup>63</sup>. Internal faculty can demonstrate their commitment to development<sup>64</sup> and can also enhance the perceived relevance of interventions to the organizational context<sup>65</sup>, since they have first-hand knowledge and experience of the workplace dynamics, in a way that external facilitators cannot<sup>66</sup>. Conversely, external faculty can offer new perspectives, which can avoid the danger of insular thinking<sup>67</sup>. External faculty tend to be more costly than internal, the latter of whom often give their time without charge. Mixed faculty can draw on the strengths of both internal and external.

A further step in the design of leadership development is selecting *developmental activities* according to their intended impact on desired outcomes and offering a variety. Selecting developmental activities intentionally according to their impact on desired outcomes and their intended connection to application and outcomes can increase their perceived relevance and effectiveness<sup>68</sup>. One strategy is to embed the application of new

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<sup>6</sup> **Action learning** projects are leadership or change initiatives that program participants implement at work as part of a development initiative to operationalize their learning. The preeminent advantage of action learning is the experience of direct application, which provides opportunities for constructive feedback, experimenting with different approaches, and the demonstration of the impact of programs.

knowledge, skills, and behaviours to the workplace setting into the program<sup>69</sup> through experiential components, which was reinforced by many SME's. Practice in applying new learning can enable participants to develop their skills, including problem-solving, to experiment with different approaches, to identify their strengths and weaknesses, and to operationalize their learning, all with support of the faculty<sup>70</sup>. Practice experiences are also enhanced when they are as similar to the workplace environment as possible<sup>71</sup> and involve real-time challenges or opportunities for innovation<sup>72</sup>. Coaching and mentoring are helpful support measures, particularly for longer programs<sup>73</sup>. Incorporating networking opportunities throughout the program is another consideration. Networking with colleagues and discussing leadership development goals, content, and progress can contribute to the application of learning and outcomes<sup>74</sup>, as well as opportunities for collaborations with colleagues in other parts of the organization<sup>75</sup>. SME's also mentioned the importance of providing participants with formal feedback, including from peers, and developing their self-reflection skills<sup>76</sup>. Finally, to accommodate different learning preferences and to maximise the impact of leadership development, integrating a variety of developmental activities is important<sup>77</sup>. Many SME's referenced the 70-20-10 model, which suggests that 70% of learning should take place on the job, 20% through relationships, such as mentors, and 10% through formal programs. In many cases, a blended model of formal and informal activities is preferred. Finally, a definite consideration for how eLearning options can substitute for or complement in-person components should be given.

### *Evaluation and accountability*

The next stage of program design is devising an evaluation framework. This process is described in detail below.

The final stage of program design is ensuring that each participant has formal post-program goals, a Personal Development Plan (PDP)<sup>7</sup> or Leadership Development Plan (LDP)<sup>8</sup>, an Accountability Agreement (AA)<sup>9</sup>, and further development opportunities<sup>78</sup>. Goal

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<sup>7</sup> A Personal Development Plan (PDP) is a formal agreement between an organization and an individual that clearly outlines professional goals and next steps, including performance targets, capabilities, and behaviours to be demonstrated, along with requisite experiences.

<sup>8</sup> A Leadership Development Plan (LDP) is identical to a PDP, but with more of a leadership focus and it includes a specific approach to the development of others

<sup>9</sup> An Accountability Agreement (AA) is often attached to a PDP or LDP and it is a contract between a participant and her/their/his supervisor and/or peers regarding promised next steps and measurables.

setting and feedback systems following leadership development can lead to increased application and outcomes<sup>79</sup>, as well as to the avoidance of relapse<sup>80</sup>. Integrating program evaluations with performance appraisals and LDP's extends leadership development beyond individual interventions and demonstrates alignment with career pathways and organizational priorities.

## **Program delivery**

There are four key factors related to the optimum delivery of leadership development programs: explaining the role and relevance of each session, addressing the characteristics of adult learners, embedding activities in an experiential learning cycle; and providing a psychologically safe space in which participants can experiment, commit errors, and receive follow-up support.

Communicating clear and explicit connections among the goals, content, program activities, and outcome metrics of leadership development increases the application of learning and outcomes<sup>81</sup>. This can be done as part of a formal communications strategy, as well as by program faculty, both of which can enhance the perceived relevance of each component of leadership development and can demonstrate that leadership development is valued, supported, and that application and outcomes are expected<sup>82</sup>. Similarly, when participants communicate their own goals to colleagues, it can function as a social contract and increase the participants' commitment to achieving their goals<sup>83</sup>. Ongoing goal setting was rated as the most effective leadership development activity in the Bench 2 study.

Program delivery is further enhanced when the characteristics of adult learners are addressed. These include adult learners tending to be:

- ✚ self-directed,
- ✚ experienced and knowledgeable and consequently, they want to feel that their input is respected as a valuable educational resource to share with fellow learners during programs. They also prefer if new learning is presented as building on their existing knowledge,
- ✚ relevance- and practical-oriented; they prefer to understand how learning relates to their work and how they can apply it, and
- ✚ goal-oriented and prefer when program goals are explicit<sup>84</sup>.

Some effective approaches to engage adult learners are through discussions, reflective exercises, case study analysis, team learning, and problem- or question-based learning<sup>85</sup>.

Finally, program delivery is maximised when core components are embedded in experiential learning cycles<sup>86</sup>. An experiential learning cycle is a sequential process with an activity in the centre, framed before and after by strategies to reinforce and optimize learners' development. The iterative sequence is: goal setting, the activity or experience, evaluation and feedback, discussion, reflection, revision of goals, and support.

To sharpen focus and increase participants' motivation and commitment, this cycle starts with goal setting for each developmental activity, in relation to the goals of the whole program<sup>87</sup>. The next step is the activity or experience, such as a workshop, a simulation, or an action learning project. After and, when appropriate, *during* an activity, evaluations are conducted of participants' performance and feedback is given<sup>88</sup>. The evaluation process can begin with participants' self-assessments, followed by the feedback of faculty and peers, which can reveal the congruence of participants' perceptions with those of others, enhancing participants' self-awareness<sup>89</sup>. This was a key point emphasized by many SME's: developing one's ability to accurately self-assess is a key skill for leaders<sup>90</sup>. While evaluation after each activity may seem burdensome, and it should not be excessive<sup>91</sup>, the effectiveness of experiences with no feedback appears to be comparatively reduced<sup>92</sup>. Interim feedback has also been shown to decrease participants' stress associated with challenging assignments, as well as increasing the likelihood that outcomes will be achieved successfully<sup>93</sup>.

After the evaluation and feedback, debriefing with peers and/or facilitators allows participants to ask questions, to identify skills or capabilities to further develop, and to recognize which strategies appear to be working or not<sup>94</sup>. Feedback at each stage also enables participants to propose alternate approaches, in dialogue with peers and experts, to improve results before the program has concluded.

Finally, depending on the nature of the activity, participants should be given time to reflect on their experience, feedback, and learning, as well as the relevance of them the work content<sup>95</sup>. This exercise serves as an additional developmental tool<sup>96</sup> and the learning from these experiences can be augmented when they are debriefed with a coach or mentor.

Experiential learning cycles can be embedded in programs in a myriad of forms, with some steps being prioritized and others included informally or omitted; however, these decisions should be guided by the anticipated utility of each component in maximizing the impact of developmental activities.

Creating a psychologically safe space in which participants can experiment, commit errors, and receive follow-up support enables them to develop their knowledge, skills, adaptability, and resilience, both emotionally and in terms of their capabilities<sup>97</sup>.

## Evaluation and accountability

An evaluation framework and accountability are essential to maximizing the impact of leadership development and to the achievement of desired outcomes<sup>98</sup>. And yet, evaluation of programs is rarely done, particularly beyond the satisfaction of participants following an intervention<sup>99</sup>, a situation which was highlighted by Bench 2. Satisfaction surveys provide little to no indication that learning has been applied to, and sustained in, the workplace, particularly beyond the individual level of impact<sup>100</sup>.

### *The functions of evaluation*

Formal evaluation frameworks provide precise focus to leadership development and including them also signals that stakeholders value the endeavour and expect that application and positive outcomes will result<sup>101</sup>.

Evaluation serves four additional functions. It can:

- ✚ Contribute to optimizing the experience (otherwise called quality control),
- ✚ Establish benchmark data to measure relative change,
- ✚ Enhance the process of development, and consequently, outcomes, and
- ✚ Provide evidence that outcomes have been achieved, often referred to as the return on investment (ROI).

### *Why to evaluate: from SME's*

Subject Matter Experts were asked how measuring the impact of programs influences the design of future programs. Many described the pressure on health organizations to justify the investment, which evaluation can provide, and they also suggested that measuring and reporting on impact can promote re-investment, increased investment, and the refinement of programs based on feedback. SME's also indicated that some aspects of the impact may not be realized immediately and may take time to develop; and thus, leadership development should not be considered a “quick fix”.

### *What to evaluate (generally)*

It is important that there are three focuses of evaluation. The first is on *outcomes* of the program at various levels (e.g. individual, organizational etc. (Appendix 5)). These include effects of the program that were not anticipated at outset (and thus were not included in the evaluation framework), which participants can suggest through free text responses in surveys

or interviews. A second focus of evaluation is on participants' *satisfaction* with the logistical details of the program (e.g. time, location), as well as with the program overall and its various components (i.e. program goals, content, faculty, and development activities), *as measured* by how each component was thought to contribute to improved outcomes. In a related way, the third focus of evaluation should be on participants' suggestions of *new* or *alternate* program components that could more effectively achieve program goals and desired outcomes.

### *What to evaluate (specifically): types and levels of outcomes*

Outcomes of leadership development can be categorized according to a modified version of the model by Kirkpatrick (2006) (see Appendix 5). These range from participant satisfaction (Level 1), to individual outcomes (attitude, knowledge, skills, behaviours, Levels 2 and 3), to those at the organizational, economic, environmental, benefit to patients, and benefit to communities levels (Levels 4 – 8)<sup>102</sup>. As suggested earlier, it is important to take all levels of outcomes into consideration, even though not all can be addressed in all programs.

Within many outcome levels, there are important distinctions between subjective data (perceptions) and objective data (external ratings, statistics, or factual verifiable results). This is not to discount the value of participants' perceptions; they are useful for optimizing the experience (quality control) purposes (i.e. which aspects of the program did participants find beneficial), so that providers can refine programs and improve their effectiveness. Perceptions also provide benchmarking data that can be compared to the ratings of others, which can assess the comparative accuracy for the purpose of increasing participants' self-awareness. The final two benefits of self-reports are to reveal unanticipated outcomes (which can be offered through free text responses) and to measure outcomes that are difficult to assess objectively, such as feeling more engaged or an increased organizational sense of shared purpose.

With the exception of these examples, it is important to strive to collect objective data in evaluation frameworks, since including them can significantly enhance outcomes and deepen the credibility of reports of the program impact.

### *When to evaluate*

There are four key time points at which it is important to evaluate<sup>103</sup>:

- ✚ At *baseline* (or before the program begins), which refers to self-ratings and objective performance data (individual, team/department, and organization),

- ✚ periodically *during* programs for the purpose of optimizing the experience, gauging progress (or lack thereof) toward the desired outcomes, which allows an opportunity to extend or to re-evaluate goals, adjust strategies, and provide further resources when necessary,
- ✚ at the *end* of the program (i.e. on the last day) for the purpose of optimizing the experience in successive programs and to assess the initial impact of programs, and
- ✚ *six to nine months following* the program for the purpose of optimizing the experience in successive programs, since it may take time for participants to appreciate how program components contribute to outcomes. It is also possible that some components, though enjoyable, do not end up impacting on outcomes as initially anticipated. Similarly, evaluating some time after programs can indicate the extent to which outcomes have been sustained and can gather feedback on unanticipated outcomes.

### *How to evaluate: a framework*

A helpful resource is the CHLNet Leadership Development Impact Toolkit, which is available through <http://chlnet.ca/ldi-toolkit>. Similarly, leadership development evaluation frameworks should align with the outcomes-based approach to program design described previously<sup>104</sup>.

The ideal first step in designing an evaluation framework is conducting a needs, gaps, and opportunities analysis with relevant stakeholders to inform the selection of the program goals. The second step is determining which desired outcomes at various levels would be most effective in demonstrating the successful achievement of the program goals. The third step is selecting the best approach to measure the desired outcomes. This involves choosing what data will be collected, at which time points it will take place, whose input will be solicited (e.g. participants, faculty, external raters), and how this information will be gathered (i.e. through surveys, interviews, statistics). It is beneficial if participants are involved in selecting their own goals and desired outcomes for the program. This process is enhanced when participants complete an Accountability Agreement (AA) and share it with their direct supervisor. The final pre-program evaluation consideration is how to gather feedback that can contribute to optimizing the experience, which can allow for adjustments to be made during the program to most effectively facilitate the achievement of the program goals and desired outcomes.

The evaluation framework should also highlight the ways in which data collected during the program will be communicated to various stakeholders. This involves sharing early successes and evidence of impact with others in the organization, as well as describing to participants and faculty the adjustments that are being made according to interim feedback. Prompting participants to self-assess and respond to the feedback of external raters during the program can also enhance participants' development, particularly when debriefed with a coach or mentor.

### *How to evaluate: tools*

Several SME's suggested that it can be a challenge to measure the impact of programs, though many referenced an approach similar to the outcomes-based model described above. One respondent described evaluation as being critically important to demonstrating that leadership development is not an expensive luxury, but rather, it should be considered an organizational imperative. Another common theme that emerged from the SME's is the importance of linking programs to outcomes without necessarily claiming that is a causal connection.

In terms of examples of outcomes to measure at the individual level, objective behaviour change, as indicated by 360 assessment results pre and post, was mentioned by many SME's. Others were improved performance reviews, being promoted or taking on leadership roles, receiving awards, and implementing action learning projects. One SME suggested that changes in participants minds and hearts are as important as behaviour changes, which suggests that less tangible outcomes should not be undervalued.

At the team level, outcomes to assess include creating a business plan, reports of increased collaboration, improved team performance, and team innovation initiatives the have been implemented.

At the organizational level, program outcomes offered by SME's include increased engagement and organizational culture scores, recruitment, and retention, as well as achieving organizational priorities and meeting business objectives. Others were forming new partnerships and improved patient experience scores, patient safety, and quality of care.

SME's stressed the need for a multi-pronged approach to evaluation involving qualitative and quantitative data, as well as free text responses, given that many outcomes are complex and that unanticipated effects of programs may surface.

## Putting the Wise Practices into Action and Enhancing Them

Incorporating the Wise Practices into the design of a program, as well as into a system-wide approach to leadership development, requires specific strategies to produce optimal results. They are divided below into those at the individual or team levels and those at the organizational or system level.

### Application of learning and sustainability strategies (individual and team level)

Research evidence suggests that even well-designed and expertly delivered leadership development programs do not automatically result in participants applying their learning to the workplace and achieving outcomes. Application of learning (or “training transfer”) strategies before and after interventions have been found in some cases to have a larger impact on program success than the activities implemented during programs themselves<sup>105</sup>.

A summary of specific application of learning strategies that are linked to improved outcomes is presented below and divided among those to include before, during, and after programs.

#### *Before programs*

- ✚ Create preparatory activities that address participants’ motivation to develop by involving them in selecting the goals, desired outcomes, content, and development activities of interventions, as well as linking development to their career goals
- ✚ Ensure that there is requisite organizational support, including potentially protected time for leadership development<sup>10</sup>
- ✚ Apply an outcomes-based design so that the links among the programs, their goals, desired outcomes, components, activities, evaluation, and individual and organizational priorities are explicit
- ✚ Select developmental activities based on their intended utility in achieving the desired outcomes. For example, some, such as action learning, involve direct application; whereas, others, such as interactive workshops, put the onus on participants to apply

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<sup>10</sup> One of the most common reasons that participants in leadership development interventions do not succeed in applying their learning to the workplace is a lack of time to fully participate in aspects of the program, to adequately reflect on the learning, and/or to implement the newly-acquired knowledge, skills, behaviours, or change initiatives<sup>10</sup>. This was reinforced by many SME’s, though Bench 2 reported that protected time for leadership development had declined 39% in the past five years.

their learning to work. The less direct the application is of development activities, the more the outcomes are enhanced by application of learning strategies

- ✚ Consider whether and how eLearning options should be included
- ✚ Consider providing designation-specific syndicate sessions for mixed programs where participants can interact in a psychologically safe space with others who face similar professional demands
- ✚ Evaluate programs and participants' performance and hold them accountable. Many SME's mentioned the importance of accountability and evidence suggests that outcomes improve when participants' supervisors are held accountable for the development of their direct reports as well
- ✚ Conduct a barriers<sup>11</sup> and enablers<sup>12</sup> assessment<sup>106</sup> and use the results to remove or circumvent obstacles to application and leverage enablers.

### *During programs*

- ✚ Communicate explicitly the purpose, goals, content, outcomes, and evaluation framework of leadership development so that there is a shared understanding and accountability among the providers, faculty, participants, and other stakeholders<sup>107</sup>
- ✚ Evaluate during the programs and modify program components, support, and/or participants' goals accordingly. This also provides an opportunity to celebrate success and support underperformance
- ✚ Provide mentoring and coaching for medium and longer length programs
- ✚ Embed activities in experiential learning cycles.

### *Following programs*

- ✚ Ensure that each participant has a Leadership Development Plan (LDP) and Accountability Agreement (AA) afterward that outline clear next steps, as well as ensuring that they are being provided with further development opportunities. It is beneficial to establish longitudinal follow-up assessments some time after the creation

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<sup>11</sup> **Barriers** can include conflicting organizational priorities, practices that restrict change, contradictory assessment structures, indifference on behalf of senior leadership, insufficient resources provided, or a lack of time to implement changes.

<sup>12</sup> **Enablers** are organizational strengths, priority initiatives, programs, structures, personnel, networks, or other resources that can be leveraged to maximise the outcomes of leadership development.

of LDP's and AA's to ensure that there is ongoing development, which is essential to effective leadership<sup>108</sup>.

While these strategies may seem peripheral to the essence of leadership development, their potential impact on outcomes has proven to be significant.

## **Leadership initial implementation and system-wide integration strategies (organizational level)**

This section is divided between strategies for initially introducing leadership development into an organization and strategies for integrating it across the system.

### *Introducing leadership development*

The following steps are helpful in introducing leadership development to an organization:

- ✚ Demonstrate that there is a need for leadership development by connecting program goals to the organizational strategy and context
- ✚ Ensure that the design of programs is customized, evidence-informed, and involves input from key stakeholders to enhance their relevance and promote shared ownership. In some cases, a partnered or co-design approach is best
- ✚ Decide which staff are best suited to include as program participants to achieve the goals
- ✚ Earn the engagement and support of senior leaders, as well as ensuring that adequate resources are provided to facilitate the achievement of program goals. The commitment of senior leaders was stressed consistently by SME's as a key enabler of success
- ✚ Identify barriers to the success of leadership development in achieving the desired outcomes, as well as enablers that can be leveraged
- ✚ Take steps to establish an organizational culture that is conducive to, and supportive of, change
- ✚ Decide whether to trial a pilot program<sup>109</sup> or launch a multi-pronged approach
- ✚ Evaluate the program(s) to enhance outcomes and demonstrate the impact
- ✚ Hold participants and their supervisors accountable for the desired outcomes
- ✚ Communicate early wins publicly and identify internal champions or ambassadors who can encourage others to lead

- ✚ Ensure that participants have a Leadership Development Plan (LDP) and Accountability Agreement (AA) with clearly defined next steps
- ✚ Consider organizational next steps in terms of further programming and HR/OD practices.

### *Integrating leadership development*

The following steps are helpful in integrating leadership and leadership development across an organization:

- ✚ Ensure that senior leaders value leadership development as an investment in people, as an organizational strategic priority, and as a key enabler of high performance at all levels. This investment needs to be visibly supported and modeled by senior leaders and the Board, which SME's reinforced should be accompanied by accountability for embedding it in the culture of the organization
- ✚ Introduce a leadership capability framework to establish a common language for development and other functions
- ✚ Demonstrate the role and relevance of each development program and activity in a planned, structured, coordinated approach that is directed toward the priorities outlined in the Strategic Plan. This approach can be depicted in an integration blueprint and involves a blended combination of formal programs and informal activities provided to different people for different purposes (e.g. onboarding of new staff)
- ✚ Reinforce development activities by HR/OD practices, such as including leadership capabilities and experience in hiring interview guides, onboarding, performance evaluations, and the development of career pathways to support ongoing development. Ideally, learning and leading should become an ongoing expectation of all staff, which SME's stressed should be synonymous with the culture, "fabric", or DNA of the organization
- ✚ Identify specific people to be officially held accountable for system-wide leadership development (versus by relying on "someone"), even though learning and effective leadership should ideally be part of everyone's role
- ✚ Develop a talent management continuum and succession planning strategy so that those who can best help the organization achieve its Strategic Plan are prioritized for formal development programs and promotion. This also needs to be accompanied by

an investment in programs and resources to develop people, which many SME's stressed need to be provided at all levels. One approach is to build accountability for continually learning and demonstrating new capabilities into staff role descriptions and performance reviews is effective

- ✚ Develop a communications strategy to inform staff of available programs and to celebrate examples of effective leadership and leaders
- ✚ Build internal capacity to develop leadership without relying on external providers. Developing others can be included in managers' job descriptions and performance reviews. Similarly, several SME's described the value of spreading a coaching mentality throughout the organization. These two points imply that leadership development should extend beyond the HR/OD department so that staff can help each other develop, such as through communities for practice. One approach is having regular leadership development forums so that staff can reflect on learning experiences and propose new strategies moving forward. Another idea is inviting staff to bring forward innovation initiatives and to request that others support them in implementing them
- ✚ Engage *non-positional leaders*, mainly by leveraging internal champions or ambassadors, so that leadership disperses widely across the organization<sup>110</sup>. This involves creating a culture that is not only conducive to experimentation and innovation, but expects it as part of a more distributed or shared understanding of leadership, rather than a rigidly hierarchical model<sup>111</sup>.

This requires a mindset and culture shift across the organization and the release of some control by positional leaders without lessening accountability for performance and outcomes. This shift can begin by defining shared leadership and demonstrating what it could look like in specific contexts in the organization, including through collaborative problem solving, sharing of information, and trust that enables people to make their own decisions. One SME described this as positional leaders “loosening their grip on the reins”. This can also include shared governance and shared accountability models, which may involve the creation of new guidelines and protocols.

Two key components of *distributing* leadership across an organization are trust and psychological safety, which were stressed consistently by SME's as being essential. In addition to success stories, distributing leadership involves showcasing how the suggestions or initiatives of people at all levels are respected and implemented. One example is when a CEO hosts open forums where questions can be posed by anyone. Trust can also be

generated through interdisciplinary programs and collaborative initiatives. These endeavours are most successful when they involve clearly defined accountabilities based on knowledge and experience and when staff are equipped with the necessary tools and resources. The goal is to develop a sense of shared ownership and interdependence so that staff are confident with leadership through informal authority and hold themselves accountable. This also requires self-awareness to know when to lead and when to support or trust others to lead

- ✚ Calculate the return on investment of leadership development and sharing the results with senior leaders and other stakeholders. This need not always involve financial outcomes; but it is important to demonstrate what value and impact leadership development has had
- ✚ Consider how patient and family voices can inform leadership development and initiatives as part of a people-centred focus
- ✚ Consider engaging in initiatives with community representatives given that health priorities are shared by many organizations and that collaboration is becoming more common.

## Discussion

The discussion is divided into three sections: the principles of leadership development, the implications for practice, and next steps.

### Principles of leadership development

A recent academic working paper, reinforced by the responses of this study's SME's, highlights nine key principles that appear to positively impact on the success of leadership interventions and leadership development generally (Table 1, pg. 31). These empirically informed principles represent important factors to consider in leadership development design, delivery, evaluation, and application to the workplace strategies to maximise results<sup>112</sup>. They are numbered only for quick referencing purposes, not in order of when they should be considered in the design process, nor in order of importance.

The principles follow from the sentence: *research suggests that leadership development is optimized when it is: needs- or opportunity-based, customized for the participants and their organization or community and their context, evidence-informed, experiential and application- and outcomes-oriented, motivational and relevant, symbiotic and involves shared ownership and support, evaluated and involves shared accountability,*

capacity-expanding through increased self-awareness, efficacy, adaptability, innovation, and collaboration skills, investment-oriented and integrated.

### *Needs- or opportunities-based*

Leadership development outcomes improve when it addresses specific needs of, or opportunities for, the participants or organizations<sup>113</sup>. Needs or opportunities can emerge through a formal needs, gaps, and opportunities analysis and they can also arise from 360 assessments results (individual and aggregate), performance reviews, turnover and the need to prepare for new roles, patient feedback, or innovation ideas from participants. Involving participants and other stakeholders in selecting the goals and desired outcomes of leadership development can increase the perceived relevance and utility, as well as senior leadership and other stakeholders' support, particularly when program goals are aligned with the organisation's overall strategy or Strategic Plan.

### *Customized for the participants and their organisation or community and their context*

The effectiveness, perceived relevance, and utility of leadership programs are enhanced when the content, delivery, and (faculty) personnel are customized for the participants and their organizational context<sup>114</sup>. This involves tailoring content and providing resources, examples, references, and experiences that are as identical to the context of the participants as possible<sup>115</sup>. Programs are also improved when they are designed and delivered with appreciation for the characteristics of the learners<sup>116</sup>. For example, adult learners have been understood as self-directed, who have a wealth of experience and knowledge, and learn best when they understand the relevance to their work<sup>117</sup>. Involving participants in selecting their own developmental goals and desired outcomes, respecting them as co-contributors to the development process, and demonstrating how learning relates to their existing knowledge, experience, and work is beneficial<sup>118</sup>. Customization can also refer to designation-specific syndicate sessions within mixed programs, such as those based on profession or level of seniority, which can augment the relevance of programmes. Finally, customization can involve adapting the design and delivery of programs according to the organizational context. This situation can be exposed by a needs, gaps, and opportunities analysis, or by an important internal or external contextual factor, such as a recent merger with another organisation.

### *Evidence-informed*

The effectiveness and credibility of leadership development are enhanced when the design is evidence-informed<sup>119</sup>, since programs designed without an evidence foundation can underperform<sup>120</sup>. Allowing for experimentation and innovative approaches is also important. Evidence to inform program design can be drawn from a combination of sources, such as empirical data from academic literature, theoretical models and frameworks, such as the outcomes-based model described above, principles of leadership development, best practice examples from practitioners and Subject Matter Experts (SME's), and successful pilot initiatives implemented locally or at other sites.

### *Experiential and application- and outcomes-oriented*

The outcomes of leadership development are improved significantly when participants have the chance to apply new knowledge, capabilities, skills, and behaviours to work or in an authentic simulation environment<sup>121</sup>. The ultimate goal of, and mark of success in, leadership development is achieving desired outcomes<sup>122</sup>. Ensuring that application is built into the design of programs enhances their relevance and utility, as well as improving outcomes. The wider the gap between developmental activities and application, often, the more limited their impact. Action learning or leadership impact projects are especially effective, since applying new learning to work is implicit in the activity<sup>123</sup>. Similarly, the outcomes-based model of leadership development design makes explicit the desired application, which is supported by evaluation and accountability. Finally, achieving desired outcomes demonstrates the value that leadership development can add and the return on investment.

### *Motivational and relevant*

Participants' motivation to develop is a key predictor of achieving outcomes<sup>124</sup>. This motivation involves an innate inclination and desire to continually improve<sup>125</sup>, and this is enhanced by participants believing in the value of development and of the relevance and utility to their work and career goals<sup>126</sup>. Motivation and relevance can augment when participants have input into the program desired outcomes, goals, content, and design<sup>127</sup>. This motivation can also increase when they feel supported by their supervisors and senior leadership<sup>128</sup>.

### *Symbiotic and involves shared ownership and support*

The outcomes of leadership development improve when relevant stakeholders understand how it is intended to benefit participants, colleagues, the organisation, and patients symbiotically<sup>129</sup>. When stakeholders are involved in a needs, gaps, and opportunities analysis, the design of programs, and the selection of goals, desired outcomes, participants, faculty, and assessments<sup>130</sup>. Organizational leaders and others are more likely to contribute to the application of learning and take ownership of achieving and supporting the desired outcomes if they have specific roles as facilitators, mentors, or other roles<sup>131</sup>. Finally, it is essential that shared ownership is accompanied by the support and encouragement of participants' direct supervisors and other colleagues, as well as by the supply of financial, technological, and other resources, such as protected time for participants to apply their learning<sup>132</sup>. Maximizing the impact of leadership development depends on this support<sup>133</sup>. Communicating successes to stakeholders to thank them for their contributions and to demonstrate the impact of leadership development can increase further support and funding.

### *Evaluated and involves shared accountability*

Leadership development interventions are rarely evaluated<sup>134</sup>, and it is often restricted to a superficial level<sup>135</sup>, as Bench 2 results confirm; however robust evaluation is crucial for maximizing desired outcomes<sup>136</sup>. Evaluation of both the programs and participant outcomes should ideally take place at baseline, during programs, at the conclusion of, and at least six to nine months following, interventions. It is beneficial to gather a combination of objective and subjective data at various levels, including beyond that of the individual<sup>137</sup>. Evaluation can serve to optimize the experience (quality control), as a benchmark of perceptions of participants' capabilities and performance data, as a signal of when goals should be extended or additional support are needed, and as a facilitator of the developmental process by encouraging participants to reflect on their progress and on how they can apply their learning to work<sup>138</sup>. Evaluation can augment the effectiveness and utility of programs over time; it can motivate participants to achieve their desired outcomes; and it can offer evidence of the return on investment<sup>139</sup>.

Along with evaluation, accountability on behalf of the providers, faculty, participants, and participants' supervisors is crucial for maximising outcomes<sup>140</sup>. Accountability indicates that the desired outcomes of leadership development are valued and expected. Accountability Agreements (AA's), along with Personal Development Plan's (PDP's) or

Leadership Development Plan's (LDP's), can be effective in enhancing outcomes. Expecting accountability requires the provision of requisite resources.

### *Investment-oriented and integrated*

Leadership development is maximized when it is seen as an organizational priority and investment in people that is designed to increase individual and organizational capacity<sup>141</sup>. From this perspective, leadership development extends beyond individual interventions for specific people to future considerations that widen to include those without formal leadership positions. Results are maximized when formal and informal leadership development opportunities are intentionally integrated and combined, along with a leadership capability framework, to achieve outcomes at various levels. This integration can be illustrated in a leadership integration blueprint, which portrays leadership and development as fundamental to achieving the organisation's mission, vision, and Strategic Plan, and as inseparably related to core HR/OD practices, such as recruitment, retention, performance appraisals, promotion criteria, talent management, succession planning, employees' Personal Development Plans (PDP's), Leadership Development Plans (LDP's), Accountability Agreements (AA's), and development pathways. This comprehensive approach can increase the support and resources that are provided, including when participants underperform. Having an investment orientation does not invalidate attempts to calculate the ROI of individual interventions, nor of prioritizing certain people at different times for development. This mindset emphasizes the key role that leadership development can play in achieving outcomes and in developing capacity across the organization. Consequently, the perceived relevance and importance of leadership development are increased, compared to isolated, one-off interventions. Viewing leadership development this way can contribute to the creation of a culture of innovation and leadership and can minimize the pressure to demonstrate short-term, quantifiable outcomes at the expense of capabilities that are more challenging to enumerate or of long-term increased capacity.

**Table 1**

**Principles of leadership development**

No.	Principles of leadership development
1	Needs- or opportunities-driven
2	Customised for the participants and their organisation or community and their context
3	Evidence-informed
4	Experiential and application- and outcomes-oriented
5	Motivational and relevant
6	Symbiotic and involves shared ownership and support
7	Capacity-expanding through increased self-awareness, efficacy, adaptability, innovation, and collaboration skills
8	Evaluated and involves shared accountability
9	Investment-oriented and integrated

**Implications for practice**

It is clear that leadership development is not a one-size fits all enterprise; customization based on the *context* is essential to maximizing its impact. Designing the most effective leadership development program possible depends on many factors, such as funding availability, its intended purpose, the feasible timeframe, available technology and resources, what other programs are currently being offered (if any), the characteristics and needs of the participants, the organizational context, and other factors. The circumstantial nature of leadership development is compounded by the many aspects of leadership development for which there is no conclusive empirical evidence to direct design choices. For many aspects, such as the location of programs (in-house, external, online, or mixed), there are advocates for different approaches; however, the experts who contributed to this study consistently responded that for these choices, “it depends”, which reinforces the centrality of context.

The absence of easy answers or quick fixes suggests that it is essential that the program design process is guided by what is known to be effective, which begins with applying the outcomes-based model. Within this process, ensuring that the principles of leadership development are addressed is essential to success. The choices of program components and integration strategies can be informed by the wise practices outlined in this report.

## *The CHLNet toolkit (tools, resources, and design considerations (process)) and its application*

The purpose of the Wise Practices study was to create a toolkit of evidence-based resources that could support those designing and refining health leadership programs. These resources come in four forms:

- 1) This research report of wise practices of leadership development
- 2) The toolkit, which includes a decision tree to guide providers through the process of designing the most effective customized program for their context
- 3) Additional resources collected from experts and partner organizations that are made available on the CHLNet website
- 4) Websites that, and key contacts whom, people can consult for further guidance on designing leadership programs.

### *ABC's of leadership development: critical success factors*

Given the pressure on those designing, delivering, and funding leadership development to justify their program choices as effective, yet economical, it is helpful to isolate critical success factors. Most of these can be incorporated at little or no cost. These are divided into those that appear to be widely applicable, as well as specific recommendations for executive and junior/mid-level leaders.

#### *Critical success factors*

- ✚ The natural start is **education**/new knowledge, skills or capabilities. This can be delivered through interactive workshops, lectures, or webinars etc. Internal faculty presenters or media available online can minimize costs (the former can also serve as a development opportunity for the presenters)
- ✚ Include **application** (to work) activities, such as action learning projects to develop a variety of outcomes (including organizational outcomes), and simulations with peer and expert feedback for more specific outcomes (such as increasing communication skills). Development activities divorced from programmed application are comparatively limited
- ✚ Consider how to best utilize **eLearning** options for education and information sharing
- ✚ Include **Leadership Development Plans** (LDP's) and **Accountability Agreements** (AA's). These should be devised in discussion with participants and their supervisors and should include specific desired outcomes and timeframes. Participants should

revise their LDP's and AA's at the end of a program, ideally in dialogue with a coach or faculty member. Introducing LDP's and AA's enhances outcomes and demonstrates that desired outcomes are expected

- ✚ **Evaluate** programs and performance and hold people *accountable*. As an extension of the previous point, although rarely done robustly, evaluation and accountability are essential to maximizing the outcomes of leadership development
- ✚ Include **mentoring** and **peer coaching**. Mentorship is most effective when each mentee has two mentors: a mentor who is a few years more advanced than participants (2 – 5 years) who remembers the challenges of the participant's role and a senior mentor (15 – 25 years) who can offer the wisdom of experience. Similarly, regular peer coaching sessions can contribute to increased achievement of outcomes and the creation and sustainment of healthy routines. It is beneficial to provide guidance to mentors, mentees, and peer coaches on expectations and effective strategies. With the possible exception of up-front training, both of these interventions are cost-free
- ✚ Ensure **formal feedback** is provided to participants and that they are encouraged to **reflect** on its relevance to their the LDP, enhancing their self-awareness. 360's can be highly effective. Feedback is crucial to development. Guided by the LDP, structured reflection is also helpful because it encourages participants to consider prospectively how their learning can be applied to their work, as well as prompting them to reflect retrospectively on their experiences of attempting to transfer their learning
- ✚ Provide **networking** opportunities to facilitate peer support, collaboration, and coalitions, to connect participants to experts, and to stimulate ideas for innovation
- ✚ Involve the **patient and family** voices in discussions concerning organizational needs and opportunities, which can inform the selection of desired outcomes
- ✚ **T Integrate** leadership development programs and interventions with other human resources and organizational development practices, such as performance evaluations and promotion criteria. This is **absolutely essential** to maximizing outcomes.

### *Executive leaders*

While the principles of leadership development appear to be widely applicable, executive (C-suite) leaders have specific needs for their roles and limited availability for development. For these reasons, a specialized set of recommendations is presented:

- ✚ **360's** followed by one-on-one *professional coaching*. Self-awareness, especially at the executive level, is crucial and a lack of it can have deleterious effects on organizations
- ✚ **Group coaching** with the Senior Leadership Team to problem-solve together and develop team dynamics
- ✚ **Micro-burst** specific information sessions on current topics, including the use of technology, and training sessions, such as media training or leading a pandemic training
- ✚ **eLearning** options that leaders can access at their convenience
- ✚ **Networking opportunities** with external counterparts in the same role at similar organizations, as well as key contacts outside the organization, such as government officials and potential and current donors

Also, involving them as *mentors* for senior leaders as part of succession planning and occasionally for mid-level and junior leaders can contribute to healthy culture promotion and to demonstrating the importance of development.

### *Junior and mid-level leaders*

Along with the set of critical factors listed above, there are additional components that should be considered for developing junior and mid-level leaders.

- ✚ Develop their *technical expertise*, which is influential in leadership effectiveness (such as an exceptional clinician who also has good leadership capabilities)
- ✚ Pay particular attention to **eLearning** options for younger leaders
- ✚ Develop *communication* and *teamwork* capabilities, particularly through action learning projects
- ✚ Expose them to *career pathway* opportunities through job shadowing and mentors
- ✚ Develop *business acumen* in those progressing to senior leadership roles
- ✚ Develop their *change leadership* and sustainability capabilities
- ✚ Provide *networking* opportunities with those in different departments so that they develop a better understanding of the system.

## *Conclusion*

CHLNet's mandate to provide better leadership and better health, together, involves conducting cutting-edge research to support health leaders across Canada. The 2019 CHLNet *Benchmarking 2* study showed a need for evidence-informed guidance and tools supporting wise practices of leadership development. This study investigated wise practices based on empirical evidence, the wisdom of practical experience and international Subject Matter Experts, and the potential for innovative approaches to developing leaders. The purpose was to produce an evidence-informed toolkit to support those striving to increase individual and organizational leadership capacity in their organizations and to achieve performance excellence and system transformation. Wise practices have been identified in this report addressing the design, delivery, evaluation, implementation, and system-wise integration of leadership development. CHLNet is also committed to assembling a toolkit of resources to equip leadership developers with what they need to produce optimal results.

## Appendix

### Appendix 1.

#### Glossary of terms

*An Accountability Agreement (AA)* is often attached to a PDP or LDP and it is a contract between a participant and her/their/his supervisor and/or peers regarding promised next steps and measurables.

*Action learning* projects are leadership or change initiatives that program participants implement at work as part of a development initiative to operationalize their learning.

*Application of learning* (or “training transfer”) *strategies* refer to approaches to addressing all the factors related to development programs (design, delivery, personnel, direct application strategies, and evaluation) and to the organization (its culture and support) that can impact directly on facilitating the application of learning to the workplace<sup>142</sup>.

*Developmental activities* refer to formal and/or informal experiences that are intended to facilitate increased leadership knowledge, capabilities, capacity, and efficacy<sup>143</sup>.

*eLearning* is defined as the use of digital technology for education and development<sup>144</sup>

*Leadership development* is the systematic process of providing programs, activities, and resources to enhance the leadership knowledge, capabilities, and capacity of individuals, teams, and organizations and to achieve desired outcomes<sup>145</sup>. These outcomes can range from improved individual level results to system transformation. The process of leadership development can be ongoing, rather than referring exclusively to individual interventions, and can involve formal and/or informal aspects.

*A Leadership Development Plan (LDP)* is identical to a PDP, but with more of a leadership focus and it includes a specific approach to the development of others

*A Personal Development Plan (PDP)* is a formal agreement between an organization and an individual that clearly outlines professional goals and next steps, including performance targets, capabilities, and behaviours to be demonstrated, along with requisite experiences.

## Appendix 2.

### Subject Matter Expert Interview Guide

CHLNet Wise Practices Project 2019 – Interview Guide

Time of the Interview:

Date:

Interviewer: Jaason Geerts

Interviewee:

Review of the Project

Thank you for agreeing to participate in the CHLNet Wise Practices Initiative! The purpose is to create an electronic inventory of evidenced-based, proven, and emerging leadership development practices and tools that can be accessed by organizations across Canada to build health leadership most efficiently and effectively. We have a Steering Group in place guiding this effort comprised of academics, experts, and decision-makers. Our intention is to have this data collated and analyzed by the end of 2019.

Should you wish, all information that you provide can be kept anonymous and neither you, nor your organization, will be named or described in any identifiable way. Do you wish to remain anonymous?

Yes \_\_\_\_\_ No \_\_\_\_\_

I am interested in recording this interview purely for the sake of ensuring that no details are missed. (If “yes” above, then): As above, this will not sacrifice the anonymity of how our findings are presented.

(If “no” above, then): If we would like to include any direct quotations, we will send them to you first before adding them to the report and none will be published without your consent.

Do you consent to having this recorded?

Yes \_\_\_\_\_ No \_\_\_\_\_

#### Leadership Development

- 1) In your experience, what are the most effective ways to develop health leaders' capabilities?
- 2) In your experience, what are the most effective ways to build health leadership capacity in an organization?

#### Differentiation According to Demographics

- 3) How do you differentiate approaches to leadership development based on specific features of the participants groups (such as level of seniority (e.g. senior, middle, emerging), role, profession (e.g. nurses, physicians), geography, and gender)?

#### Distributed Leaders

- 4) What do you think are the best ways to develop distributed (or shared) leadership in an organization?

#### Transfer of Learning

- 5) Which strategies have you found that help maximize the application of leadership learning to the workplace setting? For example, holding immediate supervisors accountable for the performance of those whom they manage who are undertaking leadership development improves the post-program outcomes.

#### Full Leadership Integration

- 6) What do you think are the most effective ways to **integrate** leadership and leadership development across the organization?

## Measuring the Impact of Leadership Development

- 7) In your experience, what are the most effective ways of measuring the impact of leadership development and assessing whether you achieved the desired outcomes? These can include tangible, quantitative results or qualitative indications. (Time-permitting add-on: How did measuring impact make a difference in what you tried to do or will do next time?)

## Final Thoughts

- 8) Finally, any last thoughts on how to develop leaders most effectively? (open-ended)

Lastly, we are also collecting resources to add to a toolkit of leadership development resources, such as curriculum documents or PowerPoints that describe individual program details or leadership development across organizations, HR/OD resources that include leadership (i.e. promotion criteria), or anything else that you would be comfortable sharing that we could add to the toolkit.

Would you be comfortable sharing some materials?

Yes \_\_\_\_\_ No \_\_\_\_\_

If so, my colleague Lynda Becker will follow up with you or your administrator to collect them. All materials will be referenced appropriately.

Thank you very much for your time and insights. We greatly appreciate it and will get back to you with the final report.

## Appendix 3.

### Subject Matter Expert Survey

#### CHLNet Wise Practices Project 2019 - Online Survey

Thank you for agreeing to participate in the CHLNet Wise Practices Initiative! The purpose is to create an electronic inventory of evidenced-based, proven, and emerging leadership development practices and tools that can be accessed by organizations across Canada to build health leadership most efficiently and effectively. We have a Steering Group in place guiding this effort comprised of academics, experts, and decision-makers. Our intention is to have this data collated and analyzed by the end of 2019.

This survey takes fewer than 10 minutes to complete. If you have any issues accessing the survey, please contact Lynda Becker (lbecker@chlnet.ca). Please note, once you begin the survey, you will not be able to save your responses and return to the survey at a later time.

Your input is invaluable and we appreciate your time and consideration. The findings of this study have the potential to be used to improve leadership in health care organizations across Canada. The results will be shared with you through a final report and other mobilization efforts, but all personal information will be kept strictly confidential if you so wish and only aggregate data will be used. If you have any questions pertaining to the survey itself or the report to be produced, please contact Kelly Grimes at kgrimes@chlnet.ca.

You have until Oct 4 to complete the survey.

Should you wish, all information that you provide can be kept anonymous and neither you, nor your organization, will be named or described in any identifiable way. Do you wish to remain anonymous?

Yes \_\_\_\_\_ No \_\_\_\_\_

(If “no” above, then): If we would like to include any direct quotations, we will send them to you first before adding them to the report and none will be published without your consent.

#### Leadership Development

- 9) In your experience, what are the most effective ways to develop health leaders’ capabilities?

In your experience, what are the most effective ways to build health leadership capacity in an organization?

### Differentiation According to Demographics

- 10) How do you differentiate approaches to leadership development based on specific features of the participants groups (such as level of seniority (e.g. senior, middle, emerging), role, profession (e.g. nurses, physicians), geography, gender, other differences)?

### Distributed Leaders

- 11) What do you think are the most effective ways to develop distributed (or shared) leadership in an organization?

### Application of Learning

- 12) Which strategies have you found that help maximize the **application of leadership learning** to the workplace setting? For example, holding immediate supervisors accountable for the performance of those whom they manage who are undertaking leadership development improves the post-program outcomes.

### Full Leadership Integration

- 13) What do you think are the most effective ways to **integrate** leadership and leadership development across the organization?

### Measuring the Impact of Leadership Development

- 14) In your experience, what are the most effective ways of **measuring the impact** of leadership development and assessing whether you achieved the desired outcomes? These can include tangible, quantitative results or qualitative indications.
- 15) How does measuring impact influence the design of future programs?

### Final Thoughts

- 16) Finally, any last thoughts on how to develop leaders most effectively?

Lastly, we are also collecting resources to add to a toolkit of leadership development resources, such as curriculum documents or PowerPoints that describe individual program details or leadership development across organizations, HR/OD resources that include leadership (i.e. promotion criteria), or anything else that you would be comfortable sharing that we could add to the toolkit.

Would you be willing to share some materials?

Yes \_\_\_\_\_ No \_\_\_\_\_

[If yes]: Please provide your name and email address: \_\_\_\_\_

Thank-you! Lynda Becker will follow up with you or your administrator to collect them. All materials will be referenced appropriately.

### Demographics

\*\* Once again, demographic information will only be presented in an aggregated manner.

#### Gender

Please describe your: gender

- Woman
- Man
- Non-binary/third gender
- Prefer not to say
- Prefer to self-describe (Free text):

#### Profession

Please describe your: profession (please tick all that apply)

- Academic
- Senior or executive leader
- Physician

Nurse

HR/OD professional

Other (please specify) (free text):

### Organization

Please describe your: organization

University

Independent leadership development or coaching provider

Academic Health Science Centre or Network

Community hospital

Community health centre

A province/territory-wide health care organization

A nation-wide health care organization

Public health unit

Other (please specify)

\* Please indicate the **location** of your organization

\* Please indicate the **size** of your organization

Roughly how many people work for your organization?

### Outro

Thank you very much for your time and insights. We greatly appreciate it and will get back to you with the final report.

## **Appendix 4.**

### **Subject Matter Expert Contributors**

*Interviews:* Gabrielle Cuff (Fraser Health), Dr. Isser Dubinsky (Institute of Health, Policy, Management, and Evaluation (IHPME)), Dr. Michael Gardam (Humber River Hospital, Schulich Executive Education Centre), Dr. Amanda Goodall (Cass Business School, City, University of London), Christina Krause (BC Patient Safety and Quality Control), Dr. Peter Lees and Kirsten Armit (Faculty of Medical Leadership and Management, UK), Dr. Martha Maznevski (Ivey Business School, Western University), Doug Miron (Holland Bloorview Children’s Rehabilitation Centre), Lynne Sinclair (Centre of Interprofessional Education, University of Toronto), David Sweeney (New South Wales Health Education and Training Institute, Australia), Dr. Johny Van Aerde (Canadian Society of Physician Leaders), and an anonymous respondent (Ontario).

*Online surveys:* Stevie Colvin (Alberta Health Services), Maryanne D’Alpino (Canadian Patient Safety Institute), Andrea Johnson (Nova Scotia Health Authority), Dr. Gillian Kernaghan (St. Joseph’s Health Care, London), Brenda Lammi (LEADS Canada), Dr. Oscar Lyons (University of Oxford), Ellen Melis (Unlimited Potential), Sandra Ramelli (Hamilton Health Services), Dr. Ingrid Richter (University of Ottawa), Judy Wyllie (Hôtel-Dieu Grace Healthcare).

## Appendix 5.

### Expansion of Kirkpatrick's model of leadership development outcomes (Kirkpatrick & Kirkpatrick, 2006)

Level	Details				
1	Participant satisfaction with the programme (Post-programme Evaluations (PPE's))				
Level	Details	Sub-level	Details	Sub-level	Details
2	Participants' development	2a	attitudes or perceptions	2b	knowledge or skills
3	Change in participants' behaviour	3a	subjective	3b	objective
4	Economic impact	4a	indirect	4b	direct
5	Environmental impact	5a	subjective	5b	objective
6	Organisational impact	6a	subjective	6b	objective
7	Benefit to clients	7a	subjective	7b	objective
8	Benefit to communities	8a	subjective	8b	objective

## References

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- <sup>1</sup> Geerts, J. M. (2020). Benchmarking 2: A study of leadership gaps and opportunities in healthcare organizations across Canada. Canadian Health Leadership Network (CHLNet).
- <sup>2</sup> Kellerman, B. (2012). *The end of leadership*. Harper Collins; Kellerman, B. (2018). *Professionalizing leadership*. Oxford University Press.
- <sup>3</sup> QuintilesIMS Institute. (2017). *Global Oncology Trends 2017* (pp. 1–47). QuintilesIMS Institute.
- <sup>4</sup> Geerts, J. M., Goodall, A. H., & Agius, S. (2020). Evidence-based leadership development for physicians: A systematic literature review. *Social Science & Medicine*, 246, 1–17. <https://doi.org/10.1016/j.socscimed.2019.112709>; Husebø, S. E., & Akerjordet, K. (2016). Quantitative systematic review of multi professional teamwork and leadership training to optimize patient outcomes in acute hospital settings. *Journal of Advanced Nursing*, 72(12), 2980–3000. <https://doi.org/10.1111/jan.13035>; Rosenman, E. D., Shandro, J. R., Ilgen, J. S., Harper, A. L., & Fernandez, R. (2014). Leadership training in health care action teams: A systematic review. *Academic Medicine*, 89(9), 1295–1306; Steinert, Y., Naismith, L., & Mann, K. (2012). Faculty development initiatives designed to promote leadership in medical education. A BEME systematic review: BEME guide no. 19. *The International Journal of Medical Technology*, 34(6), 483–503. <https://doi.org/doi:10.3109/0142159X.2012.680937>; Vilches, S., Fenwick, S., Harris, B., Lammi, B. & Racette, R. (2016). *Changing health organizations with the LEADS leadership framework: report of the 2014-2016 LEADS impact study*. Ottawa, Canada: Fenwick Leadership Explorations, the Canadian College of Health Leaders, & the Centre for Health Leadership and Research, Royal Roads University.
- <sup>5</sup> DeNisi, A. S., & Kluger, A. N. (2000). Feedback effectiveness: can 360-degree appraisals be improved? *The Academy of Management Executive*, 14(1), 129–139; Geerts, J. M. (2018). *Optimal leadership development for professionals* [Unpublished doctoral thesis]. University of Cambridge; Kwamie, A., Dijk, H. van, & Agyepong, I. A. (2014). Advancing the application of systems thinking in health: realist evaluation of the Leadership Development Program for district manager decision-making in Ghana. *Health Research Policy and Systems*, 12(29), 1–12; Malling, B., Mortensen, L., Bonderup, T., Scherpbier, A., & Ringsted, C. (2009). Combining a leadership course and multi-source feedback has no effect on leadership skills of leaders in postgraduate medical education. An intervention study with a control group. *BMC Medical Education*, 9(72), 1–7.
- <sup>6</sup> Gilpin-Jackson, Y., & Bushe, G. R. (2007). Leadership development training transfer: a case study of post-training determinants. *Journal of Management Development*, 26(10), 980–1004.
- <sup>7</sup> Geerts, J. M. (2018). *Optimal leadership development for professionals* [Unpublished doctoral thesis]. University of Cambridge.
- <sup>8</sup> Phillips, P. P., Phillips, J. J., & Ray, R. (2015). *Measuring the success of leadership development*. ATD Press; Rousseau, D. M. (2006). Is there such a thing as ‘evidence-based management’? *Academy of Management Review*, 31(2), 256–269; Zaccaro, S. J., & Horn, Z.

---

N. J. (2003). Leadership theory and practice: Fostering an effective symbiosis. *The Leadership Quarterly*, 14(6), 769–806. <https://doi.org/10.1016/j.leaqua.2003.09.009>

<sup>9</sup> Geerts, J. M. (2020). Optimising leadership development: An evidence-informed framework [Working paper]; Geerts, J. M., Goodall, A. H., & Agius, S. (2020). Evidence-based leadership development for physicians: A systematic literature review. *Social Science & Medicine*, 246, 112709. <https://doi.org/10.1016/j.socscimed.2019.112709>

<sup>10</sup> Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. <https://doi.org/10.1191/1478088706qp063oa>

<sup>11</sup> Denzin, N. K. (1978). *Sociological methods: A sourcebook*. McGraw Hill; Patton, M. Q. (1999). Enhancing the quality and credibility of qualitative analysis. *Health Services Research*, 34, 1189–1208.

<sup>12</sup> Geerts, J. M. (2020). Optimising leadership development: An evidence-informed framework [Working paper].

<sup>13</sup> Alimo-Metcalf, B., & Lawlor, J. (2001). Leadership development in UK companies at the beginning of the twenty-first century: Lessons for the NHS? *Journal of Management in Medicine*, 15(5), 387–404; Burke, L. A., & Hutchins, H. M. (2007). Training transfer: An integrative literature review. *Human Resource Development Review*, 6(3), 263–296; Dickson, G., & Tholl, B. (2020). Learning LEADS: developing leadership in individuals and organizations. In G. Dickson & B. Tholl (Eds.), *Bringing leadership to life in health: LEADS in a Caring Environment* (Second). Springer; Gilpin-Jackson, Y., & Bushe, G. R. (2007). Leadership development training transfer: A case study of post-training determinants. *Journal of Management Development*, 26(10), 980–1004; Hartley, J., & Hinksman, B. (2003). *Leadership development: A systematic literature review. A report for the NHS Leadership Centre* (pp. 1–77). Warwick Institute of Governance and Public Management; Jeon, Y.-H., Simpson, J. M., Chenoweth, L., Cunich, M., & Kendig, H. (2013). The effectiveness of an aged care specific leadership and management program on workforce, work environment, and care quality outcomes: Design of a cluster randomised controlled trial. *Implementation Science*, 8, 126–136; Johnstal, S. P. (2013). Successful strategies for transfer of learned leadership. *Performance Improvement*, 52(7), 5–12; Klimoski, R., & Amos, B. (2012). Practicing evidence-based education in leadership development. *Academy of Management Learning & Education*, 11(4), 685–702.

<https://doi.org/10.5465/amle.2012.0018>; Lim, D. H., & Johnson, S. D. (2002). Trainee perceptions of factors that influence learning transfer. *International Journal of Training and Development*, 6(1), 36–48; McCauley, C. D. (2008). *Leader development: A review of research*. Center for Creative Leadership; Montesino, M. U. (2002). Strategic alignment of training, transfer—Enhancing behaviors, and training usage: A post-training study. *Human Resource Development Quarterly*, 13(1), 89–108; Phillips, P. P., Phillips, J. J., & Ray, R. (2015). *Measuring the success of leadership development*. ATD Press.

<https://roiinstitute.net/books-resources/all/measuring-the-success-of-leadership-development>; Salas, E., Tannenbaum, S. I., Kraiger, K., & Smith-Jentsch, K. A. (2012). The science of training and development in organizations: What matters in practice. *Psychological Science in the Public Interest*, 13, 74–101.

- 
- <sup>14</sup> Giganti, E. (2003). Developing leaders for 2010. *Health Progress*, 84(1), 11–12; Jeon, Y.-H., Simpson, J. M., Chenoweth, L., Cunich, M., & Kendig, H. (2013). The effectiveness of an aged care specific leadership and management program on workforce, work environment, and care quality outcomes: Design of a cluster randomised controlled trial. *Implementation Science*, 8, 126–136; McCauley, C. D. (2008). *Leader development: A review of research*. Center for Creative Leadership; Salas, E., Tannenbaum, S. I., Kraiger, K., & Smith-Jentsch, K. A. (2012). The science of training and development in organizations: What matters in practice. *Psychological Science in the Public Interest*, 13, 74–101; Van Aerde, J. (2013). *Physician leadership development* (pp. 1–101). Alberta Health Services. <https://www.albertahealthservices.ca/assets/info/hp/phys/if-hp-phys-physician-leadership-development-report.pdf>
- <sup>15</sup> Geerts, J. M. (2018). *Optimal leadership development for professionals* [Unpublished doctoral thesis]. University of Cambridge.
- <sup>16</sup> Blumenthal, D. M., Bernard, K., Fraser, T. N., Bohnen, J., Zeidman, J., & Stone, V. E. (2014). Implementing a pilot leadership course for internal medicine residents: Design considerations, participant impressions, and lessons learned. *BMC Medical Education*, 14(257), 1–11; Dickson, G., & Tholl, B. (2020). Learning LEADS: developing leadership in individuals and organizations. In G. Dickson & B. Tholl (Eds.), *Bringing leadership to life in health: LEADS in a Caring Environment* (Second). Springer; Edmonstone, J. (2009). Evaluating clinical leadership: A case study. *Leadership in Health Services*, 22(3), 210–224; Hartley, J., & Hinksman, B. (2003). *Leadership development: A systematic literature review. A report for the NHS Leadership Centre* (pp. 1–77). Warwick Institute of Governance and Public Management; Pradarelli, J. C., Jaffe, G. A., Lemak, C. H., Mulholland, M. W., & Dimick, J. B. (2016). Designing a leadership development program for surgeons. *Journal of Surgical Research*, 200(1), 53–58. <https://doi.org/10.1016/j.jss.2015.08.002>
- <sup>17</sup> Dickson, G., & Van Aerde, J. (2018). Enabling physicians to lead: Canada’s LEADS framework. *Leadership in Health Services*, 31(2), 183–194. <https://doi.org/10.1108/LHS-12-2017-0077>
- <sup>18</sup> Lacerenza, C. N., Reyes, D. L., Marlow, S. L., Joseph, D. L., & Salas, E. (2017). Leadership training design, delivery, and implementation: A meta-analysis. *Journal of Applied Psychology*, 102(12), 1686–1718. <https://doi.org/10.1037/apl0000241>
- <sup>19</sup> Arthur, W. J., Bennet, W. J., Edens, P. S., & Bell, S. T. (2003). Effectiveness of training in organizations: A meta-analysis of design and evaluation features. *Journal of Applied Psychology*, 88(2), 234–245; Phillips, P. P., Phillips, J. J., & Ray, R. (2015). *Measuring the success of leadership development*. ATD Press. <https://roiinstitute.net/books-resources/all/measuring-the-success-of-leadership-development>; Salas, E., Tannenbaum, S. I., Kraiger, K., & Smith-Jentsch, K. A. (2012). The science of training and development in organizations: What matters in practice. *Psychological Science in the Public Interest*, 13, 74–101.
- <sup>20</sup> Edmonstone, J. (2013). Healthcare leadership: Learning from evaluation. *Leadership in Health Services*, 26(2), 148–158; Phillips, P. P., Phillips, J. J., & Ray, R. (2015). *Measuring*

---

*the success of leadership development*. ATD Press. <https://roiinstitute.net/books-resources/all/measuring-the-success-of-leadership-development>; Salas, E., Tannenbaum, S. I., Kraiger, K., & Smith-Jentsch, K. A. (2012). The science of training and development in organizations: What matters in practice. *Psychological Science in the Public Interest*, *13*, 74–101.

<sup>21</sup> Beer, M., Finnström, M., & Schrader, D. (2016). Why leadership training fails—And what to do about it. *Harvard Business Review*, *94*(10), 50–57; Blumenthal, D. M., Bernard, K., Fraser, T. N., Bohnen, J., Zeidman, J., & Stone, V. E. (2014). Implementing a pilot leadership course for internal medicine residents: Design considerations, participant impressions, and lessons learned. *BMC Medical Education*, *14*(257), 1–11; Day, D. V., & Halpin, S. M. (2001). *Leadership development: A review of industry best practices*. *Review on corporate training*. (pp. 1–61) [Technical Report]. U.S. Army Research Institute for the Behavioral and Social Sciences; Gilpin-Jackson, Y., & Bushe, G. R. (2007). Leadership development training transfer: A case study of post-training determinants. *Journal of Management Development*, *26*(10), 980–1004; Kuo, A. K., Thyne, S. M., Chen, H. C., West, D. C., & Kamei, R. K. (2010). An innovative residency program designed to develop leaders to improve the health of children. *Academic Medicine*, *85*(10), 1603–1608; MacPhail, A., Young, C., & Ibrahim, J. E. (2015). Workplace-based clinical leadership training increases willingness to lead. *Leadership in Health Services*, *28*(2), 100–118; Malling, B., Mortensen, L., Bonderup, T., Scherpbier, A., & Ringsted, C. (2009). Combining a leadership course and multi-source feedback has no effect on leadership skills of leaders in postgraduate medical education. An intervention study with a control group. *BMC Medical Education*, *9*(72), 1–7; McCauley, C. D. (2008). *Leader development: A review of research*. Center for Creative Leadership; Salas, E., Tannenbaum, S. I., Kraiger, K., & Smith-Jentsch, K. A. (2012). The science of training and development in organizations: What matters in practice. *Psychological Science in the Public Interest*, *13*, 74–101; Simmonds, D., & Tsui, O. (2010). Effective design of a global leadership programme. *Human Resource Development International*, *13*(5), 519–540; Van Aerde, J. (2013). *Physician leadership development* (pp. 1–101). Alberta Health Services. <https://www.albertahealthservices.ca/assets/info/hp/phys/if-hp-phys-physician-leadership-development-report.pdf>

<sup>22</sup> Phillips, P. P., Phillips, J. J., & Ray, R. (2015). *Measuring the success of leadership development*. ATD Press. <https://roiinstitute.net/books-resources/all/measuring-the-success-of-leadership-development/>

<sup>23</sup> Hamlin, B. (2010). Evidence-based leadership and management development. In J. Gold, R. Thorpe, & A. Mumford (Eds.), *Gower handbook of leadership and management development* (5th ed., pp. 197–220). Gower; Rousseau, D. M. (2006). Is there such a thing as ‘evidence-based management’? *Academy of Management Review*, *31*(2), 256–269.

<sup>24</sup> Knowles, M. S. (1990). *The adult learner: A neglected species* (4th ed.). Gulf Publishing; Saks, A. M., & Belcourt, M. (2006). An investigation of training activities and transfer of training in organizations. *Human Resource Management*, *45*, 629–648; Salas, E., Tannenbaum, S. I., Kraiger, K., & Smith-Jentsch, K. A. (2012). The science of training and development in organizations: What matters in practice. *Psychological Science in the Public Interest*, *13*, 74–101.

- 
- <sup>25</sup> Dalakoura, A. (2010). Differentiating leader and leadership development: A collective framework for leadership development. *The Journal of Management Development*, 29(5), 432–441; Fernandez, C. S. P., Noble, C. C., Jensen, E. T., & Chapin, J. (2016). Improving Leadership Skills in Physicians: A 6-Month Retrospective Study. *Journal of Leadership Studies*, 9(4), 6–19. <https://doi.org/10.1002/jls.21420>; Gilpin-Jackson, Y., & Bushe, G. R. (2007). Leadership development training transfer: A case study of post-training determinants. *Journal of Management Development*, 26(10), 980–1004; Jeon, Y.-H., Simpson, J. M., Chenoweth, L., Cunich, M., & Kendig, H. (2013). The effectiveness of an aged care specific leadership and management program on workforce, work environment, and care quality outcomes: Design of a cluster randomised controlled trial. *Implementation Science*, 8, 126–136; Leskiw, S., & Singh, P. (2007). Leadership development: Learning from best practices. *Leadership & Organization Development Journal*, 28(5), 444–464. <https://doi.org/10.1108/01437730710761742>; Peters, L., Baum, J., & Stephens, G. (2011). Creating ROI in leadership development. *Organizational Dynamics*, 40, 104–109; Phillips, P. P., Phillips, J. J., & Ray, R. (2015). *Measuring the success of leadership development*. ATD Press. <https://roinstitute.net/books-resources/all/measuring-the-success-of-leadership-development>; Salas, E., Tannenbaum, S. I., Kraiger, K., & Smith-Jentsch, K. A. (2012). The science of training and development in organizations: What matters in practice. *Psychological Science in the Public Interest*, 13, 74–101.
- <sup>26</sup> Culpin, V., Eichenberg, T., Hayward, I., & Abraham, P. (2014). Learning, intention to transfer and transfer in executive education. *International Journal of Training and Development*, 18(2), 132–147; Gilpin-Jackson, Y., & Bushe, G. R. (2007). Leadership development training transfer: A case study of post-training determinants. *Journal of Management Development*, 26(10), 980–1004; Steinert, Y., Naismith, L., & Mann, K. (2012). Faculty development initiatives designed to promote leadership in medical education. A BEME systematic review: BEME guide no. 19. *The International Journal of Medical Technology*, 34(6), 483–503. <https://doi.org/doi:10.3109/0142159X.2012.680937>
- <sup>27</sup> Blume, B. D., Ford, J. K., Baldwin, T. T., & Huang, J. L. (2010). Training transfer: A meta-analytic review. *Journal of Management*, 38(4), 1065–1105; Brinkerhoff, R. O., & Gill, S. J. (1994). *The Learning Alliance: System thinking in human resource development*. Jossey-Bass; Burke, L. A., & Baldwin, T. T. (1999). Workforce training transfer: A study of the effect of relapse prevention training and transfer. *Human Resource Management*, 38(3), 227–243; Burke, L. A., & Hutchins, H. M. (2007). Training transfer: An integrative literature review. *Human Resource Development Review*, 6(3), 263–296; Clarke, N. (2012). Evaluating leadership training and development: A levels-of-analysis perspective. *Human Resource Development Quarterly*, 23(4), 441–460. <https://doi.org/10.1002/hrdq.21146>; Klimoski, R., & Amos, B. (2012). Practicing evidence-based education in leadership development. *Academy of Management Learning & Education*, 11(4), 685–702. <https://doi.org/10.5465/amle.2012.0018>; McCauley, C. D. (2008). *Leader development: A review of research*. Center for Creative Leadership; Ready, D. A., & Conger, J. A. (2003). Why leadership-development efforts fail. *MIT Sloan Management Review*, 44(3), 83–88; Salas, E., Tannenbaum, S. I., Kraiger, K., & Smith-Jentsch, K. A. (2012). The science of
-

---

training and development in organizations: What matters in practice. *Psychological Science in the Public Interest*, 13, 74–101.

<sup>28</sup> Chiaburu, D. S., & Marinova, S. V. (2005). What predicts skill transfer? An exploratory study of goal orientation, training self-efficacy, and organizational supports. *International Journal of Training and Development*, 9, 110–123; Fecteau, J. D., Dobbins, G. H., Russell, J. E. A., Ladd, R. T., & Kudisch, J. D. (1995). The influence of general perceptions of the training environment on pretraining motivation and perceived training transfer. *Journal of Management*, 21(1), 1–25; Martin, H. J. (2010). Workplace climate and peer support as determinants of training transfer. *Human Resource Development Quarterly*, 21, 87–104.

<sup>29</sup> Burke, L. A., & Hutchins, H. M. (2007). Training transfer: An integrative literature review. *Human Resource Development Review*, 6(3), 263–296; Gilpin-Jackson, Y., & Bushe, G. R. (2007). Leadership development training transfer: A case study of post-training determinants. *Journal of Management Development*, 26(10), 980–1004; Groves, K. S. (2007). Integrating leadership development and succession planning best practices. *Journal of Management Development*, 26(3), 239–260; Salas, E., Tannenbaum, S. I., Kraiger, K., & Smith-Jentsch, K. A. (2012). The science of training and development in organizations: What matters in practice. *Psychological Science in the Public Interest*, 13, 74–101.

<sup>30</sup> Van Aerde, J. (2013). *Physician leadership development* (pp. 1–101). Alberta Health Services. <https://www.albertahealthservices.ca/assets/info/hp/phys/if-hp-phys-physician-leadership-development-report.pdf>

<sup>31</sup> Alliger, G. M., Tannenbaum, S. I., Bennett, W. Jr., Traver, H., & Shotland, A. (1997). A meta-analysis of the relations among training criteria. *Personnel Psychology*, 50(2), 341–358; Fecteau, J. D., Dobbins, G. H., Russell, J. E. A., Ladd, R. T., & Kudisch, J. D. (1995). The influence of general perceptions of the training environment on pretraining motivation and perceived training transfer. *Journal of Management*, 21(1), 1–25; Gilpin-Jackson, Y., & Bushe, G. R. (2007). Leadership development training transfer: A case study of post-training determinants. *Journal of Management Development*, 26(10), 980–1004; Hartley, J., & Hinksman, B. (2003). *Leadership development: A systematic literature review. A report for the NHS Leadership Centre* (pp. 1–77). Warwick Institute of Governance and Public Management; Holton III, E. E., Bates, R. A., & Ruona, W. E. A. (2000). Development of a generalized learning transfer system inventory. *Human Resource Development Quarterly*, 11(4), 333–360; Johnstal, S. P. (2013). Successful strategies for transfer of learned leadership. *Performance Improvement*, 52(7), 5–12; Klimoski, R., & Amos, B. (2012). Practicing evidence-based education in leadership development. *Academy of Management Learning & Education*, 11(4), 685–702. <https://doi.org/10.5465/amle.2012.0018>; Lim, D. H., & Johnson, S. D. (2002). Trainee perceptions of factors that influence learning transfer. *International Journal of Training and Development*, 6(1), 36–48; Lim, D. H., & Morris, M. L. (2006). Influence of trainee characteristics, instructional satisfaction, and organizational climate on perceived learning and training transfer. *Human Resource Development Quarterly*, 17(1), 85–115; Montesino, M. U. (2002). Strategic alignment of training, transfer—Enhancing behaviors, and training usage: A post-training study. *Human Resource Development Quarterly*, 13(1), 89–108; Phillips, P. P., Phillips, J. J., & Ray, R. (2015).

---

*Measuring the success of leadership development*. ATD Press. <https://roiinstitute.net/books-resources/all/measuring-the-success-of-leadership-development>; Salas, E., Tannenbaum, S. I., Kraiger, K., & Smith-Jentsch, K. A. (2012). The science of training and development in organizations: What matters in practice. *Psychological Science in the Public Interest*, 13, 74–101; van der Locht, M., van Dam, K., & Chiaburu, D. S. (2013). Getting the most of management training: The role of identical elements for training transfer. *Personnel Review*, 42(4), 422–439.

<sup>32</sup> Dale, E. (1969). *Audio-visual methods in teaching* (3rd ed.). The Dryden Press; Fayolle, A., & Gailly, B. (2008). From craft to science: Teaching models and learning processes in entrepreneurship education. *Journal of European Industrial Training*, 32(7), 569–593; Geerts, J. M. (2018). *Optimal leadership development for professionals* [Unpublished doctoral thesis]. University of Cambridge; Lacerenza, C. N., Reyes, D. L., Marlow, S. L., Joseph, D. L., & Salas, E. (2017). Leadership training design, delivery, and implementation: A meta-analysis. *Journal of Applied Psychology*, 102(12), 1686–1718. <https://doi.org/10.1037/apl0000241>; Nabi, G., Liñán, F., Fayolle, A., Krueger, N., & Walmsley, A. (2017). The impact of entrepreneurship education in higher education: A systematic review and research agenda. *Academy of Management Learning & Education*, 16(2), 277–299. <https://doi.org/10.5465/amle.2015.0026>; Phillips, P. P., Phillips, J. J., & Ray, R. (2015). *Measuring the success of leadership development*. ATD Press. <https://roiinstitute.net/books-resources/all/measuring-the-success-of-leadership-development>; Salas, E., Tannenbaum, S. I., Kraiger, K., & Smith-Jentsch, K. A. (2012). The science of training and development in organizations: What matters in practice. *Psychological Science in the Public Interest*, 13, 74–101; Taylor, P. J., Russ-Eft, D. F., & Taylor, H. (2009). Transfer of management training from alternative perspectives. *Journal of Applied Psychology*, 94, 104–121.

<sup>33</sup> Knowles, M. S. (1990). *The adult learner: A neglected species* (4th ed.). Gulf Publishing; Leskiw, S., & Singh, P. (2007). Leadership development: Learning from best practices. *Leadership & Organization Development Journal*, 28(5), 444–464. <https://doi.org/10.1108/01437730710761742>; MacPhail, A., Young, C., & Ibrahim, J. E. (2015). Workplace-based clinical leadership training increases willingness to lead. *Leadership in Health Services*, 28(2), 100–118; McGurk, P. (2010). Outcomes of management and leadership development. *Journal of Management Development*, 29(5), 457–470; Steinert, Y., Naismith, L., & Mann, K. (2012). Faculty development initiatives designed to promote leadership in medical education. A BEME systematic review: BEME guide no. 19. *The International Journal of Medical Technology*, 34(6), 483–503. <https://doi.org/doi:10.3109/0142159X.2012.680937>; Ten Have, E. C. M., Nap, R. E., & Tulleken, J. E. (2013). Quality improvement of interdisciplinary rounds by leadership training based on essential quality indicators of the Interdisciplinary Rounds Assessment Scale. *Intensive Care Medicine*, 39(10), 1800–1807. <https://doi.org/10.1007/s00134-013-3002-0>

<sup>34</sup> Burke, L. A., & Hutchins, H. M. (2007). Training transfer: An integrative literature review. *Human Resource Development Review*, 6(3), 263–296; Hughes, A. M., Zajac, S., Spencer, J. M., & Salas, E. (2018). A checklist for facilitating training transfer in organizations.

---

*International Journal of Training and Development*, 22(4), 334–345.  
<https://doi.org/10.1111/ijtd.12141>; Knowles, M. S. (1984). *Andragogy in action*. Jossey-Bass; McGurk, P. (2010). Outcomes of management and leadership development. *Journal of Management Development*, 29(5), 457–470; Petriglieri, G., Wood, J. D., & Petriglieri, J. L. (2011). Up close and personal: Building foundations for leaders' development through the personalization of management learning. *Academy of Management Learning & Education*, 10(3), 430–450; Salas, E., Tannenbaum, S. I., Kraiger, K., & Smith-Jentsch, K. A. (2012). The science of training and development in organizations: What matters in practice. *Psychological Science in the Public Interest*, 13, 74–101; Watkins, K. E., Lysø, I. H., & deMarrais, K. (2011). Evaluating executive leadership programmes: A theory of change approach. *Advances in Developing Human Resources*, 13(2), 208–239.

<sup>35</sup> Salas, E., Tannenbaum, S. I., Kraiger, K., & Smith-Jentsch, K. A. (2012). The science of training and development in organizations: What matters in practice. *Psychological Science in the Public Interest*, 13, 74–101; Watkins, K. E., Lysø, I. H., & deMarrais, K. (2011). Evaluating executive leadership programmes: A theory of change approach. *Advances in Developing Human Resources*, 13(2), 208–239.

<sup>36</sup> Day, D. V., & Halpin, S. M. (2001). *Leadership development: A review of industry best practices*. *Review on corporate training*. (pp. 1–61) [Technical Report]. U.S. Army Research Institute for the Behavioral and Social Sciences; Ibarra, P. (2005). Succession planning: An idea whose time has come. *Public Management*, 87(1), 18–23; Leskiw, S., & Singh, P. (2007). Leadership development: Learning from best practices. *Leadership & Organization Development Journal*, 28(5), 444–464. <https://doi.org/10.1108/01437730710761742>; Redecker, J. (2004). The legal overlay to succession planning. *Employee Relations Law Journal*, 30(2), 23–30.

<sup>37</sup> Avolio, B. J., Avey, J. B., & Quisenberry, D. (2010). Estimating return on leadership development investment. *The Leadership Quarterly*, 21(4), 633–644; McCauley, C. D. (2008). *Leader development: A review of research*. Center for Creative Leadership; Phillips, P. P., Phillips, J. J., & Ray, R. (2015). *Measuring the success of leadership development*. ATD Press. <https://roiinstitute.net/books-resources/all/measuring-the-success-of-leadership-development/>

<sup>38</sup> Geerts, J. M. (2018). *Optimal leadership development for professionals* [Unpublished doctoral thesis]. University of Cambridge.

<sup>39</sup> Dale, E. (1969). *Audio-visual methods in teaching* (3rd ed.). The Dryden Press; Fernandez, C. S. P., Noble, C. C., Jensen, E. T., & Chapin, J. (2016). Improving leadership skills in physicians: A 6-month retrospective study. *Journal of Leadership Studies*, 9(4), 6–19; Geerts, J. M., Goodall, A. H., & Agius, S. (2019). Evidence-based leadership development for physicians: A systematic literature review. *Social Science & Medicine*, *In press*. <https://doi.org/10.1016/j.socscimed.2019.112709>; Knowles, M. S. (1984). *Andragogy in action*. Jossey-Bass; Kuo, A. K., Thyne, S. M., Chen, H. C., West, D. C., & Kamei, R. K. (2010). An innovative residency program designed to develop leaders to improve the health of children. *Academic Medicine*, 85(10), 1603–1608; MacPhail, A., Young, C., & Ibrahim, J. E. (2015). Workplace-based clinical leadership training increases willingness to lead.

---

*Leadership in Health Services*, 28(2), 100–118; Nabi, G., Liñán, F., Fayolle, A., Krueger, N., & Walmsley, A. (2017). The impact of entrepreneurship education in higher education: A systematic review and research agenda. *Academy of Management Learning & Education*, 16(2), 277–299. <https://doi.org/10.5465/amle.2015.0026>; Phillips, P. P., Phillips, J. J., & Ray, R. (2015). *Measuring the success of leadership development*. ATD Press. <https://roiinstitute.net/books-resources/all/measuring-the-success-of-leadership-development>;

Salas, E., Tannenbaum, S. I., Kraiger, K., & Smith-Jentsch, K. A. (2012). The science of training and development in organizations: What matters in practice. *Psychological Science in the Public Interest*, 13, 74–101; Taylor, P. J., Russ-Eft, D. F., & Taylor, H. (2009). Transfer of management training from alternative perspectives. *Journal of Applied Psychology*, 94, 104–121.

<sup>40</sup> Hamlin, B. (2010). Evidence-based leadership and management development. In J. Gold, R. Thorpe, & A. Mumford (Eds.), *Gower handbook of leadership and management development* (5th ed., pp. 197–220). Gower; Klimoski, R., & Amos, B. (2012). Practicing evidence-based education in leadership development. *Academy of Management Learning & Education*, 11(4), 685–702. <https://doi.org/10.5465/amle.2012.0018>; Rousseau, D. M. (2006). Is there such a thing as ‘evidence-based management’? *Academy of Management Review*, 31(2), 256–269; Salas, E., Tannenbaum, S. I., Kraiger, K., & Smith-Jentsch, K. A. (2012). The science of training and development in organizations: What matters in practice. *Psychological Science in the Public Interest*, 13, 74–101.

<sup>41</sup> Geerts, J. M. (2018). *Optimal leadership development for professionals* [Unpublished doctoral thesis]. University of Cambridge.

<sup>42</sup> Kontoghiorghes, C. (2001). Factors affecting training effectiveness in the context of the introduction of new technology—A US case study. *International Journal of Training and Development*, 5, 248–260; Salas, E., Tannenbaum, S. I., Kraiger, K., & Smith-Jentsch, K. A. (2012). The science of training and development in organizations: What matters in practice. *Psychological Science in the Public Interest*, 13, 74–101.

<sup>43</sup> Burke, L. A., & Hutchins, H. M. (2007). Training transfer: An integrative literature review. *Human Resource Development Review*, 6(3), 263–296; Salas, E., Tannenbaum, S. I., Kraiger, K., & Smith-Jentsch, K. A. (2012). The science of training and development in organizations: What matters in practice. *Psychological Science in the Public Interest*, 13, 74–101; Taylor, P. J., Russ-Eft, D. F., & Taylor, H. (2009). Transfer of management training from alternative perspectives. *Journal of Applied Psychology*, 94, 104–121.

<sup>44</sup> Suutari, V., & Viitala, R. (2008). Management development of senior executives: Methods and their effectiveness. *Personnel Review*, 37(4), 375–392.

<sup>45</sup> Arthur, W. J., Bennet, W. J., Edens, P. S., & Bell, S. T. (2003). Effectiveness of training in organizations: A meta-analysis of design and evaluation features. *Journal of Applied Psychology*, 88(2), 234–245; Avolio, B. J., Avey, J. B., & Quisenberry, D. (2010). Estimating return on leadership development investment. *The Leadership Quarterly*, 21(4), 633–644; Lacerenza, C. N., Reyes, D. L., Marlow, S. L., Joseph, D. L., & Salas, E. (2017). Leadership training design, delivery, and implementation: A meta-analysis. *Journal of Applied Psychology*, 102(12), 1686–1718. <https://doi.org/10.1037/apl0000241>

---

<sup>46</sup> Car, L. T., Kyaw, B. M., & Atun, R. (2018). The role of eLearning in health management and leadership capacity building in health system: A systematic review. *Human Resources for Health, 16*, 44. <https://doi.org/10.1186/s12960-018-0305-9>

<sup>47</sup> Lacerenza, C. N., Reyes, D. L., Marlow, S. L., Joseph, D. L., & Salas, E. (2017). Leadership training design, delivery, and implementation: A meta-analysis. *Journal of Applied Psychology, 102*(12), 1686–1718. <https://doi.org/10.1037/apl0000241>; Salas, E., Tannenbaum, S. I., Kraiger, K., & Smith-Jentsch, K. A. (2012). The science of training and development in organizations: What matters in practice. *Psychological Science in the Public Interest, 13*, 74–101.

<sup>48</sup> Avolio, B. J., Avey, J. B., & Quisenberry, D. (2010). Estimating return on leadership development investment. *The Leadership Quarterly, 21*(4), 633–644; MacPhail, A., Young, C., & Ibrahim, J. E. (2015). Workplace-based clinical leadership training increases willingness to lead. *Leadership in Health Services, 28*(2), 100–118.

<sup>49</sup> Kellerman, B. (2012). *The end of leadership*. Harper Collins.

<sup>50</sup> Lacerenza, C. N., Reyes, D. L., Marlow, S. L., Joseph, D. L., & Salas, E. (2017). Leadership training design, delivery, and implementation: A meta-analysis. *Journal of Applied Psychology, 102*(12), 1686–1718. <https://doi.org/10.1037/apl0000241>

<sup>51</sup> Lacerenza, C. N., Reyes, D. L., Marlow, S. L., Joseph, D. L., & Salas, E. (2017). Leadership training design, delivery, and implementation: A meta-analysis. *Journal of Applied Psychology, 102*(12), 1686–1718. <https://doi.org/10.1037/apl0000241>

<sup>52</sup> van der Locht, M., van Dam, K., & Chiaburu, D. S. (2013). Getting the most of management training: The role of identical elements for training transfer. *Personnel Review, 42*(4), 422–439.

<sup>53</sup> Car, L. T., Kyaw, B. M., & Atun, R. (2018). The role of eLearning in health management and leadership capacity building in health system: A systematic review. *Human Resources for Health, 16*, 44. <https://doi.org/10.1186/s12960-018-0305-9>

<sup>54</sup> Car, L. T., Kyaw, B. M., & Atun, R. (2018). The role of eLearning in health management and leadership capacity building in health system: A systematic review. *Human Resources for Health, 16*, 44. <https://doi.org/10.1186/s12960-018-0305-9>; Dickson, G., & Tholl, B. (2020). Learning LEADS: developing leadership in individuals and organizations. In G. Dickson & B. Tholl (Eds.), *Bringing leadership to life in health: LEADS in a Caring Environment* (Second). Springer

<sup>55</sup> Car, L. T., Kyaw, B. M., & Atun, R. (2018). The role of eLearning in health management and leadership capacity building in health system: A systematic review. *Human Resources for Health, 16*, 44. <https://doi.org/10.1186/s12960-018-0305-9>

<sup>56</sup> Car, L. T., Kyaw, B. M., & Atun, R. (2018). The role of eLearning in health management and leadership capacity building in health system: A systematic review. *Human Resources for Health, 16*, 44. <https://doi.org/10.1186/s12960-018-0305-9>; Dickson, G., & Tholl, B. (2020). Learning LEADS: developing leadership in individuals and organizations. In G. Dickson & B. Tholl (Eds.), *Bringing leadership to life in health: LEADS in a Caring Environment* (Second). Springer

- 
- <sup>57</sup> Car, L. T., Kyaw, B. M., & Atun, R. (2018). The role of eLearning in health management and leadership capacity building in health system: A systematic review. *Human Resources for Health, 16*, 44. <https://doi.org/10.1186/s12960-018-0305-9>; Dickson, G., & Tholl, B. (2020). Learning LEADS: developing leadership in individuals and organizations. In G. Dickson & B. Tholl (Eds.), *Bringing leadership to life in health: LEADS in a Caring Environment (Second)*. Springer
- <sup>58</sup> Car, L. T., Kyaw, B. M., & Atun, R. (2018). The role of eLearning in health management and leadership capacity building in health system: A systematic review. *Human Resources for Health, 16*, 44. <https://doi.org/10.1186/s12960-018-0305-9>; Dickson, G., & Tholl, B. (2020). Learning LEADS: developing leadership in individuals and organizations. In G. Dickson & B. Tholl (Eds.), *Bringing leadership to life in health: LEADS in a Caring Environment (Second)*. Springer
- <sup>59</sup> Watkins, K. E., Lysø, I. H., & deMarrais, K. (2011). Evaluating executive leadership programmes: A theory of change approach. *Advances in Developing Human Resources, 13*(2), 208–239.
- <sup>60</sup> Abrell, C., Rowold, J., Weibler, J., & Moenninghoff, M. (2011). Evaluation of a long-term transformational leadership development program. *Zeitschrift Für Personalforschung, 25*(3), 205–224; Dannels, S. A., Yamagata, H., McDade, S. A., Chuang, Y.-C., Gleason, K. A., McLaughlin, J. M., Richman, R. C., & Morahan, P. S. (2008). Evaluating a leadership program: A comparative, longitudinal study to assess the impact of the Executive Leadership in Academic Medicine (ELAM) program for women. *Academic Medicine, 83*(5), 488–495; Hirst, G., Mann, L., Bain, P., Pirola-Merlo, A., & Richver, A. (2004). Learning to lead: The development and testing of a model of leadership learning. *Leadership Quarterly, 15*(3), 311–327.
- <sup>61</sup> Blume, B. D., Ford, J. K., Baldwin, T. T., & Huang, J. L. (2010). Training transfer: A meta-analytic review. *Journal of Management, 38*(4), 1065–1105; Taylor, P. J., Russ-Eft, D. F., & Taylor, H. (2009). Transfer of management training from alternative perspectives. *Journal of Applied Psychology, 94*, 104–121.
- <sup>62</sup> Husebø, S. E., & Akerjordet, K. (2016). Quantitative systematic review of multi professional teamwork and leadership training to optimize patient outcomes in acute hospital settings. *Journal of Advanced Nursing, 72*(12), 2980–3000. <https://doi.org/10.1111/jan.13035>; Rosenman, E. D., Shandro, J. R., Ilgen, J. S., Harper, A. L., & Fernandez, R. (2014). Leadership training in health care action teams: A systematic review. *Academic Medicine, 89*(9), 1295–1306.
- <sup>63</sup> Geerts, J. M. (2018). *Optimal leadership development for professionals* [Unpublished doctoral thesis]. University of Cambridge; Lacerenza, C. N., Reyes, D. L., Marlow, S. L., Joseph, D. L., & Salas, E. (2017). Leadership training design, delivery, and implementation: A meta-analysis. *Journal of Applied Psychology, 102*(12), 1686–1718. <https://doi.org/10.1037/apl0000241>
- <sup>64</sup> Blumenthal, D. M., Bernard, K., Fraser, T. N., Bohnen, J., Zeidman, J., & Stone, V. E. (2014). Implementing a pilot leadership course for internal medicine residents: Design considerations, participant impressions, and lessons learned. *BMC Medical Education, 14*, 1–11. <https://doi.org/10.1186/s12916-014-0141-1>
- 
- CHLNet: Wise Practices Technical Report (May 2020) 56

---

14(257), 1–11; Burke, L. A., & Hutchins, H. M. (2007). Training transfer: An integrative literature review. *Human Resource Development Review*, 6(3), 263–296; Edmonstone, J. (2013). Healthcare leadership: Learning from evaluation. *Leadership in Health Services*, 26(2), 148–158; Salas, E., Tannenbaum, S. I., Kraiger, K., & Smith-Jentsch, K. A. (2012). The science of training and development in organizations: What matters in practice. *Psychological Science in the Public Interest*, 13, 74–101; Simmonds, D., & Tsui, O. (2010). Effective design of a global leadership programme. *Human Resource Development International*, 13(5), 519–540; Van Aerde, J. (2013). *Physician leadership development* (pp. 1–101). Alberta Health Services. <https://www.albertahealthservices.ca/assets/info/hp/phys/if-hp-phys-physician-leadership-development-report.pdf>

<sup>65</sup> Culpin, V., Eichenberg, T., Hayward, I., & Abraham, P. (2014). Learning, intention to transfer and transfer in executive education. *International Journal of Training and Development*, 18(2), 132–147.

<sup>66</sup> Amagoh, F. (2009). Leadership development and leadership effectiveness. *Management Decision*, 47(6), 989–999; Blumenthal, D. M., Bernard, K., Fraser, T. N., Bohnen, J., Zeidman, J., & Stone, V. E. (2014). Implementing a pilot leadership course for internal medicine residents: Design considerations, participant impressions, and lessons learned. *BMC Medical Education*, 14(257), 1–11; Leskiw, S., & Singh, P. (2007). Leadership development: Learning from best practices. *Leadership & Organization Development Journal*, 28(5), 444–464. <https://doi.org/10.1108/01437730710761742>

<sup>67</sup> Amagoh, F. (2009). Leadership development and leadership effectiveness. *Management Decision*, 47(6), 989–999; Gronn, P. (2002). Leader Formation. In K. Keithwood & P. Hallinger (Eds.), *Second International Handbook of Educational Leadership and Administration* (pp. 1031–1070). Kluwer Academic Publishers; Groves, K. S. (2007). Integrating leadership development and succession planning best practices. *Journal of Management Development*, 26(3), 239–260.

<sup>68</sup> Dale, E. (1969). *Audio-visual methods in teaching* (3rd ed.). The Dryden Press; Edmonstone, J. (2013). Healthcare leadership: Learning from evaluation. *Leadership in Health Services*, 26(2), 148–158; Frich, J. C., Brewster, A. L., Cherlin, E. J., & Bradley, E. H. (2015). Leadership development programs for physicians: A systematic review. *Journal of General Internal Medicine*, 30(5), 656–74; Geerts, J. M. (2018). *Optimal leadership development for professionals* [Unpublished doctoral thesis]. University of Cambridge; Hernez-Broome, G., & Hughes, R. L. (2004). Leadership development: Past, present, and future. *Human Resource Planning*, 27(1), 24–32; Kuo, A. K., Thyne, S. M., Chen, H. C., West, D. C., & Kamei, R. K. (2010). An innovative residency program designed to develop leaders to improve the health of children. *Academic Medicine*, 85(10), 1603–1608; Leskiw, S., & Singh, P. (2007). Leadership development: Learning from best practices. *Leadership & Organization Development Journal*, 28(5), 444–464. <https://doi.org/10.1108/01437730710761742>; McGurk, P. (2010). Outcomes of management and leadership development. *Journal of Management Development*, 29(5), 457–470; Miller, D. L., Umble, K. E., Frederick, S. L., & Dinkin, D. R. (2007). Linking learning methods to

---

outcomes in public health leadership development. *Leadership in Health Services*, 20(2), 97–123; Van Aerde, J. (2013). *Physician leadership development* (pp. 1–101). Alberta Health Services. <https://www.albertahealthservices.ca/assets/info/hp/phys/if-hp-phys-physician-leadership-development-report.pdf>; Zenger, J. H., & Folkman, J. (2003). Developing leaders. *Executive Excellence*, 20(9), 5.

<sup>69</sup> Geerts, J. M. (2018). *Optimal leadership development for professionals* [Unpublished doctoral thesis]. University of Cambridge; Gilpin-Jackson, Y., & Bushe, G. R. (2007). Leadership development training transfer: A case study of post-training determinants. *Journal of Management Development*, 26(10), 980–1004; Kolb, D. A. (1984). *Experiential learning: Experience as the source of learning and development*. Prentice Hall; Lacerenza, C. N., Reyes, D. L., Marlow, S. L., Joseph, D. L., & Salas, E. (2017). Leadership training design, delivery, and implementation: A meta-analysis. *Journal of Applied Psychology*, 102(12), 1686–1718. <https://doi.org/10.1037/apl0000241>; Piaget, J. (1952). *The origin of intelligence in children*. Norton; Weaver, S. J., Dy, S. M., & Rosen, M. A. (2014). Team-training in healthcare: A narrative synthesis of the literature. *British Medical Journal Quality and Safety*, 23, 359–372.

<sup>70</sup> Dickson, G., & Tholl, B. (2020). Learning LEADS: developing leadership in individuals and organizations. In G. Dickson & B. Tholl (Eds.), *Bringing leadership to life in health: LEADS in a Caring Environment* (Second). Springer; Hartley, J., & Hinksman, B. (2003). *Leadership development: A systematic literature review. A report for the NHS Leadership Centre* (pp. 1–77). Warwick Institute of Governance and Public Management; Klimoski, R., & Amos, B. (2012). Practicing evidence-based education in leadership development. *Academy of Management Learning & Education*, 11(4), 685–702. <https://doi.org/10.5465/amle.2012.0018>; Kuo, A. K., Thyne, S. M., Chen, H. C., West, D. C., & Kamei, R. K. (2010). An innovative residency program designed to develop leaders to improve the health of children. *Academic Medicine*, 85(10), 1603–1608; Salas, E., Tannenbaum, S. I., Kraiger, K., & Smith-Jentsch, K. A. (2012). The science of training and development in organizations: What matters in practice. *Psychological Science in the Public Interest*, 13, 74–101.

<sup>71</sup> Bearman, M., O'Brien, R., Anthony, A., Civil, I., Flanagan, B., Jolly, B., Birks, D., Langcake, M., Molloy, E., & Nestel, D. (2012). Learning surgical communication, leadership and teamwork through simulation. *Journal of Surgical Education*, 69(2), 201–207; Brown, T. C., McCracken, M., & Hillier, T.-L. (2013). Using evidence-based practices to enhance transfer of training: Assessing the effectiveness of goal setting and behavioral observation scales. *Human Resource Development International*, 16(4), 374–389; Bruppacher, H. R., Alam, S. K., LeBlanc, V. R., Latter, D., Naik, V. N., Savoldelli, G. L., Mazer, C. D., Kurrek, M. M., & Joo, H. S. (2010). Simulation-based training improves physicians' performance in patient care in high-stakes clinical setting of cardiac surgery. *Anesthesiology*, 112(4), 985–992. <https://doi.org/10.1097/ALN.0b013e3181d3e31c>; Getha-Taylor, H., & Morse, R. S. (2013). Collaborative leadership development for local government officials: Exploring competencies and program impact. *Public Administration Quarterly*, Spring, 72–103; Hughes, A. M., Zajac, S., Spencer, J. M., & Salas, E. (2018). A checklist for facilitating

---

training transfer in organizations. *International Journal of Training and Development*, 22(4), 334–345. <https://doi.org/10.1111/ijtd.12141>; Kneebone, R. (2005). Evaluating clinical simulations for learning procedural skills: A theory-based approach. *Academic Medicine*, 80, 549–553; Rowland, D. (2016). Why leadership development isn't developing leaders. *Harvard Business Review*, 1–5; Saks, A. M., & Belcourt, M. (2006). An investigation of training activities and transfer of training in organizations. *Human Resource Management*, 45, 629–648; van der Locht, M., van Dam, K., & Chiaburu, D. S. (2013). Getting the most of management training: The role of identical elements for training transfer. *Personnel Review*, 42(4), 422–439.

<sup>72</sup> Dickson, G., & Tholl, B. (2020). Learning LEADS: developing leadership in individuals and organizations. In G. Dickson & B. Tholl (Eds.), *Bringing leadership to life in health: LEADS in a Caring Environment* (Second). Springer.

<sup>73</sup> Amagoh, F. (2009). Leadership development and leadership effectiveness. *Management Decision*, 47(6), 989–999; Bowles, S., Cunningham, C. J. L., Rosa, G. M. D. L., & Picano, J. (2007). Coaching leaders in middle and executive management: Goals, performance, buy-in. *Leadership & Organization Development Journal*, 28(5), 388–408; Edmonstone, J. (2013). Healthcare leadership: Learning from evaluation. *Leadership in Health Services*, 26(2), 148–158; Hartley, J., & Hinksman, B. (2003). *Leadership development: A systematic literature review. A report for the NHS Leadership Centre* (pp. 1–77). Warwick Institute of Governance and Public Management; Kim, S. (2007). Learning goal orientation, formal mentoring, and leadership competence in HRD: A conceptual model. *Journal of European Industrial Training*, 31(3), 181–194. <https://doi.org/10.1108/03090590710739269>; Leskiw, S., & Singh, P. (2007). Leadership development: Learning from best practices. *Leadership & Organization Development Journal*, 28(5), 444–464. <https://doi.org/10.1108/01437730710761742>; Miller, D. L., Umble, K. E., Frederick, S. L., & Dinkin, D. R. (2007). Linking learning methods to outcomes in public health leadership development. *Leadership in Health Services*, 20(2), 97–123; Pradarelli, J. C., Jaffe, G. A., Lemak, C. H., Mulholland, M. W., & Dimick, J. B. (2016). Designing a leadership development program for surgeons. *Journal of Surgical Research*, 200(1), 53–58. <https://doi.org/10.1016/j.jss.2015.08.002>

<sup>74</sup> Hartley, J., & Hinksman, B. (2003). *Leadership development: A systematic literature review. A report for the NHS Leadership Centre* (pp. 1–77). Warwick Institute of Governance and Public Management; Hawley, J. D., & Barnard, J. K. (2005). Work environment characteristics and implications for training transfer: A case study of the nuclear power industry. *Human Resource Development International*, 8(1), 65–80; Noe, R. A., & Colquitt, J. A. (2002). Planning for training impact: Principles of training effectiveness. In K. Kraiger (Ed.), *Creating, implementing, and managing effective training and development: State-of-the-art lessons from practice* (pp. 53–79). Jossey-Bass.

<sup>75</sup> Korschun, H. W., Redding, D., Teal, G. L., & Johns, M. M. E. (2007). Realizing the vision of leadership development in an academic health center: The Woodruff Leadership Academy. *Academic Medicine*, 82(3), 264–271. <https://doi.org/10.1097/ACM.0b013e31803078b5>; Kuo, A. K., Thyne, S. M., Chen, H. C., West, D. C., & Kamei, R. K. (2010). An innovative

---

residency program designed to develop leaders to improve the health of children. *Academic Medicine*, 85(10), 1603–1608; Leskiw, S., & Singh, P. (2007). Leadership development: Learning from best practices. *Leadership & Organization Development Journal*, 28(5), 444–464. <https://doi.org/10.1108/01437730710761742>

<sup>76</sup> Dickson, G., & Tholl, B. (2020). Learning LEADS: developing leadership in individuals and organizations. In G. Dickson & B. Tholl (Eds.), *Bringing leadership to life in health: LEADS in a Caring Environment* (Second). Springer.

<sup>77</sup> Bergman, D., Fransson-Sellgren, S., Wahlstrom, R., & Sandahl, C. (2009). Impact of short-term intensive and long-term less intensive training programmes. *Leadership in Health Services*, 22(2), 161–75; Blumenthal, D. M., Bernard, K., Fraser, T. N., Bohnen, J., Zeidman, J., & Stone, V. E. (2014). Implementing a pilot leadership course for internal medicine residents: Design considerations, participant impressions, and lessons learned. *BMC Medical Education*, 14(257), 1–11; Dale, E. (1969). *Audio-visual methods in teaching* (3rd ed.). The Dryden Press; Edmonstone, J. (2009). Evaluating clinical leadership: A case study. *Leadership in Health Services*, 22(3), 210–224; Lacerenza, C. N., Reyes, D. L., Marlow, S. L., Joseph, D. L., & Salas, E. (2017). Leadership training design, delivery, and implementation: A meta-analysis. *Journal of Applied Psychology*, 102(12), 1686–1718. <https://doi.org/10.1037/apl0000241>; Leskiw, S., & Singh, P. (2007). Leadership development: Learning from best practices. *Leadership & Organization Development Journal*, 28(5), 444–464. <https://doi.org/10.1108/01437730710761742>; McCauley, C. D. (2008). *Leader development: A review of research*. Center for Creative Leadership; McGurk, P. (2010). Outcomes of management and leadership development. *Journal of Management Development*, 29(5), 457–470; Miller, D. L., Umble, K. E., Frederick, S. L., & Dinkin, D. R. (2007). Linking learning methods to outcomes in public health leadership development. *Leadership in Health Services*, 20(2), 97–123; Salas, E., Tannenbaum, S. I., Kraiger, K., & Smith-Jentsch, K. A. (2012). The science of training and development in organizations: What matters in practice. *Psychological Science in the Public Interest*, 13, 74–101; Ten Have, E. C. M., Nap, R. E., & Tulleken, J. E. (2013). Quality improvement of interdisciplinary rounds by leadership training based on essential quality indicators of the Interdisciplinary Rounds Assessment Scale. *Intensive Care Medicine*, 39(10), 1800–1807. <https://doi.org/10.1007/s00134-013-3002-0>

<sup>78</sup> Amagoh, F. (2009). Leadership development and leadership effectiveness. *Management Decision*, 47(6), 989–999; Beer, M., Finnström, M., & Schrader, D. (2016). Why leadership training fails—And what to do about it. *Harvard Business Review*, 94(10), 50–57; Edmonstone, J. (2009). Evaluating clinical leadership: A case study. *Leadership in Health Services*, 22(3), 210–224; Leslie, L. K., Miotto, M. B., Liu, G. C., Ziemnik, S., Cabrera, A. G., Calma, S., Huang, C., & Slaw, K. (2005). Training young pediatricians as leaders for the 21st century. *Pediatrics*, 115(3), 765–773; McCauley, C. D. (2008). *Leader development: A review of research*. Center for Creative Leadership; Satiani, B., Sena, J., Ruberg, R., & Ellison, E. C. (2014). Talent management and physician leadership training is essential for preparing tomorrow’s physician leaders. *Journal of Vascular Surgery*, 59(2), 542–546.

---

<https://doi.org/10.1016/j.jvs.2013.10.074>; Steinert, Y., Naismith, L., & Mann, K. (2012). Faculty development initiatives designed to promote leadership in medical education. A BEME systematic review: BEME guide no. 19. *The International Journal of Medical Technology*, 34(6), 483–503. <https://doi.org/doi: 10.3109/0142159X.2012.680937>

<sup>79</sup> Avolio, B. J., Avey, J. B., & Quisenberry, D. (2010). Estimating return on leadership development investment. *The Leadership Quarterly*, 21(4), 633–644; Brown, T. C., McCracken, M., & Hillier, T.-L. (2013). Using evidence-based practices to enhance transfer of training: Assessing the effectiveness of goal setting and behavioral observation scales. *Human Resource Development International*, 16(4), 374–389; Johnson, S. K., Garrison, L. L., Hernez-Broome, G., Fleenor, J. W., & Steed, J. L. (2012). Go for the goal(s): Relationship between goal setting and transfer of training following leadership development. *Academy of Management Learning & Education*, 11(4), 555–569. <https://doi.org/10.5465/amle.2010.0149>; Latham, G. P., & Locke, E. A. (1983). Goal setting—A motivational technique that works. In J. R. Hackman, E. E. Lawlor, & L. W. Porter (Eds.), *Perspectives on Behavior in Organizations* (pp. 296–304). McGraw Hill; Maurer, T. J. (2002). Employee learning and development orientation: Toward an integrative model of involvement in continuous learning. *Human Resource Development Review*, 1, 9–44; Salas, E., Tannenbaum, S. I., Kraiger, K., & Smith-Jentsch, K. A. (2012). The science of training and development in organizations: What matters in practice. *Psychological Science in the Public Interest*, 13, 74–101.

<sup>80</sup> Richman-Hirsh, W. L. (2001). Posttraining interventions to enhance transfer: The moderating effects of work environments. *Human Resource Development Quarterly*, 12(2), 105–120.

<sup>81</sup> Edmonstone, J. (2009). Evaluating clinical leadership: A case study. *Leadership in Health Services*, 22(3), 210–224; Edmonstone, J. (2011). The development of strategic clinical leaders in the National Health Service in Scotland. *Leadership in Health Services*, 24(4), 337–353; Hartley, J., & Hinksman, B. (2003). *Leadership development: A systematic literature review. A report for the NHS Leadership Centre* (pp. 1–77). Warwick Institute of Governance and Public Management; McCauley, C. D. (2008). *Leader development: A review of research*. Center for Creative Leadership; Noe, R. A., & Colquitt, J. A. (2002). Planning for training impact: Principles of training effectiveness. In K. Kraiger (Ed.), *Creating, implementing, and managing effective training and development: State-of-the-art lessons from practice* (pp. 53–79). Jossey-Bass; Phillips, P. P., Phillips, J. J., & Ray, R. (2015). *Measuring the success of leadership development*. ATD Press. <https://roiinstitute.net/books-resources/all/measuring-the-success-of-leadership-development/>

Steinert, Y., Naismith, L., & Mann, K. (2012). Faculty development initiatives designed to promote leadership in medical education. A BEME systematic review: BEME guide no. 19. *The International Journal of Medical Technology*, 34(6), 483–503. <https://doi.org/doi: 10.3109/0142159X.2012.680937>

<sup>82</sup> Burke, L. A., & Hutchins, H. M. (2007). Training transfer: An integrative literature review. *Human Resource Development Review*, 6(3), 263–296; Noe, R. A., & Colquitt, J. A. (2002). Planning for training impact: Principles of training effectiveness. In K. Kraiger (Ed.), *Creating, implementing, and managing effective training and development: State-of-the-art*

---

- 
- lessons from practice (pp. 53–79). Jossey-Bass; Phillips, P. P., Phillips, J. J., & Ray, R. (2015). *Measuring the success of leadership development*. ATD Press.  
<https://roiinstitute.net/books-resources/all/measuring-the-success-of-leadership-development>;
- Salas, E., Tannenbaum, S. I., Kraiger, K., & Smith-Jentsch, K. A. (2012). The science of training and development in organizations: What matters in practice. *Psychological Science in the Public Interest*, *13*, 74–101.
- <sup>83</sup> Locke, E. A., & Latham, G. P. (1990). *A theory of goal setting and task performance*. Prentice Hall.
- <sup>84</sup> Knowles, M. S. (1981). *The modern practice of adult education: From pedagogy to andragogy* (Revised and Updated). Prentice Hall Regents; Merriam, S., & Brockett, R. (1997). *The profession and practice of adult education: An introduction*. Jossey-Bass.
- <sup>85</sup> Dickson, G., & Tholl, B. (2020). Learning LEADS: developing leadership in individuals and organizations. In G. Dickson & B. Tholl (Eds.), *Bringing leadership to life in health: LEADS in a Caring Environment* (Second). Springer.
- <sup>86</sup> Blumenthal, D. M., Bernard, K., Fraser, T. N., Bohnen, J., Zeidman, J., & Stone, V. E. (2014). Implementing a pilot leadership course for internal medicine residents: Design considerations, participant impressions, and lessons learned. *BMC Medical Education*, *14*(257), 1–11; Geerts, J. M. (2018). *Optimal leadership development for professionals* [Unpublished doctoral thesis]. University of Cambridge; Gilpin-Jackson, Y., & Bushe, G. R. (2007). Leadership development training transfer: A case study of post-training determinants. *Journal of Management Development*, *26*(10), 980–1004; Kolb, D. A. (1984). *Experiential learning: Experience as the source of learning and development*. Prentice Hall; Van Aerde, J. (2013). *Physician leadership development* (pp. 1–101). Alberta Health Services.  
<https://www.albertahealthservices.ca/assets/info/hp/phys/if-hp-phys-physician-leadership-development-report.pdf>
- <sup>87</sup> Latham, G. P., & Locke, E. A. (1983). Goal setting—A motivational technique that works. In J. R. Hackman, E. E. Lawlor, & L. W. Porter (Eds.), *Perspectives on Behavior in Organizations* (pp. 296–304). McGraw Hill; Salas, E., Tannenbaum, S. I., Kraiger, K., & Smith-Jentsch, K. A. (2012). The science of training and development in organizations: What matters in practice. *Psychological Science in the Public Interest*, *13*, 74–101.
- <sup>88</sup> Brock, G. W., McManus, D. J., & Hale, J. E. (2009). Reflections today prevent failures tomorrow. *Communications of the ACM*, *52*, 140–144; Hughes, A. M., Zajac, S., Spencer, J. M., & Salas, E. (2018). A checklist for facilitating training transfer in organizations. *International Journal of Training and Development*, *22*(4), 334–345.  
<https://doi.org/10.1111/ijtd.12141>; Lacerenza, C. N., Reyes, D. L., Marlow, S. L., Joseph, D. L., & Salas, E. (2017). Leadership training design, delivery, and implementation: A meta-analysis. *Journal of Applied Psychology*, *102*(12), 1686–1718.  
<https://doi.org/10.1037/apl0000241>; Maurer, T. J. (2002). Employee learning and development orientation: Toward an integrative model of involvement in continuous learning. *Human Resource Development Review*, *1*, 9–44; Noe, R. A., & Colquitt, J. A. (2002). Planning for training impact: Principles of training effectiveness. In K. Kraiger (Ed.), *Creating, implementing, and managing effective training and development: State-of-the-art*
-



---

Reflections today prevent failures tomorrow. *Communications of the ACM*, 52, 140–144; Salas, E., Tannenbaum, S. I., Kraiger, K., & Smith-Jentsch, K. A. (2012). The science of training and development in organizations: What matters in practice. *Psychological Science in the Public Interest*, 13, 74–101.

<sup>95</sup> DeRue, D. S., & Wellman, N. (2009). Developing leaders via experience: The role of developmental challenge, learning orientation, and feedback availability. *The Journal of Applied Psychology*, 94(4), 859–875. <https://doi.org/10.1037/a0015317>; Goleman, D., Boyatzis, R. E., & McKee, A. (2002). *Primal leadership: Realizing the power of emotional intelligence*. Harvard Business School Press; Vimr, M., & Dickens, P. (2013). Building physician capacity for transformational leadership-Revisited. *Healthcare Management Forum*, 26(1), 16–19. <https://doi.org/10.1016/j.hcmf.2013.01.003>

<sup>96</sup> Watkins, K. E., Lysø, I. H., & deMarras, K. (2011). Evaluating executive leadership programmes: A theory of change approach. *Advances in Developing Human Resources*, 13(2), 208–239.

<sup>97</sup> Keith, N., & Frese, M. (2008). Effectiveness of error management training: A meta-analysis. *Journal of Applied Psychology*, 2008, 59–69; Lorenzet, S. J., Salas, E., & Tannenbaum, S. I. (2005). To err is human: The impact of guided errors on learning, performance, and self-efficacy. *Human Resource Development Quarterly*, 16, 301–322.

<sup>98</sup> Blume, B. D., Ford, J. K., Baldwin, T. T., & Huang, J. L. (2010). Training transfer: A meta-analytic review. *Journal of Management*, 38(4), 1065–1105; Phillips, P. P., Phillips, J. J., & Ray, R. (2015). *Measuring the success of leadership development*. ATD Press.

<https://roiinstitute.net/books-resources/all/measuring-the-success-of-leadership-development/>; Steinert, Y., Naismith, L., & Mann, K. (2012). Faculty development initiatives designed to promote leadership in medical education. A BEME systematic review: BEME guide no. 19. *The International Journal of Medical Technology*, 34(6), 483–503.

<https://doi.org/doi:10.3109/0142159X.2012.680937>; Watkins, K. E., Lysø, I. H., & deMarras, K. (2011). Evaluating executive leadership programs: A theory of change approach. *Advances in Developing Human Resources*, 13(2), 208–239.

<sup>99</sup> Alimo-Metcalfe, B., & Lawlor, J. (2001). Leadership development in UK companies at the beginning of the twenty-first century: Lessons for the NHS? *Journal of Management in Medicine*, 15(5), 387–404; Geerts, J. M. (2018). *Optimal leadership development for professionals* [Unpublished doctoral thesis]. University of Cambridge; Kellerman, B. (2012). *The end of leadership*. Harper Collins.

<sup>100</sup> Straus, S. E., Soobiah, C., & Levinson, W. (2013). The impact of leadership training programs on physicians in Academic Medical Centers: A systematic review. *Academic Medicine*, 88(5), 1–15; Avolio, B. J. (2005). *Leadership development in balance: Made/born*. Psychology Press.

<sup>101</sup> Locke, E. A., & Latham, G. P. (1990). *A theory of goal setting and task performance*. Prentice Hall; Phillips, P. P., Phillips, J. J., & Ray, R. (2015). *Measuring the success of leadership development*. ATD Press. <https://roiinstitute.net/books-resources/all/measuring-the-success-of-leadership-development/>

- 
- <sup>102</sup> Geerts, J. M. (2020). Optimising leadership development: A framework for maximising the application of learning [Working paper].
- <sup>103</sup> Geerts, J. M. (2018). *Optimal leadership development for professionals* [Unpublished doctoral thesis]. University of Cambridge; Geerts, J. M., Goodall, A. H., & Agius, S. (2020). Evidence-based leadership development for physicians: A systematic literature review. *Social Science & Medicine*, 246, 1–17. <https://doi.org/10.1016/j.socscimed.2019.112709>
- <sup>104</sup> Geerts, J. M., Goodall, A. H., & Agius, S. (2020). Evidence-based leadership development for physicians: A systematic literature review. *Social Science & Medicine*, 246, 1–17. <https://doi.org/10.1016/j.socscimed.2019.112709>
- <sup>105</sup> Saks, A. M., & Belcourt, M. (2006). An investigation of training activities and transfer of training in organizations. *Human Resource Management*, 45, 629–648; Salas, E., Tannenbaum, S. I., Kraiger, K., & Smith-Jentsch, K. A. (2012). The science of training and development in organizations: What matters in practice. *Psychological Science in the Public Interest*, 13, 74–101.
- <sup>106</sup> Beer, M., Finnström, M., & Schrader, D. (2016). Why leadership training fails—And what to do about it. *Harvard Business Review*, 94(10), 50–57; Burke, L. A., & Hutchins, H. M. (2007). Training transfer: An integrative literature review. *Human Resource Development Review*, 6(3), 263–296; Leskiw, S., & Singh, P. (2007). Leadership development: Learning from best practices. *Leadership & Organization Development Journal*, 28(5), 444–464. <https://doi.org/10.1108/01437730710761742>; Phillips, P. P., Phillips, J. J., & Ray, R. (2015). *Measuring the success of leadership development*. ATD Press. <https://roiinstitute.net/books-resources/all/measuring-the-success-of-leadership-development>; Salas, E., Tannenbaum, S. I., Kraiger, K., & Smith-Jentsch, K. A. (2012). The science of training and development in organizations: What matters in practice. *Psychological Science in the Public Interest*, 13, 74–101.
- <sup>107</sup> Edmonstone, J. (2009). Evaluating clinical leadership: A case study. *Leadership in Health Services*, 22(3), 210–224; Edmonstone, J. (2011). The development of strategic clinical leaders in the National Health Service in Scotland. *Leadership in Health Services*, 24(4), 337–353; Hartley, J., & Hinksman, B. (2003). *Leadership development: A systematic literature review. A report for the NHS Leadership Centre* (pp. 1–77). Warwick Institute of Governance and Public Management; McCauley, C. D. (2008). *Leader development: A review of research*. Center for Creative Leadership; Noe, R. A., & Colquitt, J. A. (2002). Planning for training impact: Principles of training effectiveness. In K. Kraiger (Ed.), *Creating, implementing, and managing effective training and development: State-of-the-art lessons from practice* (pp. 53–79). Jossey-Bass; Phillips, P. P., Phillips, J. J., & Ray, R. (2015). *Measuring the success of leadership development*. ATD Press. <https://roiinstitute.net/books-resources/all/measuring-the-success-of-leadership-development>; Steinert, Y., Naismith, L., & Mann, K. (2012). Faculty development initiatives designed to promote leadership in medical education. A BEME systematic review: BEME guide no. 19. *The International Journal of Medical Technology*, 34(6), 483–503. <https://doi.org/doi:10.3109/0142159X.2012.680937>

- 
- <sup>108</sup> Dickson, G., & Tholl, B. (2020). Learning LEADS: developing leadership in individuals and organizations. In G. Dickson & B. Tholl (Eds.), *Bringing leadership to life in health: LEADS in a Caring Environment* (Second). Springer.
- <sup>109</sup> Hughes, A. M., Zajac, S., Spencer, J. M., & Salas, E. (2018). A checklist for facilitating training transfer in organizations. *International Journal of Training and Development*, 22(4), 334–345. <https://doi.org/10.1111/ijtd.12141>
- <sup>110</sup> Hargreaves, A., & Fink, D. (2008). Distributed leadership: Democracy or delivery? *Journal of Educational Administration*, 46(2), 229–240. <https://doi.org/10.1108/09578230810863280>; Harris, A. (2008). Distributed leadership: According to the evidence. *Journal of Educational Administration*, 46, 172–188. <http://dx.doi.org/10.1108/09578230810863253>
- <sup>111</sup> Dickson, G., & Tholl, B. (2020). Learning LEADS: developing leadership in individuals and organizations. In G. Dickson & B. Tholl (Eds.), *Bringing leadership to life in health: LEADS in a Caring Environment* (Second). Springer.
- <sup>112</sup> Salas, E., Tannenbaum, S. I., Kraiger, K., & Smith-Jentsch, K. A. (2012). The science of training and development in organizations: What matters in practice. *Psychological Science in the Public Interest*, 13, 74–101.
- <sup>113</sup> Hamlin, B. (2010). Evidence-based leadership and management development. In J. Gold, R. Thorpe, & A. Mumford (Eds.), *Gower handbook of leadership and management development* (5th ed., pp. 197–220). Gower; Klimoski, R., & Amos, B. (2012). Practicing evidence-based education in leadership development. *Academy of Management Learning & Education*, 11(4), 685–702. <https://doi.org/10.5465/amle.2012.0018>; Rousseau, D. M. (2006). Is there such a thing as ‘evidence-based management’? *Academy of Management Review*, 31(2), 256–269; Salas, E., Tannenbaum, S. I., Kraiger, K., & Smith-Jentsch, K. A. (2012). The science of training and development in organizations: What matters in practice. *Psychological Science in the Public Interest*, 13, 74–101.
- <sup>114</sup> Alliger, G. M., Tannenbaum, S. I., Bennett, W. Jr., Traver, H., & Shotland, A. (1997). A meta-analysis of the relations among training criteria. *Personnel Psychology*, 50(2), 341–358; Dale, E. (1969). *Audio-visual methods in teaching* (3rd ed.). The Dryden Press; Dickson, G., & Tholl, B. (2020). Learning LEADS: developing leadership in individuals and organizations. In G. Dickson & B. Tholl (Eds.), *Bringing leadership to life in health: LEADS in a Caring Environment* (Second). Springer; Facticeau, J. D., Dobbins, G. H., Russell, J. E. A., Ladd, R. T., & Kudisch, J. D. (1995). The influence of general perceptions of the training environment on pretraining motivation and perceived training transfer. *Journal of Management*, 21(1), 1–25; Holton III, E. E., Bates, R. A., & Ruona, W. E. A. (2000). Development of a generalized learning transfer system inventory. *Human Resource Development Quarterly*, 11(4), 333–360; Knowles, M. S. (1984). *Andragogy in action*. Jossey-Bass; Lieberman, S., & Hoffmann, S. (2008). The impact of practical relevance on training transfer: Evidence from a service quality training program for German bank clerks. *International Journal of Training and Development*, 12(2), 74–86; Noe, R. A., & Colquitt, J. A. (2002). Planning for training impact: Principles of training effectiveness. In K. Kraiger (Ed.), *Creating, implementing, and managing effective training and development: State-of-*
-

---

the-art lessons from practice (pp. 53–79). Jossey-Bass; Salas, E., Tannenbaum, S. I., Kraiger, K., & Smith-Jentsch, K. A. (2012). The science of training and development in organizations: What matters in practice. *Psychological Science in the Public Interest*, 13, 74–101; van der Locht, M., van Dam, K., & Chiaburu, D. S. (2013). Getting the most of management training: The role of identical elements for training transfer. *Personnel Review*, 42(4), 422–439.

<sup>115</sup> Bearman, M., O'Brien, R., Anthony, A., Civil, I., Flanagan, B., Jolly, B., Birks, D., Langcake, M., Molloy, E., & Nestel, D. (2012). Learning surgical communication, leadership and teamwork through simulation. *Journal of Surgical Education*, 69(2), 201–207; Rowland, D. (2016). Why leadership development isn't developing leaders. *Harvard Business Review*, 1–5; Salas, E., Tannenbaum, S. I., Kraiger, K., & Smith-Jentsch, K. A. (2012). The science of training and development in organizations: What matters in practice. *Psychological Science in the Public Interest*, 13, 74–101; van der Locht, M., van Dam, K., & Chiaburu, D. S. (2013). Getting the most of management training: The role of identical elements for training transfer. *Personnel Review*, 42(4), 422–439.

<sup>116</sup> Berman, E. M., Bowman, J. S., West, J. P., & Wart, M. V. (2010). *Human resource management in public service: Paradoxes, processes, and problems* (3rd ed.). Sage; Edmonstone, J. (2009). Evaluating clinical leadership: A case study. *Leadership in Health Services*, 22(3), 210–224; Freire, P. (2007). *Pedagogy of the oppressed* (30th Anniversary). Continuum; Holton III, E. F., Swanson, R. A., & Naquin, S. S. (2001). Andragogy in practice: Clarifying the Andragogical Model of adult learning. *Performance Improvement Quarterly*, 14(1), 118–143; Knowles, M. S. (1984). *Andragogy in action*. Jossey-Bass; Knowles, M. S. (1990). *The adult learner: A neglected species* (4th ed.). Gulf Publishing; Pradarelli, J. C., Jaffe, G. A., Lemak, C. H., Mulholland, M. W., & Dimick, J. B. (2016). Designing a leadership development program for surgeons. *Journal of Surgical Research*, 200(1), 53–58. <https://doi.org/10.1016/j.jss.2015.08.002>

<sup>117</sup> Knowles, M. S. (1981). *The modern practice of adult education: From pedagogy to andragogy* (Revised and Updated). Prentice Hall Regents; Merriam, S., & Brockett, R. (1997). *The profession and practice of adult education: An introduction*. Jossey-Bass.

<sup>118</sup> Knowles, M. S. (1984). *Andragogy in action*. Jossey-Bass.

<sup>119</sup> Fernandez, C. S. P., Noble, C. C., Jensen, E. T., & Chapin, J. (2016). Improving leadership skills in physicians: A 6-month retrospective study. *Journal of Leadership Studies*, 9(4), 6–19; Hamlin, B. (2010). Evidence-based leadership and management development. In J. Gold, R. Thorpe, & A. Mumford (Eds.), *Gower handbook of leadership and management development* (5th ed., pp. 197–220). Gower; Klimoski, R., & Amos, B. (2012). Practicing evidence-based education in leadership development. *Academy of Management Learning & Education*, 11(4), 685–702. <https://doi.org/10.5465/amle.2012.0018>; Rousseau, D. M. (2006). Is there such a thing as 'evidence-based management'? *Academy of Management Review*, 31(2), 256–269; Salas, E., Tannenbaum, S. I., Kraiger, K., & Smith-Jentsch, K. A. (2012). The science of training and development in organizations: What matters in practice. *Psychological Science in the Public Interest*, 13, 74–101.

<sup>120</sup> Ileri, S., Walshe, K., Benson, L., & Mwanthi, M. A. (2011). A qualitative and quantitative study of medical leadership and management: Experiences, competencies, and development

---

needs of doctor managers in the United Kingdom. *Journal of Management & Marketing in Healthcare*, 4(1), 16–29; Leslie, L. K., Miotto, M. B., Liu, G. C., Ziemnik, S., Cabrera, A. G., Calma, S., Huang, C., & Slaw, K. (2005). Training young pediatricians as leaders for the 21st century. *Pediatrics*, 115(3), 765–773; Martins, H. M. G. (2010). Why management and leadership education for internists? *European Journal of Internal Medicine*, 21, 374–376; Satiani, B., Sena, J., Ruberg, R., & Ellison, E. C. (2014). Talent management and physician leadership training is essential for preparing tomorrow’s physician leaders. *Journal of Vascular Surgery*, 59(2), 542–546. <https://doi.org/10.1016/j.jvs.2013.10.074>

<sup>121</sup> Bearman, M., O’Brien, R., Anthony, A., Civil, I., Flanagan, B., Jolly, B., Birks, D., Langcake, M., Molloy, E., & Nestel, D. (2012). Learning surgical communication, leadership and teamwork through simulation. *Journal of Surgical Education*, 69(2), 201–207; Bruppacher, H. R., Alam, S. K., LeBlanc, V. R., Latter, D., Naik, V. N., Savoldelli, G. L., Mazer, C. D., Kurrek, M. M., & Joo, H. S. (2010). Simulation-based training improves physicians’ performance in patient care in high-stakes clinical setting of cardiac surgery. *Anesthesiology*, 112(4), 985–992. <https://doi.org/10.1097/ALN.0b013e3181d3e31c>; Geerts, J. M. (2018). Optimal leadership development for professionals [Unpublished doctoral thesis]. University of Cambridge; Gilpin-Jackson, Y., & Bushe, G. R. (2007). Leadership development training transfer: A case study of post-training determinants. *Journal of Management Development*, 26(10), 980–1004; Kolb, D. A. (1984). *Experiential learning: Experience as the source of learning and development*. Prentice Hall; Lacerenza, C. N., Reyes, D. L., Marlow, S. L., Joseph, D. L., & Salas, E. (2017). Leadership training design, delivery, and implementation: A meta-analysis. *Journal of Applied Psychology*, 102(12), 1686–1718. <https://doi.org/10.1037/apl0000241>; Libin, A., Lauderdale, M., Millo, Y., Shamloo, C., Spencer, R., Green, B., Donnellan, J., Wellesley, C., & Groah, S. (2010). Role-playing simulation as an educational tool for health care personnel: Developing an embedded assessment framework. *Cyberpsychology Behavior and Social Networking*, 13(2), 217–224. <https://doi.org/10.1089/cyber.2009.0040>; Nakanjako, D., Namagala, E., Semeere, A., Kigozi, J., Sempa, J., Ddamulira, J. B., Katamba, A., Biraro, S., Naikoba, S., Mashalla, Y., Farquhar, C., & Sewankambo, N. (2015). Global health leadership training in resource-limited settings: A collaborative approach by academic institutions and local health care programs in Uganda. *Human Resources for Health*, 13(1), 87. <https://doi.org/10.1186/s12960-015-0087-2>; Piaget, J. (1952). *The origin of intelligence in children*. Norton; Raelin, J. A. (2011). From leadership-as-practice to leaderful practice. *Leadership*, 7(2), 195–211; Rosen, M. A., Salas, E., Wu, T. S., Silvestri, S., Lazzara, E. H., Lyons, R., Weaver, S. J., & King, H. B. (2008). Promoting teamwork: An event-based approach to simulation-based teamwork training for emergency medicine residents. *Academic Emergency Medicine*, 15(11), 1190–1198. <https://doi.org/10.1111/j.1553-2712.2008.00180.x>; Rowland, D. (2016). Why leadership development isn’t developing leaders. *Harvard Business Review*, 1–5; Salas, E., Tannenbaum, S. I., Kraiger, K., & Smith-Jentsch, K. A. (2012). The science of training and development in organizations: What matters in practice. *Psychological Science in the Public Interest*, 13, 74–101; Shapiro, M. J., Gardner, R., Godwin, S. A., Jay, G. D., Lindquist, D. G., Salisbury, M. L., & Salas, E. (2008). Defining team performance for simulation-based

---

training: Methodology, metrics, and opportunities for emergency medicine. *Academic Emergency Medicine*, 15(11), 1088–1097. <https://doi.org/10.1111/j.1553-2712.2008.00251.x>; Taylor, P. J., Russ-Eft, D. F., & Taylor, H. (2009). Transfer of management training from alternative perspectives. *Journal of Applied Psychology*, 94, 104–121; van der Locht, M., van Dam, K., & Chiaburu, D. S. (2013). Getting the most of management training: The role of identical elements for training transfer. *Personnel Review*, 42(4), 422–439; Weaver, S. J., Dy, S. M., & Rosen, M. A. (2014). Team-training in healthcare: A narrative synthesis of the literature. *British Medical Journal Quality and Safety*, 23, 359–372.

<sup>122</sup> Day, D. V. (2001). Leadership development: A review in context. *Leadership Quarterly*, 11(4), 581–613; Edmonstone, J. (2011). The development of strategic clinical leaders in the National Health Service in Scotland. *Leadership in Health Services*, 24(4), 337–353; Geerts, J. M., Goodall, A. H., & Agius, S. (2020). Evidence-based leadership development for physicians: A systematic literature review. *Social Science & Medicine*, 246, 1–17. <https://doi.org/10.1016/j.socscimed.2019.112709>; Lacerenza, C. N., Reyes, D. L., Marlow, S. L., Joseph, D. L., & Salas, E. (2017). Leadership training design, delivery, and implementation: A meta-analysis. *Journal of Applied Psychology*, 102(12), 1686–1718. <https://doi.org/10.1037/apl0000241>; Nakanjako, D., Namagala, E., Semeere, A., Kigozi, J., Sempa, J., Ddamulira, J. B., Katamba, A., Biraro, S., Naikoba, S., Mashalla, Y., Farquhar, C., & Sewankambo, N. (2015). Global health leadership training in resource-limited settings: A collaborative approach by academic institutions and local health care programs in Uganda. *Human Resources for Health*, 13(1), 87. <https://doi.org/10.1186/s12960-015-0087-2>; Raelin, J. A. (2011). From leadership-as-practice to leaderful practice. *Leadership*, 7(2), 195–211; Salas, E., Tannenbaum, S. I., Kraiger, K., & Smith-Jentsch, K. A. (2012). The science of training and development in organizations: What matters in practice. *Psychological Science in the Public Interest*, 13, 74–101.

<sup>123</sup> Day, D. V. (2001). Leadership development: A review in context. *Leadership Quarterly*, 11(4), 581–613; Geerts, J. M., Goodall, A. H., & Agius, S. (2020). Evidence-based leadership development for physicians: A systematic literature review. *Social Science & Medicine*, 246, 1–17. <https://doi.org/10.1016/j.socscimed.2019.112709>; Kuo, A. K., Thyne, S. M., Chen, H. C., West, D. C., & Kamei, R. K. (2010). An innovative residency program designed to develop leaders to improve the health of children. *Academic Medicine*, 85(10), 1603–1608; MacPhail, A., Young, C., & Ibrahim, J. E. (2015). Workplace-based clinical leadership training increases willingness to lead. *Leadership in Health Services*, 28(2), 100–118; May, G. L., & Kahnweiler, W. M. (2000). The effect of mastery practice design on learning and transfer in behavior modelling training. *Personnel Psychology*, 53, 353–373; Mountford, J., & Webb, C. (2009). When clinicians lead. *McKinsey Quarterly*, February, 1–8; Nakanjako, D., Namagala, E., Semeere, A., Kigozi, J., Sempa, J., Ddamulira, J. B., Katamba, A., Biraro, S., Naikoba, S., Mashalla, Y., Farquhar, C., & Sewankambo, N. (2015). Global health leadership training in resource-limited settings: A collaborative approach by academic institutions and local health care programs in Uganda. *Human Resources for Health*, 13(1), 87. <https://doi.org/10.1186/s12960-015-0087-2>; Patel, N., Brennan, P. J., Metlay, J., Bellini, L., Shannon, R. P., & Myers, J. S. (2015). Building the pipeline: The creation of a residency

---

training pathway for future physician leaders in health care quality. *Journal of the Association of American Medical Colleges*, 90(2), 185–190.

<https://doi.org/10.1097/ACM.0000000000000546>; Revans, R. (1980). Action learning. Blond and Briggs; Watkins, K. E., Lysø, I. H., & deMarrais, K. (2011). Evaluating executive leadership programmes: A theory of change approach. *Advances in Developing Human Resources*, 13(2), 208–239.

<sup>124</sup> Blume, B. D., Ford, J. K., Baldwin, T. T., & Huang, J. L. (2010). Training transfer: A meta-analytic review. *Journal of Management*, 38(4), 1065–1105; Chiaburu, D. S., & Lindsay, D. R. (2008). Can do or will do? The importance of self-efficacy and instrumentality for training transfer. *Human Resource Development International*, 11(2), 199–206; Chiaburu, D. S., Van Dam, K., & Hutchins, H. M. (2010). Social support in the workplace and training transfer: A longitudinal analysis. *International Journal of Selection and Assessment*, 18(2), 187–200; DeRue, D. S., Nahrgang, J. D., Hollenbeck, J. R., & Workman, K. (2012). A quasi-experimental study of after-event reviews and leadership development. *The Journal of Applied Psychology*, 97(5), 997–1015. <https://doi.org/10.1037/a0028244>; Fecteau, J. D., Dobbins, G. H., Russell, J. E. A., Ladd, R. T., & Kudisch, J. D. (1995). The influence of general perceptions of the training environment on pretraining motivation and perceived training transfer. *Journal of Management*, 21(1), 1–25; Fisher, S. L., & Ford, J. K. (1998). Differential effects of learner effort and goal orientation on two learning outcomes. *Personnel Psychology*, 51(2), 397–420; Hassan, R. A., Fuwad, B. A., & Rauf, A. I. (2010). Pre-training motivation and the effectiveness of transformational leadership training: An experiment. *Academy of Strategic Management Journal*, 9(2), 1–8; Knowles, M. S. (1984). *Andragogy in action*. Jossey-Bass; Payne, S. C., Youngcourt, S. S., & Beaubien, J. M. (2007). A meta-analytic examination of the goal orientation nomological net. *Journal of Applied Psychology*, 92(1), 128–150; Silver, L. S., Dwyer, S., & Alford, B. (2006). Learning and performance goal orientation of salespeople revisited: The role of performance-approach and performance-avoidance orientations. *Journal of Personal Selling and Sales Management*, 36(1), 27–38; Suutari, V., & Viitala, R. (2008). Management development of senior executives: Methods and their effectiveness. *Personnel Review*, 37(4), 375–392; van der Locht, M., van Dam, K., & Chiaburu, D. S. (2013). Getting the most of management training: The role of identical elements for training transfer. *Personnel Review*, 42(4), 422–439.

<sup>125</sup> DeRue, D. S., Nahrgang, J. D., Hollenbeck, J. R., & Workman, K. (2012). A quasi-experimental study of after-event reviews and leadership development. *The Journal of Applied Psychology*, 97(5), 997–1015. <https://doi.org/10.1037/a0028244>; Suutari, V., & Viitala, R. (2008). Management development of senior executives: Methods and their effectiveness. *Personnel Review*, 37(4), 375–392.

<sup>126</sup> Burke, L. A., & Hutchins, H. M. (2007). Training transfer: An integrative literature review. *Human Resource Development Review*, 6(3), 263–296; Lieberman, S., & Hoffmann, S. (2008). The impact of practical relevance on training transfer: Evidence from a service quality training program for German bank clerks. *International Journal of Training and Development*, 12(2), 74–86; van der Locht, M., van Dam, K., & Chiaburu, D. S. (2013). Getting the most of management training: The role of identical elements for training transfer.

---

Personnel Review, 42(4), 422–439.

<sup>127</sup> Knowles, M. S. (1990). *The adult learner: A neglected species* (4th ed.). Gulf Publishing; Petriglieri, G., Wood, J. D., & Petriglieri, J. L. (2011). Up close and personal: Building foundations for leaders' development through the personalization of management learning. *Academy of Management Learning & Education*, 10(3), 430–450; Saks, A. M., & Belcourt, M. (2006). An investigation of training activities and transfer of training in organizations. *Human Resource Management*, 45, 629–648; Salas, E., Tannenbaum, S. I., Kraiger, K., & Smith-Jentsch, K. A. (2012). The science of training and development in organizations: What matters in practice. *Psychological Science in the Public Interest*, 13, 74–101.

<sup>128</sup> Blume, B. D., Ford, J. K., Baldwin, T. T., & Huang, J. L. (2010). Training transfer: A meta-analytic review. *Journal of Management*, 38(4), 1065–1105; Burke, L. A., & Baldwin, T. T. (1999). Workforce training transfer: A study of the effect of relapse prevention training and transfer. *Human Resource Management*, 38(3), 227–243; Burke, L. A., & Hutchins, H. M. (2007). Training transfer: An integrative literature review. *Human Resource Development Review*, 6(3), 263–296; Culpin, V., Eichenberg, T., Hayward, I., & Abraham, P. (2014). Learning, intention to transfer and transfer in executive education. *International Journal of Training and Development*, 18(2), 132–147; Gilpin-Jackson, Y., & Bushe, G. R. (2007). Leadership development training transfer: A case study of post-training determinants. *Journal of Management Development*, 26(10), 980–1004; Salas, E., Tannenbaum, S. I., Kraiger, K., & Smith-Jentsch, K. A. (2012). The science of training and development in organizations: What matters in practice. *Psychological Science in the Public Interest*, 13, 74–101; Steinert, Y., Naismith, L., & Mann, K. (2012). Faculty development initiatives designed to promote leadership in medical education. A BEME systematic review: BEME guide no. 19. *The International Journal of Medical Technology*, 34(6), 483–503. <https://doi.org/doi:10.3109/0142159X.2012.680937>

<sup>129</sup> Alimo-Metcalfe, B., & Lawlor, J. (2001). Leadership development in UK companies at the beginning of the twenty-first century: Lessons for the NHS? *Journal of Management in Medicine*, 15(5), 387–404; Burke, L. A., & Hutchins, H. M. (2007). Training transfer: An integrative literature review. *Human Resource Development Review*, 6(3), 263–296; Gilpin-Jackson, Y., & Bushe, G. R. (2007). Leadership development training transfer: A case study of post-training determinants. *Journal of Management Development*, 26(10), 980–1004; Hartley, J., & Hinksman, B. (2003). *Leadership development: A systematic literature review. A report for the NHS Leadership Centre* (pp. 1–77). Warwick Institute of Governance and Public Management; Jeon, Y.-H., Simpson, J. M., Chenoweth, L., Cunich, M., & Kendig, H. (2013). The effectiveness of an aged care specific leadership and management program on workforce, work environment, and care quality outcomes: Design of a cluster randomised controlled trial. *Implementation Science*, 8, 126–136; Johnstal, S. P. (2013). Successful strategies for transfer of learned leadership. *Performance Improvement*, 52(7), 5–12; Klimoski, R., & Amos, B. (2012). Practicing evidence-based education in leadership development. *Academy of Management Learning & Education*, 11(4), 685–702. <https://doi.org/10.5465/amle.2012.0018>; Lim, D. H., & Johnson, S. D. (2002). Trainee perceptions of factors that influence learning transfer. *International Journal of Training and*

---

Development, 6(1), 36–48; McCauley, C. D. (2008). Leader development: A review of research. Center for Creative Leadership; Montesino, M. U. (2002). Strategic alignment of training, transfer—Enhancing behaviors, and training usage: A post-training study. *Human Resource Development Quarterly*, 13(1), 89–108; Phillips, P. P., Phillips, J. J., & Ray, R. (2015). Measuring the success of leadership development. ATD Press. <https://roiinstitute.net/books-resources/all/measuring-the-success-of-leadership-development>; Salas, E., Tannenbaum, S. I., Kraiger, K., & Smith-Jentsch, K. A. (2012). The science of training and development in organizations: What matters in practice. *Psychological Science in the Public Interest*, 13, 74–101.

<sup>130</sup> McCauley, C. D. (2008). Leader development: A review of research. Center for Creative Leadership; McGurk, P. (2010). Outcomes of management and leadership development. *Journal of Management Development*, 29(5), 457–470.

<sup>131</sup> Blumenthal, D. M., Bernard, K., Fraser, T. N., Bohnen, J., Zeidman, J., & Stone, V. E. (2014). Implementing a pilot leadership course for internal medicine residents: Design considerations, participant impressions, and lessons learned. *BMC Medical Education*, 14(257), 1–11; Burke, L. A., & Hutchins, H. M. (2007). Training transfer: An integrative literature review. *Human Resource Development Review*, 6(3), 263–296; Edmonstone, J. (2013). Healthcare leadership: Learning from evaluation. *Leadership in Health Services*, 26(2), 148–158; Salas, E., Tannenbaum, S. I., Kraiger, K., & Smith-Jentsch, K. A. (2012). The science of training and development in organizations: What matters in practice. *Psychological Science in the Public Interest*, 13, 74–101; Simmonds, D., & Tsui, O. (2010). Effective design of a global leadership programme. *Human Resource Development International*, 13(5), 519–540; Van Aerde, J. (2013). Physician leadership development (pp. 1–101). Alberta Health Services. <https://www.albertahealthservices.ca/assets/info/hp/phys/if-hp-phys-physician-leadership-development-report.pdf>

<sup>132</sup> Dalakoura, A. (2010). Examining the effects of leadership development on firm performance. *Journal of Leadership Studies*, 4(1), 59–70; Fernandez, C. S. P., Noble, C. C., Jensen, E. T., & Chapin, J. (2016). Improving leadership skills in physicians: A 6-month retrospective study. *Journal of Leadership Studies*, 9(4), 6–19; Gilpin-Jackson, Y., & Bushe, G. R. (2007). Leadership development training transfer: A case study of post-training determinants. *Journal of Management Development*, 26(10), 980–1004; Jeon, Y.-H., Simpson, J. M., Chenoweth, L., Cunich, M., & Kendig, H. (2013). The effectiveness of an aged care specific leadership and management program on workforce, work environment, and care quality outcomes: Design of a cluster randomised controlled trial. *Implementation Science*, 8, 126–136; Leskiw, S., & Singh, P. (2007). Leadership development: Learning from best practices. *Leadership & Organization Development Journal*, 28(5), 444–464. <https://doi.org/10.1108/01437730710761742>; Phillips, P. P., Phillips, J. J., & Ray, R. (2015). Measuring the success of leadership development. ATD Press. <https://roiinstitute.net/books-resources/all/measuring-the-success-of-leadership-development>; Salas, E., Tannenbaum, S. I., Kraiger, K., & Smith-Jentsch, K. A. (2012). The science of training and development in organizations: What matters in practice. *Psychological Science in the Public Interest*, 13, 74–101

---

<sup>133</sup> Alimo Metcalfe, B., & Alban Metcalfe, R. J. (2003). Stamp of greatness. *Health Service Journal*, 113(5861), 217–248; Gilpin-Jackson, Y., & Bushe, G. R. (2007). Leadership development training transfer: A case study of post-training determinants. *Journal of Management Development*, 26(10), 980–1004; Malling, B., Mortensen, L., Bonderup, T., Scherpbier, A., & Ringsted, C. (2009). Combining a leadership course and multi-source feedback has no effect on leadership skills of leaders in postgraduate medical education. An intervention study with a control group. *BMC Medical Education*, 9(72), 1–7; Rowland, D. (2016). Why leadership development isn't developing leaders. *Harvard Business Review*, 1–5.

<sup>134</sup> Alimo-Metcalfe, B., & Lawlor, J. (2001). Leadership development in UK companies at the beginning of the twenty-first century: Lessons for the NHS? *Journal of Management in Medicine*, 15(5), 387–404; Amagoh, F. (2009). Leadership development and leadership effectiveness. *Management Decision*, 47(6), 989–999.

<sup>135</sup> Blumenthal, D. M., Bernard, K., Fraser, T. N., Bohnen, J., Zeidman, J., & Stone, V. E. (2014). Implementing a pilot leadership course for internal medicine residents: Design considerations, participant impressions, and lessons learned. *BMC Medical Education*, 14(257), 1–11; Geerts, J. M. (2018). Optimal leadership development for professionals [Unpublished doctoral thesis]. University of Cambridge; Malling, B., Mortensen, L., Bonderup, T., Scherpbier, A., & Ringsted, C. (2009). Combining a leadership course and multi-source feedback has no effect on leadership skills of leaders in postgraduate medical education. An intervention study with a control group. *BMC Medical Education*, 9(72), 1–7; Straus, S. E., Soobiah, C., & Levinson, W. (2013). The impact of leadership training programs on physicians in Academic Medical Centers: A systematic review. *Academic Medicine*, 88(5), 1–15.

<sup>136</sup> Baldwin, T. T., & Ford, J. K. (1988). Transfer of training: A review and directions for future research. *Personnel Psychology*, 41, 63–105; Blume, B. D., Ford, J. K., Baldwin, T. T., & Huang, J. L. (2010). Training transfer: A meta-analytic review. *Journal of Management*, 38(4), 1065–1105; Geerts, J. M., Goodall, A. H., & Agius, S. (2020). Evidence-based leadership development for physicians: A systematic literature review. *Social Science & Medicine*, 246, 1–17. <https://doi.org/10.1016/j.socscimed.2019.112709>; Latham, G. P., & Locke, E. A. (1983). Goal setting—A motivational technique that works. In J. R. Hackman, E. E. Lawlor, & L. W. Porter (Eds.), *Perspectives on Behavior in Organizations* (pp. 296–304). McGraw Hill; Phillips, P. P., Phillips, J. J., & Ray, R. (2015). *Measuring the success of leadership development*. ATD Press. <https://roiinstitute.net/books-resources/all/measuring-the-success-of-leadership-development>

<sup>137</sup> Blumenthal, D. M., Bernard, K., Fraser, T. N., Bohnen, J., Zeidman, J., & Stone, V. E. (2014). Implementing a pilot leadership course for internal medicine residents: Design considerations, participant impressions, and lessons learned. *BMC Medical Education*, 14(257), 1–11; Geerts, J. M., Goodall, A. H., & Agius, S. (2020). Evidence-based leadership development for physicians: A systematic literature review. *Social Science & Medicine*, 246, 1–17. <https://doi.org/10.1016/j.socscimed.2019.112709>; Steinert, Y., Naismith, L., & Mann, K. (2012). *Faculty development initiatives designed to promote leadership in medical*

---

education. A BEME systematic review: BEME guide no. 19. *The International Journal of Medical Technology*, 34(6), 483–503. <https://doi.org/doi: 10.3109/0142159X.2012.680937>; Taylor, P. J., Russ-Eft, D. F., & Taylor, H. (2009). Transfer of management training from alternative perspectives. *Journal of Applied Psychology*, 94, 104–121; Tharenou, P., Saks, A. M., & Moore, C. (2007). A review and critique of research on training and organizational-level outcomes. *Human Resource Management Review*, 17(3), 251–273. <https://doi.org/10.1016/j.hrmr.2007.07.004>

<sup>138</sup> Latham, G. P., & Locke, E. A. (1983). Goal setting—A motivational technique that works. In J. R. Hackman, E. E. Lawlor, & L. W. Porter (Eds.), *Perspectives on Behavior in Organizations* (pp. 296–304). McGraw Hill; Watkins, K. E., Lysø, I. H., & deMarrais, K. (2011). Evaluating executive leadership programmes: A theory of change approach. *Advances in Developing Human Resources*, 13(2), 208–239.

<sup>139</sup> Alliger, G. M., Tannenbaum, S. I., Bennett, W. Jr., Traver, H., & Shotland, A. (1997). A meta-analysis of the relations among training criteria. *Personnel Psychology*, 50(2), 341–358; Facticeau, J. D., Dobbins, G. H., Russell, J. E. A., Ladd, R. T., & Kudisch, J. D. (1995). The influence of general perceptions of the training environment on pretraining motivation and perceived training transfer. *Journal of Management*, 21(1), 1–25; Holton III, E. E., Bates, R. A., & Ruona, W. E. A. (2000). Development of a generalized learning transfer system inventory. *Human Resource Development Quarterly*, 11(4), 333–360; Lim, D. H., & Morris, M. L. (2006). Influence of trainee characteristics, instructional satisfaction, and organizational climate on perceived learning and training transfer. *Human Resource Development Quarterly*, 17(1), 85–115; Phillips, P. P., Phillips, J. J., & Ray, R. (2015). *Measuring the success of leadership development*. ATD Press. <https://roinstitute.net/books-resources/all/measuring-the-success-of-leadership-development>; van der Locht, M., van Dam, K., & Chiaburu, D. S. (2013). Getting the most of management training: The role of identical elements for training transfer. *Personnel Review*, 42(4), 422–439

<sup>140</sup> Avolio, B. J., Avey, J. B., & Quisenberry, D. (2010). Estimating return on leadership development investment. *The Leadership Quarterly*, 21(4), 633–644; Baldwin, T. T., Magjuka, R. J., & Loher, B. T. (1991). The perils of participation: Effects of choice of training on training motivation and learning. *Personnel Psychology*, 44, 51–65; Brinkerhoff, R. O., & Montesino, M. U. (1995). Partnerships for training transfer: Lessons from a corporate study. *Human Resource Development Quarterly*, 6(3), 263–274; Burke, L. A., & Hutchins, H. M. (2007). Training transfer: An integrative literature review. *Human Resource Development Review*, 6(3), 263–296; Gilpin-Jackson, Y., & Bushe, G. R. (2007). Leadership development training transfer: A case study of post-training determinants. *Journal of Management Development*, 26(10), 980–1004; Hughes, A. M., Zajac, S., Spencer, J. M., & Salas, E. (2018). A checklist for facilitating training transfer in organizations. *International Journal of Training and Development*, 22(4), 334–345. <https://doi.org/10.1111/ijtd.12141>; Johnstal, S. P. (2013). Successful strategies for transfer of learned leadership. *Performance Improvement*, 52(7), 5–12; Kontoghiorghes, C. (2001). Factors affecting training effectiveness in the context of the introduction of new technology—A US case study. *International Journal of Training and Development*, 5, 248–260; Longnecker, C. O. (2004).

---

Maximising transfer of learning from management education programs: Best practices for retention and application. *Development and Learning in Organizations*, 18(4), 4–6.

<sup>141</sup> Amagoh, F. (2009). Leadership development and leadership effectiveness. *Management Decision*, 47(6), 989–999; McCauley, C. D. (2008). Leader development: A review of research. Center for Creative Leadership; Salas, E., Tannenbaum, S. I., Kraiger, K., & Smith-Jentsch, K. A. (2012). The science of training and development in organizations: What matters in practice. *Psychological Science in the Public Interest*, 13, 74–101.

<sup>142</sup> Cheng, E. W. L., & Hampson, I. (2008). Transfer of training: A review and new insights. *International Journal of Management Reviews*, 10(4), 327–341; Geerts, J. M. (2020). *Optimising leadership development: A framework for maximising the application of learning* [Working paper]; Mathieu, J. E., Tannenbaum, S. I., & Salas, E. (1992). Influences of individual and situational characteristics on measures of training effectiveness. *Academy of Management Journal*, 35, 882–847; Salas, E., Tannenbaum, S. I., Kraiger, K., & Smith-Jentsch, K. A. (2012). The science of training and development in organizations: What matters in practice. *Psychological Science in the Public Interest*, 13, 74–101.

<sup>143</sup> Allen, S. J., & Hartman, N. S. (2008). Leadership development: An exploration of sources of learning. *Sam Advanced Management Journal*, 26(Summer), 75–87; Geerts, J. M. (2020). *Optimising leadership development: A framework for maximising the application of learning* [Working paper]

<sup>144</sup> Car, L. T., Kyaw, B. M., & Atun, R. (2018). The role of eLearning in health management and leadership capacity building in health system: A systematic review. *Human Resources for Health*, 16, 44. <https://doi.org/10.1186/s12960-018-0305-9>

<sup>145</sup> Dugan, J. P. (2011). Pervasive myths in leadership development: unpacking constraints on leadership learning. *Journal of Leadership Studies*, 5(2), 79–84. <https://doi.org/10.1002/jls.20223>; Geerts, J. M. (2020). *Optimising leadership development: A framework for maximising the application of learning* [Working paper]