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## Strategic Program for Analyzing Complexity and Evaluating Systems (SPACES) Analysis of Albertina Sisulu Executive Leadership Programme in Health (ASELPH)

**2018**

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# Strategic Program for Analyzing Complexity and Evaluating Systems (SPACES) Analysis of Albertina Sisulu Executive Leadership Program in Health (ASELPH)

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From June 2018-November 2018, the Strategic Program for Analyzing Complexity and Evaluating Systems (SPACES) Consortium within the Monitoring, Evaluation, Research and Learning Innovations Program (MERLIN) implemented its suite of systems tools tailored to support ASELPH as it begins to identify how graduates may impact the South Africa Health System. The analysis also looks at the extent to which graduates of the ASELPH program networked with their peers on health system issues after the program's conclusion to gather further insight into ASELPH's role and potential impact in the health system.

## DISCLAIMER

The author's views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government.

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# ACRONYMS

ASELPH	Albertina Sisulu Executive Leadership Programme in Health
CEO	Chief Executive Officer
CFO	Chief Financial Officer
CLD	Causal Loop Diagram
DCST(s)	District Clinical Specialist Teams
FY	Fiscal Year
GDP	Gross Domestic Product
GKI	Global Knowledge Initiative
GOPC	Global Obesity Prevention Center
HIS	Health Information Systems
HR	Human Resources
HRH	Human Resource for Health
HRM	Human Resources Management
ICT	Information and Communications Technology
M&E	Monitoring and Evaluation
MEC	Members of the Executive Council
MEL	Monitoring, Evaluation, and Learning
MERL	Monitoring, Evaluation, Research and Learning
MERLIN	Monitoring, Evaluation, Research and Learning Innovations Program
NDoH	National Department of Health
NGO	Non-Governmental Organization
NHC/MIS	National Healthcare Management Information System
NHI	National Health Insurance
NMFCMC	Government of South Africa and the Republic of Cuba for the Nelson Mandela- Fidel Castro Medical Collaboration program
ODS	Occupation Specific Dispensation
OPD	Outpatient Department
SA	South Africa(n)
SCM	Supply Chain Management
SPACES	Strategic Program for Analyzing Complexity and Evaluation Systems
UHC	Universal Healthcare
USAID	United States Agency for International Development

# EXECUTIVE SUMMARY

## PURPOSE

The purpose of this project is to assist USAID South Africa and the ASELPH team such that they can understand, from a systems perspective, how the ASELPH Programme ultimately impacts the health system through its participants. In order to achieve this, the Strategic Program for Analyzing Complexity and Evaluating Systems (SPACES) Consortium conducted background research, in-person key informant interviews, and systems analysis in order to support both qualitative and quantitative systems assessments. In this report, SPACES provides findings and recommendations resulting from this systems approach.

## QUESTIONS

To what extent has the ASELPH program been effective in providing participants / students with skills that they have subsequently utilized on-the-job to positively impact South Africa's health system?

To what extent has the ASELPH program been successful in facilitating networks of leadership and information exchange among diverse locations and functions in the health system?

## METHODS & LIMITATIONS

For the qualitative systems approach, SPACES developed a casual loop diagram (CLD) with narrative descriptions of ASELPH's place in the South Africa Health System using literature reviews, key informant interviews in country, and qualitative coding using NVivo software. For the quantitative systems approach, SPACES conducted a Social Network Analysis (SNA) of ASELPH graduates using a web-based survey.

Limitations to these methods exist. As with all representations of complex systems, these maps and resulting analysis cannot include the entirety of the system. Time and resource constraints resulted in a focus on a single health system function in each interview and did not permit a full validation of the systems map, though instructions have been provided to support this effort by the ASELPH Programme, if desired. In order to maximize value in light of these limitations, SPACES has focused on the themes emerging from the data collected and ASELPH's position in the health system.

## FINDINGS & RECOMMENDATIONS

The causal loop diagram identifies where the ASELPH program may impact the health system and illustrates how management skills can have downstream impacts on the health system. Interviews with health system participants resulted in system-wide leverage points in the system including unequal distribution of health workers in rural areas, labor relation laws & labor unions, increased accountability measures, contract management with suppliers, strategic planning for budget allocation, and NHI Specific Recommendations. The recommendations resulting from the interviews with ASELPH graduates resulted in leverage points tied to skills promoted by the Programme, including use of technology, communication training and continued learning, the need for leadership at the facility level, and course offerings in the program. Strikingly, both internal and external interviewees' recommendations included mentorship.

Social Network Analysis found variation among the cohorts in terms of degree and method of communication, but themes emerged in the topics of network outreach. "Service Delivery Innovation" is the top subject of communication across four of the five cohorts (appearing second in the fifth cohort), and "Financial Management and Administration" is the least common topic of exchange between former ASELPH classmates across all five cohorts. The topics, methods of information exchange, and characteristics of more highly networked cohorts result in recommendations around how ASELPH might continue to connect prior cohorts and enhance networks of ASELPH graduates in the future.

# PURPOSE & QUESTIONS

## PURPOSE

The Strategic Program for Analyzing Complexity and Evaluating Systems (SPACES) Consortium is an initiative of the Monitoring, Evaluation, Research and Learning Innovations (MERLIN) Program through the U.S. Global Development Lab in partnership with the Bureau for Policy, Planning and Learning. SPACES aims to provide a variety of integrated systems tools and methodologies that deliver a comprehensive systems analysis to support decision making for maximized systemic impact. This approach to program design and implementation for USAID and its partners is an operational innovation championed and pioneered by USAID's Global Development Lab and being tested throughout Operating Units within the Agency.

In June 2017, the SPACES consortium spent two weeks in South Africa gaining deeper insight into the various components of the ASELPH Programme, as well as the broader South Africa Health System. The team spent the first half of the trip with stakeholders from Albertina Sisulu Executive Leadership Programme in Health (ASELPH) connected to the University of Pretoria, and the second half of the trip with ASELPH stakeholders connected to the University of Fort Hare. Both universities host and run the ASELPH program.

After receiving feedback on the scope of work from the ASELPH team as well as USAID South Africa, it was agreed that SPACES would focus their efforts on developing a systems map and a social network analysis to analyze ASELPH's impact within the South African Health System.

The systems map visually represents key actors, interactions, and resources across the health system. The Social Network Analysis will help understand the extent to which graduates of the ASELPH Programme networked with their peers on health systems issues after the program's conclusion. The systems map, in conjunction with the Social Network Analysis, will provide a more comprehensive picture of how ASELPH Fellows understand their position within the health system, the areas in which they are best positioned / most capable of enacting change, and the extent to which they draw on their ASELPH peer resources to do so.

The purpose of this project is to assist USAID South Africa and the ASELPH team such that they can understand, from a systems perspective, how the ASELPH Programme ultimately impacts the health system through its participants. SPACES will work with University of Pretoria, the University of Fort Hare, Harvard, and South Africa Partners to maximize use of available data. The SPACES Consortium will work together to review the available quantitative and qualitative data to map the impact of the ASELPH program on the fellows, the observed and assumed changes in the workplace, and the subsequent impact on the health system.

## QUESTIONS

- I. To what extent has the ASELPH program been effective in providing participants / students with skills that they have subsequently utilized on-the-job to positively impact South Africa's health system?
  - What are the skills that underpin the performance of the six core functions of the SA Health System?
  - Which of the skills you identified on (I) above are critical skills needed in the health sector that currently don't exist, or don't exist at scale?
  - What is ASELPH's contribution to the acquisition of the critical skills pertinent to the six core functions of the SA Health System?

2. To what extent has the ASELPH program been successful in facilitating networks of leadership and information exchange among diverse locations and functions in the health system?
  - What are the key issues / challenges that ASELPH graduates network and share related to?
  - How are graduates exchanging information, and what methods of exchange appear to be the most effective?
  - What are some of the classroom or individual attributes (e.g. classroom performance, job / function, group participation) that appear to influence on networking behavior subsequent to graduation?
  - Who are the key influencers in the network, the issues they are focused upon, and means of communication?

## METHODS & LIMITATIONS

### SYSTEMS MAPPING

Below are the following outputs derived for the systems mapping portion of this assessment:

- (1) A causal loop diagram (CLD)
- (2) Accompanying narrative descriptions of the South Africa Health System
- (3) Graphs pertaining to ASELPH's 14 Core Competencies
- (4) Recommendations for the ASELPH Programme and how ASELPH can play a role in larger systems changes
- (5) Steps regarding how to continue utilizing the maps

The above outputs were developed using a combination of literature reviews, key informant interviews, and qualitative coding using NVivo software. The qualitative section of the report is primarily based on the key informant interviews conducted, thus it predominately highlights the views of the interviewees.

### Research Design

#### *Literature Review*

The literature review involved collecting, organizing, analyzing, and synthesizing data gathered from various sources. Sources primarily fell into the following 4 categories: (1) South African Government-produced; (2) global development organization reports (such as WHO, UNICEF, etc.); (3) ASELPH focused reports; and (4) academic journals.

#### *Key-informant interviews*

From August 16, 2018 to August 31, 2018, SPACES conducted 47 semi-structured interviews in South Africa with key actors across the health system.

#### *Interview structure*

The semi-structured 1-1.5-hour individual interviews consisted of preset, open-ended questions supplemented with additional clarifying questions.<sup>1</sup> The interview protocol was informed by two preliminary phone interviews and literature reviews that took place prior to the SPACES team traveling to South Africa. Interviews were conducted by the same SPACES staff member and transcribed in real-time by another SPACES team member. When the transcriber was not available for real-time transcription, the interviews were recorded and transcribed at a later date. Interviews were conducted in-person when possible or otherwise conducted over the phone. The preset interview protocol aimed to answer the following central questions:

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<sup>1</sup>Preset Semi-structured Interview protocol can be found in Appendix E

- What are the skills that underpin performance of the six core functions of the South Africa Health System? The 6 functions include: (1) service delivery, (2) supply chain management, (3) finance, (4) monitoring & evaluation, (5) policy, and (6) human resource management.
- Which of the skills identified in question one are critical skills needed in the health sector that currently don't exist, or don't exist at scale?
- What is ASELPH's contribution to the acquisition of the critical skills referred to in question two pertinent to the six core functions of the SA Health System?

All interviewees answered the preset core questions, however, those interviewees associated with ASELPH, including faculty and fellows, were asked an additional set of questions in order to glean insights specific to the ASELPH Programme. In addition to these ASELPH specific interview questions, ASELPH Fellows were asked to complete a written questionnaire regarding the 14 ASELPH Core Competencies. This questionnaire asked the following two questions for each of the Core Competencies:

- In your opinion, did the ASELPH Programme adequately train you to better utilize this competency within your work?
- How often do you use this competency within your daily work?

#### *Interview site*

The interviews were conducted in 4 locations throughout South Africa; Johannesburg, Pretoria, East London, Nelspruit.

#### *Interview sampling*

The ASELPH teams at University of Pretoria and University of Fort Hare employed purposeful sampling to identify a diverse group of interviewees. The interviewees were selected based on the following criteria: (1) availability, (2) organization type, (3) location of work, (4) primary function of work, and (5) association with the ASELPH Programme. This diverse group of interviewees allowed the SPACES team to better understand the various functions and governance levels within the South Africa Health System.

Interviewees consisted of government employees working across various levels of government (National, Provincial, District), as well as private sector employees, and non-government employees. The geographic representation includes interviewees from 4 provinces: Gauteng (n=23), Eastern Cape (n=16), Limpopo (n=1), Mpumalanga (n=6), and not based in SA (n=1).

Interviewees were asked to speak to one function of the South Africa Health System. These functions were identified by modifying the World Health Organization (WHO)-devised building blocks for health systems to fit the prerequisites of the South Africa Health System.<sup>2</sup> Although most interviewees operate in multiple functions, we requested interviewees speak to one function to ensure that we could delve more deeply into diverging opinions and details of their role. However, in a few cases, interviewees could not decide on one function and therefore spoke to multiple functions. To understand how the South African Health System is viewed by ASELPH associates and non-ASELPH associates, interviewees included ASELPH fellows, ASELPH faculty, and non-ASELPH professionals working in the South Africa Health System. The following chart shows the intersection of the Interviewee's function and association with ASELPH.

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<sup>2</sup> WHO building blocks for health systems include: health governance, health financing, human resources for health (HRH), health service delivery, health information systems (HIS), and access to essential medicines. The blocks were modified to incorporate M&E, as accountability was highlighted as a key factor missing in the South Africa Health System.

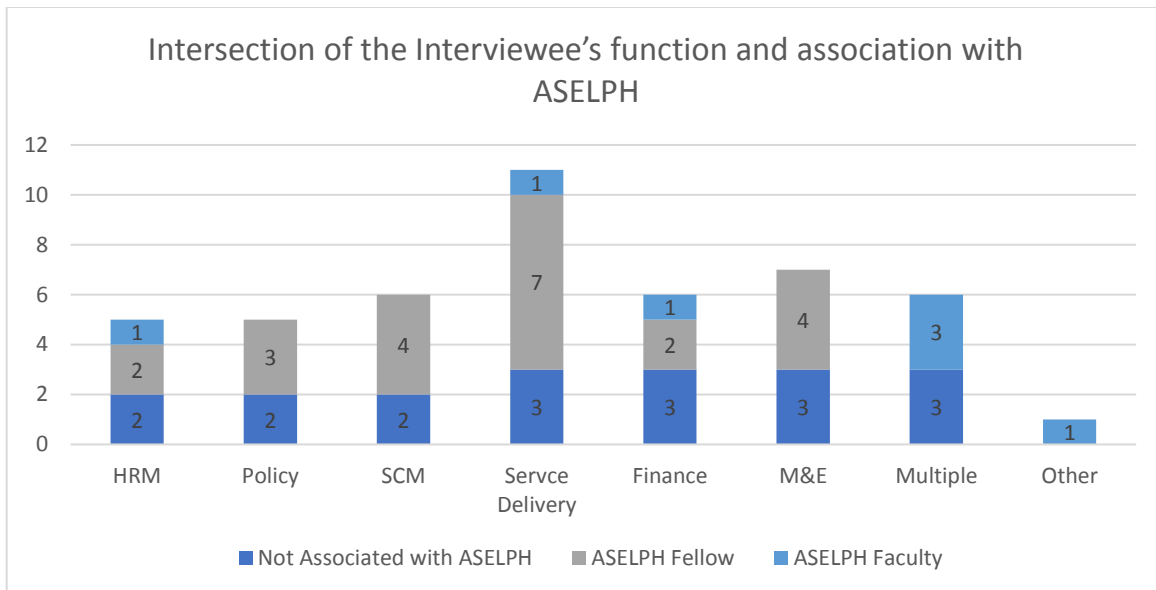


Figure 1: Intersection of the Interviewee's function and association with ASELPH

### Qualitative coding using NVivo

To codify, dissect, and comprehend the interviewee responses, SPACES completed qualitative data analysis using an adapted context analysis methodology. This methodology establishes inferences by interpreting and coding textual material. By systematically evaluating interview transcripts, the qualitative data can be converted into quantitative data. NVivo Software was utilized to complete this analysis. The analysis began by creating a codebook based on identified key themes. These key themes were each made into a “node” on the NVivo software. All references to a particular theme were coded under the same node. Coded data revealed top cited themes of the health system; which skills, according to interviewees, were missing or most needed in the South Africa Health system; and recommendations suggested by interviewees.

## Results

### Causal loop diagrams

Systems maps are useful for understanding the various components and relationships within a system. A causal loop diagram (CLD) is a type of systems map which primarily shows closed loop relations. This CLD consists of seven loops based on various themes. These loops contain a number of elements (represented by large circles, or nodes) which are short, descriptive phrases; their connections, represented by lines, or linkages; constraints on each connection, represented by direction and polarity; potential leverage points related to skills, represented as small purple dots; and interviewee-suggested recommendations, represented by a yellow ring around an element. By thinking through where best to place nodes and linkages, we are forced to consider the significance of different actors and relationships in the real system, and where ASELPH may be best primed to impact the South Africa Health System.

The initial prototype of the CLD was built by the SPACES team followed by several iterations with feedback from the ASELPH leadership team in South Africa and individuals from both Harvard and South Africa Partners. Each loop is data-driven, drawing information from literature and/or qualitative coding from key informant interviews. The loops are illustrated with nodes and linkages using the online platform Kumu.<sup>3</sup> These interactive maps are tagged with quotes and statistics taken either directly from the interviews or from the literature review. All nodes that hold additional data are represented by an outline (either dark blue, orange, or yellow). For example, if you click on the “start here” node—indicated by an orange outline—in the

<sup>3</sup> Kumu. <https://kumu.io/>

communication loop, you will find additional data stating, “the need to prioritize communication and collaboration at health facilities was mentioned by 60%(n=28) of interviewees across all 6 of the functions.” This additional data provides supplementary context to the node and the overall loop.

### *Narrative descriptions*

The narrative descriptions further explain the relationships visualized on the causal loop diagrams. Descriptions highlight specific relationships between variables by providing quotes and statistics from the key informant interviews and the literature review. When coupled, the systems map and narrative descriptions enable decision-makers to analyze how best to intervene in ever-changing complex systems.

### *Leverage Points*

Though not exhaustive, this report identifies 13 thematic groupings suggesting areas within the South Africa Health System ripe for change where the ASELPH Programme could play a significant role. These suggested leverage points (stemming from either interviews or the literature review) appear on the map in two forms: (1) yellow-outlined circles indicating further suggested action and (2) small purple nodes representing further details on specific skills needed. The conclusion section presents eight systems-wide leverage points for the entire South Africa Health System. We present these groupings of leverage points as guidance for the ASELPH team to consider how their Programme may impact the larger system. The recommendation section presents five groupings of leverage points that relate specifically to the ASELPH Programme. These recommendations highlight where revisions in the ASELPH Programme and curriculum could support change within the South Africa Health System.

### *Limitations*

This study has a number of limitations. First, although members of the SPACES team have no previous affiliation with ASELPH, the interviews were arranged by ASELPH faculty; therefore, it is possible that interviewees answered questions with consideration on how they might affect the ASELPH Programme. Second, the interview sample was selected through an opt-in method, thus potentially creating a selection bias toward those who found the Programme valuable and were more likely to respond to faculty requests to participate. Third, due to time constraints the information-gathering opportunity was limited. Interviewees were not asked an exhaustive list of questions, and the SPACES team often had to remove questions from the interview if significant time was spent on any one question. Additionally, based on availability and time constraints, interviewees were asked to speak to one function. Interviewees often held expertise in multiple functions and may have provided more nuanced or contradictory answers for different functions.

Fourth, one can never portray a complex system in its entirety. The CLD, narratives, and subsequent recommendations in this document cannot provide an exhaustive portrayal of the South Africa Health System due to two primary limitations: the limitations of the data collection method employed and the limitations of CLDs. Due to the limited time frame for data collection, 47 interviews were conducted while SPACES researchers were in South Africa. Thus, factors such as the variation in the locations represented and distinction of roles within the health system were restricted. For example, the SPACES team interviewed senior health professionals from four provinces, focusing primarily on the provinces where the ASELPH Programme’s partner universities are located (Gauteng and Eastern Cape). Additionally, only executive management professionals were interviewed, thus excluding patients and those professionals working at other levels of the health system.

CLDs have limitations which are primarily based on the visualization of the map. If a map shows an exhaustive number of connections, the map becomes incomprehensible. The CLD is a dynamic and iterative tool; therefore, if the members who created the map are the only ones capable of understanding the map, it is unhelpful. Thus, there is a need for intentionality behind which linkages are represented in the map. The intentionality of linkages allows the creator and viewer to consider the significance of each linkage rather than

being overwhelmed by all possible linkages. CLDs are focused on feedback loops, but these are not the only type of relationships in a system. Other types of system relationships not represented in this map include linear and logarithmic loops.

Additionally, the map and narratives have not been validated by all interviewees. Ideally, in a systems mapping exercise, a draft map is shown to all interviewees and/or various stakeholders working within the system and validated in a participatory manner. To ensure that all interviewees' insights are accounted for, CLD maps may be iterated upon multiple times. A workshop setting provides the interviewees with an open space for dialogue in which ideas can be converged upon. For this project, the process was truncated to meet the timeline and budgetary restraints. However, in an effort to obtain feedback on the causal loop diagram and accompanying narratives, the map was shared with members of the ASELPH team in a webinar format. Members were given time to observe and provide edits on the map and narratives. Although feedback from key ASELPH members was incorporated, elements and linkages between elements are not exhaustive and may benefit from broader validation and continued iteration. This report also includes recommendations on how members of the ASELPH leadership team could continue to engage with this map to support decision making going forward. Annex D provides detailed steps to holding a validation workshop, including guiding questions and future strategy considerations.

### **Reading a Systems Map**

The most basic part of a system map is an element – the labeled circles in the map. In the South Africa Health System Map, an element represents a factor that a network member identified in the interviews. These can also be thought of as variables that can change over time. (See Figure 2 below for an example.)

A direct connection – represented by an arrow – is a relationship from one element to another showing a direct influence. The point of the arrow running from Element A to Element B means that A influences or causes B. Two kinds of arrows represent connections. A solid arrow means the two elements or variables move in the same direction, in other words as Element A increases, Element B also increases, or as Element A decreases, Element B also decreases. A dashed arrow means that the two elements or variables move in opposite directions, in other words, as Element A increases, Element B decreases, or as Element A decreases, Element B increases. (See Figure 2 below for an example.)

An indirect (or second-degree) connection is a relationship between two elements that are connected through another element in a chain. One element influences the other indirectly, by first influencing the element between them. (See Figure 2 below for an example.)

When the chain of connections comes back to the element it started at, meaning that an element has an indirect influence on itself, this is a closed loop. (See Figure 2 below for an example.) These feedback loops are the core building blocks of the system map. Once assembled, the full system map has many closed loops of different sizes built within it (including loops that overlap with other loops connecting some of the same elements).

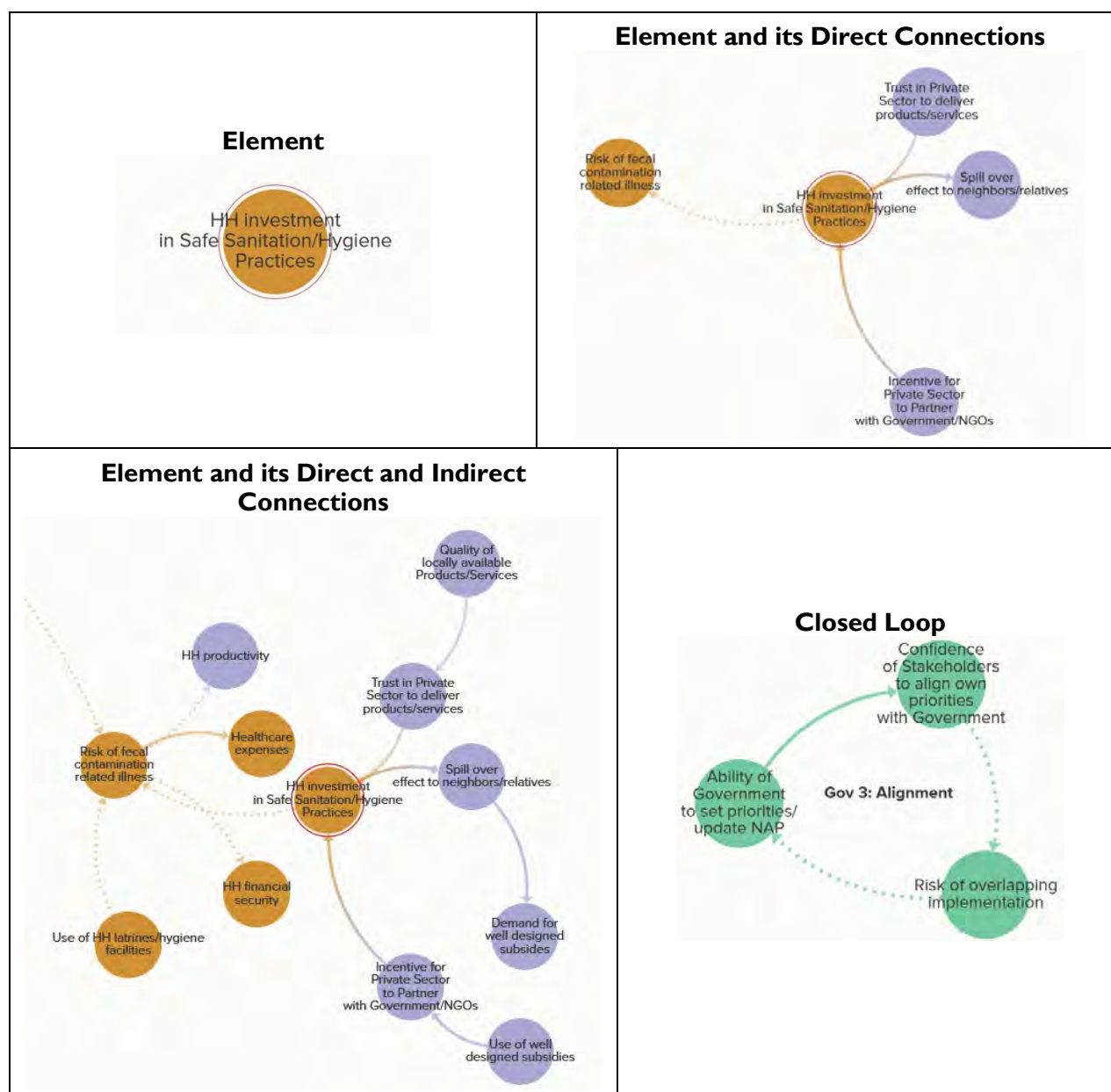


Figure 2: Example systems map pieces showing elements, connections and loops

## Glossary of Systems Map Terms

The following table contains a few key terms used in describing and explaining a Systems Map.

Term	Explanation
Element	A unique process, activity or piece of information that has an effect on other elements that it is connected to. The value or state of the element is usually dynamic, meaning it can change over time. Sometimes referred to as a variable.
Direct Connection	A link between two elements that describes how one directly influences or affects the other. These are also referred to as a first-degree connection.
Indirect Connection	A link between two elements with another element in between them in a chain where A influences B which in turn influences C. These are also referred to as a second-degree connection.

Direction	Connections can indicate that two elements move in the same direction (as one increases the other increases or as one decreases the other decreases), or in opposite directions (as one increases the other decreases or as one decreases the other increases).
Feedback Loop	The return of information (or consequences) through a series of activities or processes (or degrees or steps from element to element). A feedback loop indicates how an element indirectly (or directly) affects itself. A feedback loop effects an element by accelerating, balancing or diminishing its condition based on how it is connected to other elements of the system.
System Map	A diagram that shows a series of closed loops of cause-and-effect linkages which visualizes how elements of a system are connected to one another.

# SOCIAL NETWORK ANALYSIS

## Research Design

The SPACES team conducted Social Network Analyses (SNA) of ASELPH alumni and soon-to-be graduates (all but dissertation) from five cohorts at both University of Pretoria (three cohorts) and University of Fort Hare (two cohorts). The purpose of this approach was to measure how and the extent to which ASELPH helps graduates develop networks with other program participants and share information relevant to their roles in the South Africa health system. Each cohort was assessed separately.

The SNA data was collected through a survey instrument delivered remotely via SurveyMonkey to all fellows from each of the five ASELPH cohorts (see Annex G for full survey). Part one of the survey asked respondents about several individual attributes including general demographic information, as well as whether they have received a promotion since completing the program and whether they feel they have more professional resources as a result of the program. Part two of the survey asked respondents to select all former cohort members with whom they currently have a relationship. Respondents were then asked to identify a number of attributes for each relationship indicated including:

Basis of the relationship (prior relationship, small group, neither) – *select all that apply*

How they would characterize the relationship (informational, professional, personal) – *select all that apply*

The primary method of communication (email, phone call, SMS, face-to-face) – *select one*

Average frequency of communications (daily, weekly, monthly, annually) – *select one*

Value of the interactions (always, usually, sometimes, rarely, or never helpful) – *select one*

The primary topic they communicate about (financial management and administration; leadership and people management; planning and strategic management)<sup>4</sup> – *select one*

Other, more specific topics they communicate about (ASELPH core competencies) – *select all that apply*

Using this information, social network analysis evaluates network dynamics and relational patterns by deriving quantitative metrics from responses to part one (individual attributes) and part two (relationships and their attributes) of the survey. Actor-level metrics were calculated for each respondent to determine their position and connectedness within the network. These metrics include in-degree score (an actor's total number of incoming connections) and betweenness centrality (extent to which an actor is a bridge along the shortest path connecting two other actors). Network-level metrics were calculated to gain insight into the structure of the overall network. These metrics include density (proportion of existing ties to total possible ties), average in-degree score, and diameter (the greatest number of steps between any two actors in the network). Both types of metrics were evaluated at the sub-network<sup>5</sup> level, as well, to provide additional insights and units of comparison. A list of actor- and network-level metrics and what they mean can be found in the following section, "Reading a Network Report." The metrics were calculated and analyzed using a combination of Kumu – an online visualization platform – and Microsoft Excel.

## Limitations

### Response Rates

The survey was conducted remotely in order to accommodate time and budget restrictions, as well as logistical challenges associated with collecting in-person interviews with 202 ASELPH alumni across 10 provinces. Consequently – and in spite of several rounds of follow-up via email and WhatsApp – response rates averaged 63% from all five cohorts. The highest response rate from any cohort was 80% (UP Cohort 3) and the lowest

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<sup>4</sup> These three categories were determined by bucketing the ASELPH core competencies.

<sup>5</sup> Groupings of organizations based on pre-defined attributes like organization type (government, NGO, etc.), sector (Water, Sanitation or Hygiene) or subgroup membership

48% (UFH Cohort I). For this reason, only in-degree scores were used to analyze the number

University of Pretoria	University of Fort Hare
<b>Legend</b> — Leadership and People Management — Financial Management and Administration — Planning and Strategic Management ● Mpumalanga ● Limpopo ● Free State ● Gauteng ● Mpumalanga ● Northwest ● Eastern Cape ● Kwazulu Natal ● Northern Cape	<b>Legend</b> — Leadership and People Management — Financial Management and Administration — Planning and Strategic Management ● Mpumalanga ● Northern Cape ● Eastern Cape ● Kwazulu Natal ● Gauteng ● Western Cape

of connections for each actor, as out-degree and total degree scores would be skewed in favor of respondents.

### ASELPH Attribution

In an effort to understand some of the potential structural changes influenced by participation in ASELPH, the survey asked respondents whether any of their relationships with other fellows existed prior to the program. However, because no other baseline or periodic network analyses were conducted, there is a slightly lower degree of certainty in attributing network changes and exchanges to ASELPH. This may be particularly true for earlier cohorts that were graduated two or more years ago. For the two UFH cohorts, the network data could be used as a baseline and revisited in subsequent years to understand who is or is not still connected and how topics of communication may or may not have changed.

### Reading a Network Map

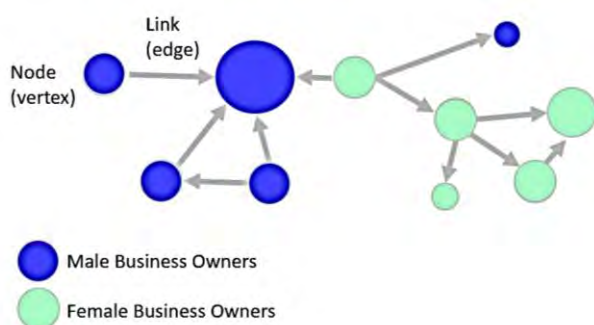


Figure 1: Example Network Map

Network maps displayed in this report show nodes – the circles in the map, which each represent an organization – and edges, the lines in the map that represent a connection between two actors. The size of nodes is based on the total number of connections (both out-ties, or connections named by the actor, and in-ties, or connections where the actor was named by another network actor). The maps are automatically generated by the web-based visualization platform, Kumu, using a standard layout algorithm. The position of nodes in a given map varies depending upon the purpose of the visualization and generally does not reflect distance of specific actors or groups from each other.

Ungrouped maps tend to position the largest nodes (those with the highest number of connections) at or near the center, while those with the fewest connections tend to be at the periphery. The coloring scheme for each of the nodes is based on the province the actor is based in. Edges are colored based on the primary topic of communication indicated for each. The colors for each can be seen in the legends below. (See Figure 3 above for an example network map.)

*Note: We do not suggest utilizing maps alone for interpretive purposes, especially those that are the largest and most complex. We suggest referencing the tables and metrics provided within, and annexed to, this report, when conducting in-depth analysis on specific actors. We further suggest that readers print out the “Reading a Network Map” section in color for ease of reference throughout the report.*

## Glossary of Network Metrics Terms

Explanatory definitions are provided here for the network metrics referenced throughout this report.

Table 1: Network Terms and Definitions

Metric	Explanation
<i>Network-Level Metrics</i>	
Size (# nodes)	The number of actors/organizations in a network or sub-network.
Ties (# of edges)	Number of reported connections among actors. In-degree ties are ties into a given node (named by others); out-degree ties are ties out from a given node (named by the actor). Whole number; can be average or total.
Density	The proportion of actual ties relative to all possible ties in a network (or sub-network).
Average Distance	The average steps required for any two actors in a network to reach one another.
Diameter	The maximum steps required for any two actors in a network to reach one another.
Average Degree	The average number of ties of actors in the network.
Reciprocity	The extent to which directed relationships are reciprocated (reported in both directions, meaning both actors reported the relationship).
<i>Actor-Level Metrics</i>	
Degree Centrality	A measure of the number of unique ties a given actor has. Serves as an indication of importance/significance of an actor for the network. This can be separated into in-degree centrality (for incoming ties) and out-degree (for outgoing ties) for directed relationships.
Betweenness Centrality	The extent to which a node acts as a bridge along the shortest path between two other nodes. These actors are often influential as either brokers or bottlenecks for collaboration.

# FINDINGS

## Processes underpinning ASELPH graduates' potential impact to the health system

### Causal Loop Narratives

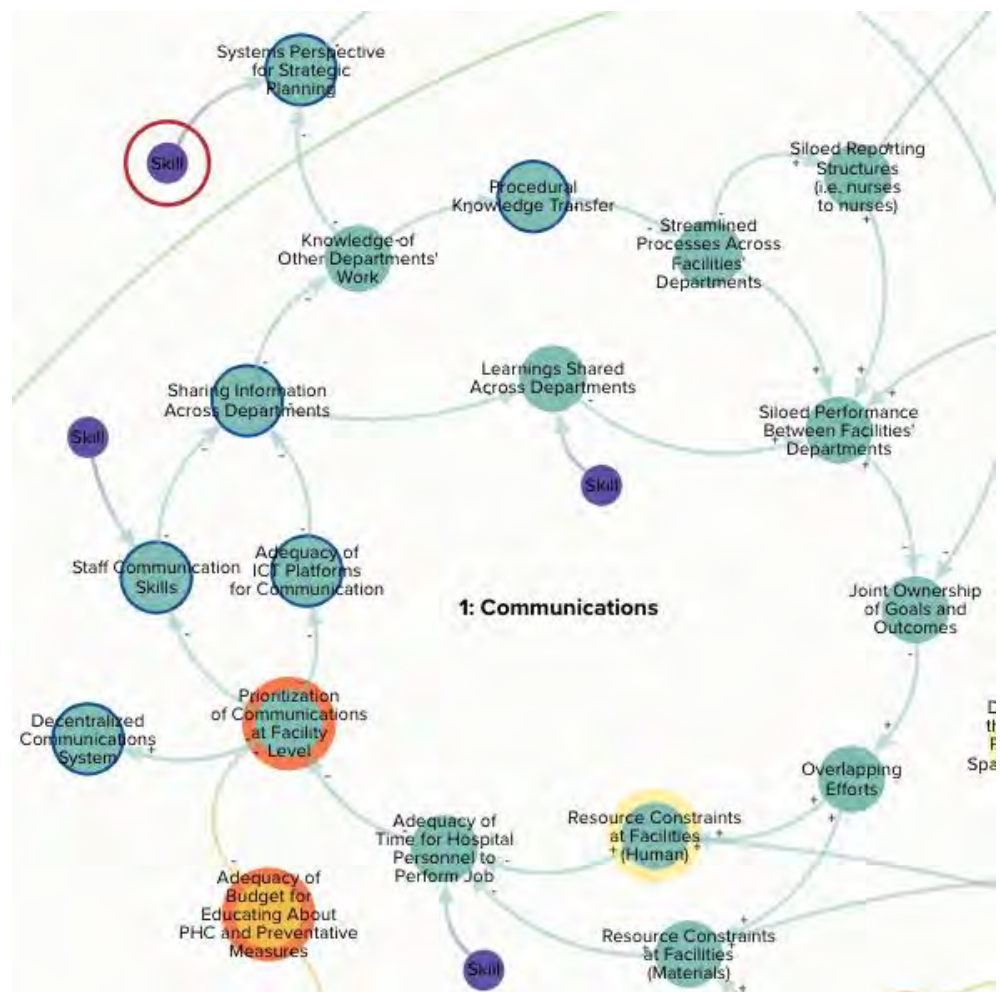
The map created by the Strategic Program for Analyzing Complexity and Evaluating Systems (SPACES) team details the intersection between critical executive leadership skills as identified by interviewees and core functions of the South Africa Health System. Throughout the research process, including 47 interviews conducted in South Africa, we identified common themes across health system functions that prevent critical skills from becoming embedded at scale among health professionals. Themes that were mentioned most frequently by interviewees and those pertaining to multiple functions are included in our systems map. These themes include:

- Communications
- Service Delivery
- Decision Making
- SCM and M&E
- Policy
- HR and Finance
- Education of Health Workers

The map explains how different variables in the system are interrelated and the consequences of specific behaviors and process patterns. The interaction between variables often creates a feedback system, referred to as a feedback loop. The series of feedback loops, often referred to as a causal loop diagram, should be reviewed alongside the narrative section of the report. Research suggests that individuals can recall information more effectively and with greater accuracy when presented with cognitive learning opportunities; thus, reading and visually engaging with the map will enable individuals to better process the information.<sup>6</sup> In addition, the map highlights many of the core competencies of the Albertina Sisulu Executive Leadership Programme in Health (ASELPH), suggesting where a health system intervention—known as a *leverage point*—may be most impactful.

### Teal: Communications at the Health Facility Level

Communications throughout the South Africa Health System is an extensively documented challenge. Since the decentralization of the National Healthcare Management Information System (NHC/MIS) in 1996, “health information systems in South Africa have been characterized by fragmentation and lack of coordination, prevalence of manual systems and lack of automation.”<sup>7</sup> In order to improve the state of communications and information systems in South Africa, the National Department of Health developed the eHealth Strategy for South Africa 2012-2016. This strategy provided the roadmap for the envisioned state of an integrated health information system. However, due to an inadequate implementation plan, the envisioned integration has not yet been reached as of 2018. As a result, information silos have developed, which may contribute to duplicated efforts and inconsistent reporting.<sup>8</sup>



<sup>6</sup> When less is more: Meaningful learning from visual and verbal summaries of science textbook lessons. Retrieved from: <http://psycnet.apa.org/buy/1996-01721-005>

<sup>7</sup> Republic of South Africa, Department of Health. (2012). *National eHealth Strategy for South Africa: 2012-2016*.

<sup>8</sup> Wright, G., O'Mahony, D., & Cilliers, L. (n.d.). Electronic health information systems for public health care in South Africa: A review of current operational systems. Retrieved October 17, 2018.

Communications challenges occur at all levels of the health system: at the federal level, within health facilities, and within community outreach efforts. The decentralized nature of the communications system within the health sector often requires each level of the government to establish its own communication protocols and manage its own Health Information System. In 2014, South Africa was found to have 42 different Health Information Systems (HIS) across its many provinces.<sup>9</sup> When facilities employ different HIS, the result is poor communication between facilities or with other levels of government through means of a unified communications system. One interviewee stated, “The communication system has been decentralized so there may be discrepancies between what the national [government] wants and what [the] provincial [government] is doing.” The need to prioritize communication and collaboration at health facilities was mentioned by 60% of interviewees across all 6 of the functions.

Many interviewees highlighted the difficulty of communicating between various departments at the facility level. Often, senior leadership’s knowledge of new policies, goals, and outcomes is not translated down to the all facilities’ staff. One interviewee stated the lack of a “one-stop center for communications” could be a contributing factor to this communications gap. Currently, there is not a system capable of disseminating information from the provincial department to all facilities’ personnel in an efficient manner. The inefficiency of the system presents the opportunity to neglect the role of translating policies, procedures, and routine updates to staff. If dissemination of information to all facility staff is not an easily completed task, there is a strong likelihood that staff will not prioritize communications due to time constraints.

Additionally, the insufficient emphasis of information sharing can result in increasingly fragmented communication and thus paltry procedural knowledge transfer among departments of the facility. Following a decrease in procedural knowledge, a reduction in streamlined processes occurs. One interviewee shared that when trying to communicate information such as policies to the facilities, “you must give [the information] to a facility manager and ask them to pass down the information to the facility. When you go to the facility and ask the nurses “where are the guidelines?” they do not know what guidelines you are talking about.” This interviewee, an ASELPH participant, was frustrated by the breakdown in communication. In order to increase accountability within communication feedback loops, she makes the managers at facilities sign a register when they have received new guidelines. She explained, “If they say they did not get [the guidelines] then I can go to my register and say they signed for the documents.” Thus, she is able to determine the source of the communication breakdown.

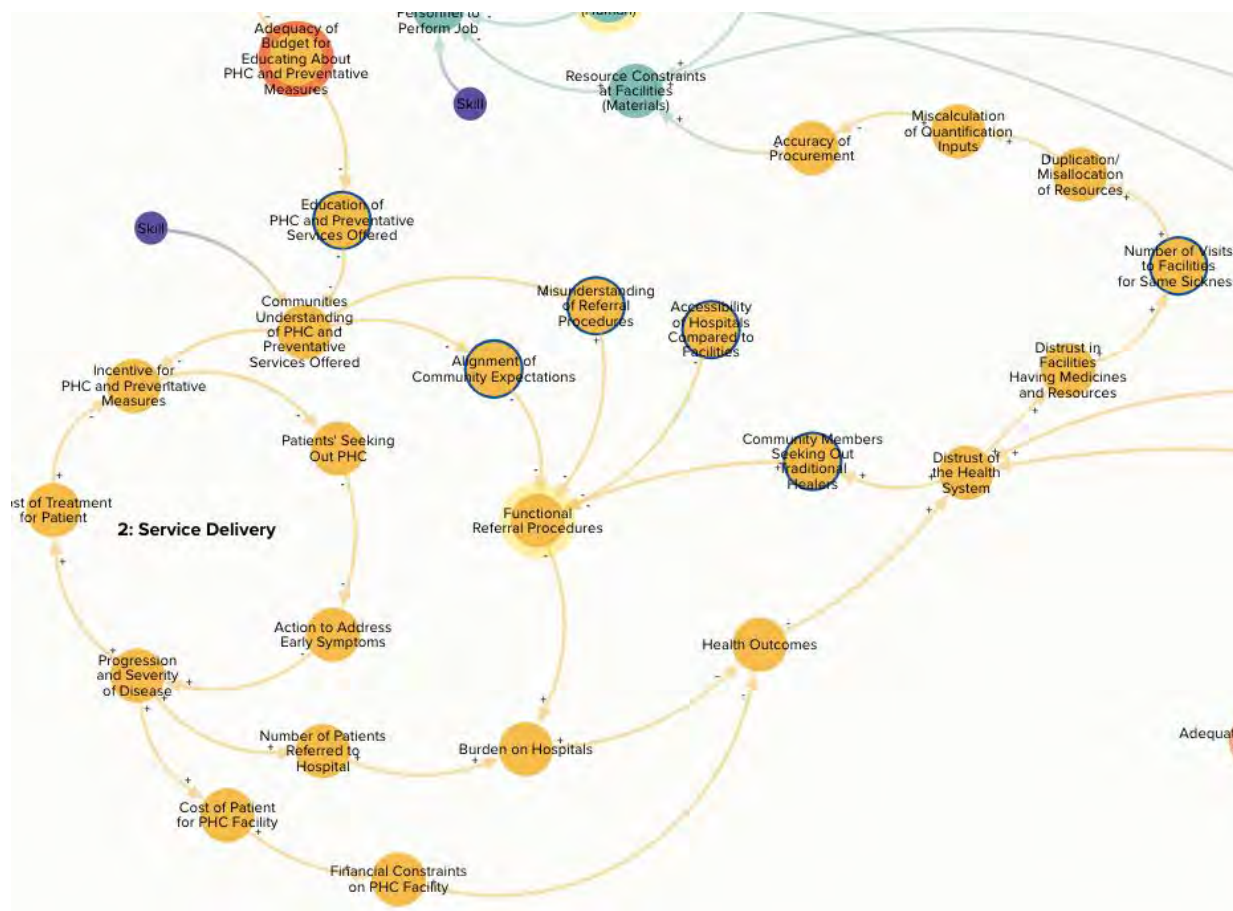
Poor communication can lead to a cascading set of challenges throughout the health system. When nurses and doctors are not aware of these guidelines, there is a short supply of streamlined processes across departments. Often, the result is disjointed ownership of the facility’s goals and outcomes as well as duplicated efforts that compound resource constraints. One interviewee shared the following sentiment: “The moment you start planning in silos, you are creating a shortage of resources. We are driving the shortage of resources. We are competing against each other so the programs are driving the HR problem.” When the resource shortage becomes entrenched, facility staff no longer have adequate time to perform their jobs because they have insufficient requisite materials and human resources needed to perform their jobs effectively. With a dearth of time and proper communication systems in place, communication with other departments and levels drops in priority.

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<sup>9</sup> South Africa, Department of Health & CSIR. (2013). *National Health Normative Standards Framework for Interoperability in eHealth in South Africa*(2nd ed.).

## Yellow: Service Delivery

With a reduction in the prioritization of communication outreach efforts, there is a decrease in patients' understanding of the various health services offered at each facility. This paucity of awareness often causes a misalignment of community expectations. For example, one interviewee explained "there is an extraordinarily high administration of injections. Not all patients require injections, but the expectation of a patient is that a good doctor will give you an injection and a bad doctor only gives you tabs." This is just one example of the



many ways expectations may be construed, resulting in misunderstandings. Due to these misunderstandings, patients bypass primary health care and go directly to district hospitals for preventative medicine. In a study completed at King Edward VIII Hospital in Durban, over 78% of patients were unreferrred and 49% of those unreferrred patients could have been managed in a primary healthcare (PHC) facility.<sup>10</sup> In another study completed at the Dr. J S Moroka Hospital in Thaba Nchu, 50% of patients in both the outpatient department (OPD) and casualty department were self-referred. More than half of those patients could have been managed at a PHC facility.<sup>11</sup> Other factors that may contribute to the bypassing of primary health care include accessibility via public transport or ambulatory services, primary health care hours of operations, and perception of superior care at hospitals.<sup>5</sup>

<sup>10</sup> Rutkove SB, Abdool Karim SS, Loening WEK. Patterns of care in an overburdened tertiary hospital outpatients department. *S Afr Med J* 1990;77:476-478.

<sup>11</sup> Mojaki, M. E., Basu, D., Letshokgohla, M. E., & Govender, M. (2011). Referral steps in district health system are side-stepped. *South African Medical Journal*, 101(2), 109. doi:10.7196/samj.4385

Patients bypassing primary health care and preventative measures leads to a dysfunctional referral system and creates a large strain on hospitals. This increased burden on hospitals can cause long wait times; a shortage of medicine in hospitals, often a result of an inability to predict supply needs and poor supplier performance; and a decrease in quality of care, which adversely affects health outcomes.<sup>12</sup> A decrease in health outcomes and quality of care generates distrust in the health system, which furthers the vicious cycle. With little trust in the health system, patients are less likely to follow referral procedures, and it may also prompt patients to seek out traditional healers. Traditional healers are not currently integrated into the health system; therefore, when a patient seeks out treatment from a traditional healer there is no record of the patient in the health system. If, after receiving treatment from a traditional healer, a patient chooses to seek out follow-on treatment in the health system, the patient may not receive appropriate follow-on care. Additionally, the patient will most likely not be referred correctly, thus, additional patients might go directly to a hospital, which adds to the constraints on hospitals.

Failure to communicate effectively with community members means that those communities often do not understand the importance of PHC and preventative measures. Coupled with insufficient incentive to seek out PHC, the resultant effect is delayed care. One interviewee shared:

*We need to think about preventative measures. Community Health Workers are the key because we cannot afford to have doctors and nurses treating everyone. And many health facilities are nurse-driven. But the community thinks they need to see a doctor so it is a community perception also. We need people on the ground to prevent disease. The biggest expense in the health system is HR.*

When PHC and preventative measures are not accessed, there may be a delay in addressing symptoms early, therefore causing a progression of disease severity. One interviewee who works at a regional hospital stated that “usually by the time [a patient] makes it to the regional hospital they come too late and they will die... but if we had screening for cervical cancer at the clinical level rather than coming to me [at the regional level] with a lesion” the patient would have a better likelihood of surviving. Increased disease severity and late diagnoses creates an increase cost of the patient to the hospital, thus adding financial stress on the South Africa Health System. An increase in disease severity also causes increased burden on hospitals because that patient may exhibit symptoms beyond what is treatable at the PHC level. Should patients stay in a PHC facility, the patient requires increased time and human resources.

#### *Orange: Decision Making*

The notion of centralization versus decentralization appeared as one of the top 5 barriers for the South Africa Health System identified by the interviewees. Thirty-two percent (n=15) of interviewees referenced centralization, with many referencing it multiple times. Currently, the South Africa Health System is partially decentralized; however, the majority of the decision-making power lies at the provincial level. A clear problem has emerged in the South Africa Health System around the centralization of decision-making. Endemic corruption, mismanaged budgets, and a plethora of skills gaps at all levels of the South Africa Health System make a strong case for a centralized decision-making body. And yet, with a more tightly controlled decision-making process, many challenges emerge: strict jurisdiction over who is able to make decisions leads to decisions made by individuals who may not have a complete understanding of the daily challenges a hospital or clinic faces. According to the 2014/15 South African Health Review, “Decentralization of health care services in

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<sup>12</sup> <https://www.health24.com/Medical/Meds-and-you/News/medication-shortage-at-gauteng-hospitals-and-clinics-20170619>

South Africa can make a phenomenal impact on the quality and access to much-needed health services for the most vulnerable populations, particularly women and children.”<sup>13</sup>

In a centralized system, management may feel as though they are unable to change anything important. Management often has all the skills to necessary to make appropriate decisions; however, if they are not able to exercise their decision-making ability, they may lose motivation. One interviewee shared the following sentiment: “The truth is that you are not going to get the leaders on the ground if they are going to work in a constrained environment. And to me that leadership is linked to the decentralization.” Many other factors may lead to demotivation and low job satisfaction; however, a significant contributing factor is related to the feeling that decision-making is reserved for the few who may not have full context of a given situation. The lack of motivation and job satisfaction of health professionals can have reverberating effects throughout the health system. Job satisfaction is related to motivation, which influences performance and staff turnover. Poor performance of health



professionals leads to inaccessibility of care, inappropriate care, and limited human resource capital because staff are underperforming. Staff turnover has a similar impact on the South Africa Health System, decreased workplace morale, increased workloads and responsibilities for remaining employees, loss of organization knowledge, and ultimately deteriorating service quality. A decrease in the quality of the services delivered compels the provincial level to withdraw trust in decision-makers at the facility and district level, resulting in the continued desire for decision making to be centralized.

A story that represents this vicious process was shared by an interviewee who was called to intervene in a fight between the hospital managers and the CEO of the hospital. In trying to understand why the doctors were feeling unmotivated, they found that the doctors cherished tea time; however, due to the centralized nature of budgeting, tea could not be provided by the hospital. This issue was then brought to the board of the hospital and one of the board members who is “the boss of the Nestlé factory in East London said ‘I didn’t know that

<sup>13</sup> Gray A, Vawda Y. Health Policy and Legislation. In: Padarath A, King J, English R, editors. South African Health Review 2014/15. Durban: Health Systems Trust; 2015.  
URL: <http://www.hst.org.za/publications/south-african-health-review-2014/15>

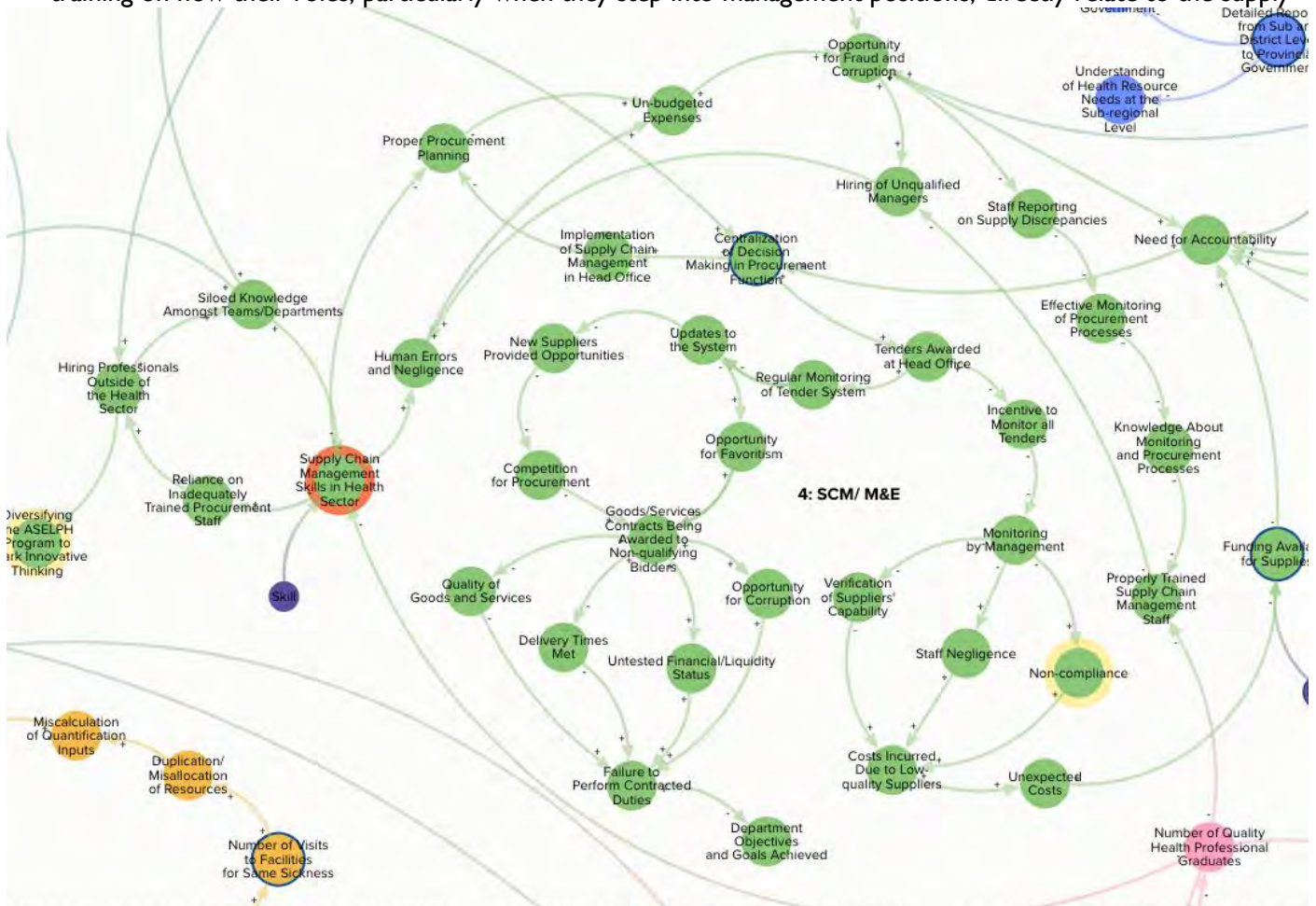
this was one of the problems. I can get endless supply of tea and whatever else is needed” Soon after tea and biscuits were provided. The interviewee further shared:

*Someone comes from national and says this is against the regulations that you can't receive free things from the private sector without following the proper steps. If the CEO cannot resolve a problem such as this one and he can see the problem of the tea but he cannot solve the problem, his back is against the wall. With every executive position, this is something you have to face. There needs to be something in their training that will help them operate in [a constrained] environment. That is what the ASELPH Programme offers...a leadership programme that has the ideas [on how to] work around the constraints.*

To many, the idea of providing tea appears insignificant compared to the larger strategic decisions being made in the health system. Therefore, when a CEO of a hospital is not able to provide tea to his/her staff, many become unmotivated, which has negative ripple effects throughout the health system.

#### Light Green Loop: Supply Chain Management and Monitoring & Evaluation

One of the consequences of a shortage of high performing health graduates occurs in the supply chain management function. Individuals attending school for public health, nursing, or medicine often do not receive training on how their roles, particularly when they step into management positions, directly relate to the supply



chain management function. For robust and efficient supply chain operations, health managers, pharmacists, and supply chain managers must work together. Therefore, it is necessary for all roles to have an understanding of how their role relates to supply chain management. The increasing population and burden of disease—resulting

in fewer patients taking up a disproportionate amount of resources—requires highly qualified managers with the ability to make strategic decisions in the face of two less-than-ideal options. As one interviewee stated,

*The [Health] Minister has the intention to optimize the supply chain. Even if you optimize the supply chain and get resources evenly distributed, the need is too great. Over a period of time the population has grown. We started off with a population of 24 million and the latest [census] is 56-58 million. The population has doubled [in the last ~35 years]. We started off with so much less burden of disease, HIV was still not a big thing.*

When there is a deficient number of qualified doctors and nurses with a combination of health system knowledge and supply chain management skills, a vicious cycle is created. Facilities and government offices are equipped with inadequately trained staff and/or must choose between hiring individuals with health sector knowledge or those who have skills in supply chain management. An additional consequence of knowledge loss becomes more likely: those with non-health sector backgrounds focus on and manage to the needs of their specific department without having the full health system perspective.

Additionally, poor supply chain management skills increase the potential for human error and misunderstanding of policies and procedures. The result is sometimes unbudgeted expenses, which increase the risk for fraud and corruption. While interviews completed by SPACES suggest that the centralization of the procurement process is ineffective and contributes to corruption, the Treasury launched a central supplier database in 2015 specifically to stymie corruption and reduce administration costs. This was in response to the previous year's 6% (R30-billion) loss associated with procurement processes due to corruption.<sup>14</sup> One interviewee stated, “The challenge is when you talk of ‘the state’, people think everything is free and we need people to understand that what we are buying for the state through Supply Chain is money and [that money] needs to be accounted for.” In instances where public servants are the cause of the corruption or negligence, there is a direct disincentive for management to enforce procedures such as routine staff reporting on supply stocks. Over time, this may manifest into procedural ignorance: new staff are not trained to properly manage and monitor stock and they then hire others into the system without the needed skills for a more effective supply chain.

The centralization of decision-making may result in those in leadership positions unaware of the local health system needs and procedures, greatly affecting supply chain operations. As one interviewee stated,

*In Supply Chain Management you have consumables that are on contract and others that are not. If you get a submission coming in from the health facility and you have no clue what is happening at the health facility, you need to know what questions to ask and if the quantity that he is asking for is realistic within the district they live in.*

Another challenge with supply chain management involves how incentives shift when decision-making becomes centralized. When public servants from the provincial and national head offices are not engaged in the management or disbursement of supplies yet manage the tender award process, there is a decreased incentive to closely monitor awardees. One interviewee working in the supply chain management function remarked:

*But the actual management of the entire process across the country requires at every level a different level of delegation, leadership, management, accountability. I don't know if we are quite there yet. I think that we have a problem at the actual start of the supply chain. In my opinion, I think that we need to educate the personnel of the supply chain going down to actually achieve what we are trying to achieve with NHI [National Health Insurance].*

With insufficient accountability measures, errors and corruption can be directed and blamed on the district, sub-district, and facility. Centralized decision making also decreases routine updates to the procurement system. The centralized reporting structure requires even small decisions (the purchase of lightbulbs and

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<sup>14</sup> Ambe, Intaher. (2016). Public procurement trends and developments in South Africa. Pressacademia. 3. 277-277. 10.17261/Pressacademia.2016.351.)

Panadol) to be signed off by district and provincial offices. Larger decisions, such as adding new organizations to the list of accredited suppliers, prove difficult and the contracts awarded to non-qualified businesses can increase. Ultimately, the challenges within the supply chain lead to slower processes, reduced quality, and unnecessary risks that contribute to a lower caliber of service delivery.

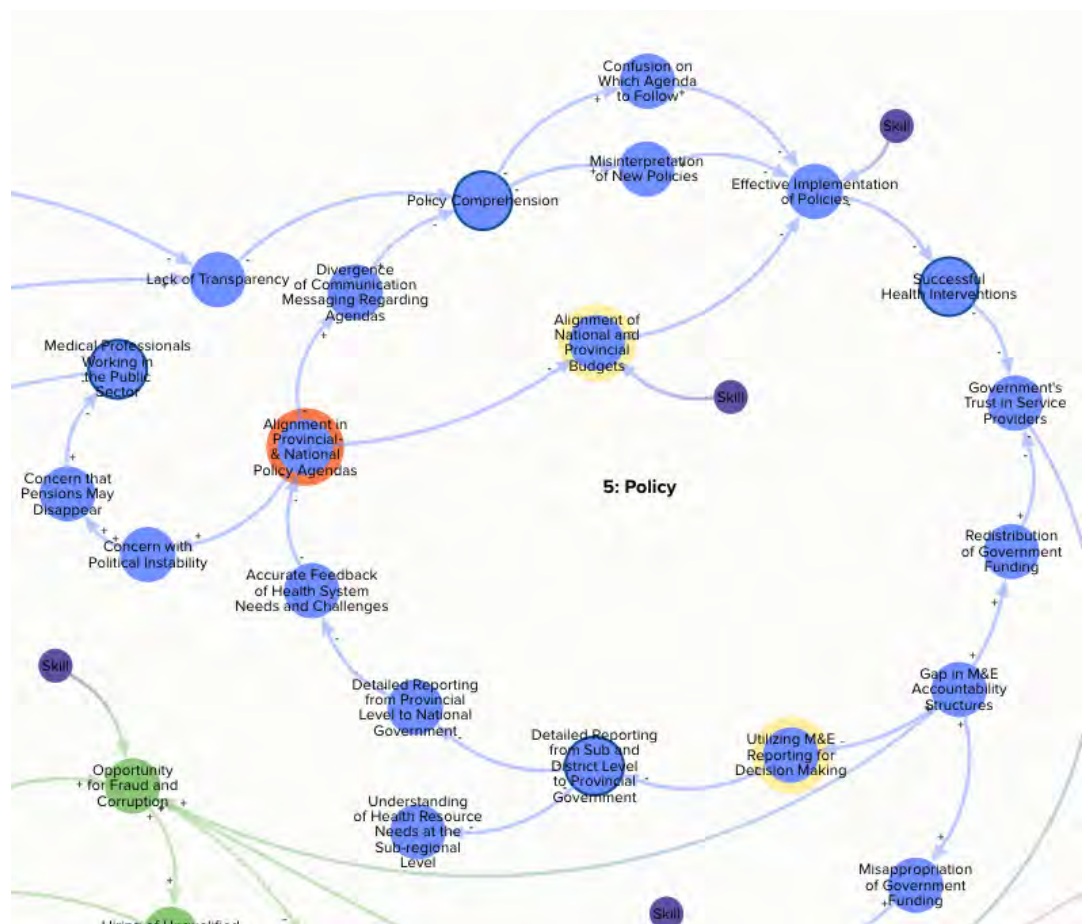
#### Blue Loop: Policy

Multiple participants interviewed by the SPACES team in South Africa emphasized that they believe there are quite good policies within the South Africa Health System—the problem is in how those policies are implemented. At a national and provincial level, priorities for government spending may differ, resulting in unclear communication between the National Ministry of Health and the Provincial Department of Health. For example, in 2016 the national government elected to prioritize post-secondary school education and training along with basic education over an increase in health spending.<sup>15</sup>

However, in the Western Cape, health received the largest budget allocation within the social sector, highlighting a different priority.<sup>16</sup> It should be noted that while the national government has indicated improving health outcomes and decreasing the disease burden particularly for the poor are key drivers for South Africa's development, provincial health budgets are projected to grow

by less than 0.1% over the medium-term expenditure framework, which is concerning news when provincial investment in healthcare is heavily dependent on transfers from the national government.<sup>17</sup> One interviewee highlighted the resulting challenge that stems from the misalignment of policies:

*National may tell you that health is a priority at the national level but then the MEC [Members of the Executive Council] in the province says that health is not a priority. It looks like you have a strong budget, but many times it is specifically tagged for certain things. The national department said that we should make the decision that we do not build any new hospitals, but then when you come to the province they say 'no, we will build new clinics and hospitals'. So then when*



<sup>15</sup> <http://www.treasury.gov.za/documents/national%20budget/2016/ene/FULLIENE.pdf>

<sup>16</sup> [https://www.westerncape.gov.za/assets/departments/treasury/Documents/Budget/2016/2016\\_budget\\_summary\\_budget\\_day\\_3\\_march\\_2016.pdf](https://www.westerncape.gov.za/assets/departments/treasury/Documents/Budget/2016/2016_budget_summary_budget_day_3_march_2016.pdf)

<sup>17</sup> [https://www.unicef.org/esaro/UNICEF\\_South\\_Africa\\_-\\_2017\\_-\\_Health\\_Budget\\_Brief.pdf](https://www.unicef.org/esaro/UNICEF_South_Africa_-_2017_-_Health_Budget_Brief.pdf)

*you go back to national they say that you cannot complain about not having the right money when you had it, you just choose to build rather than putting it into service delivery.*

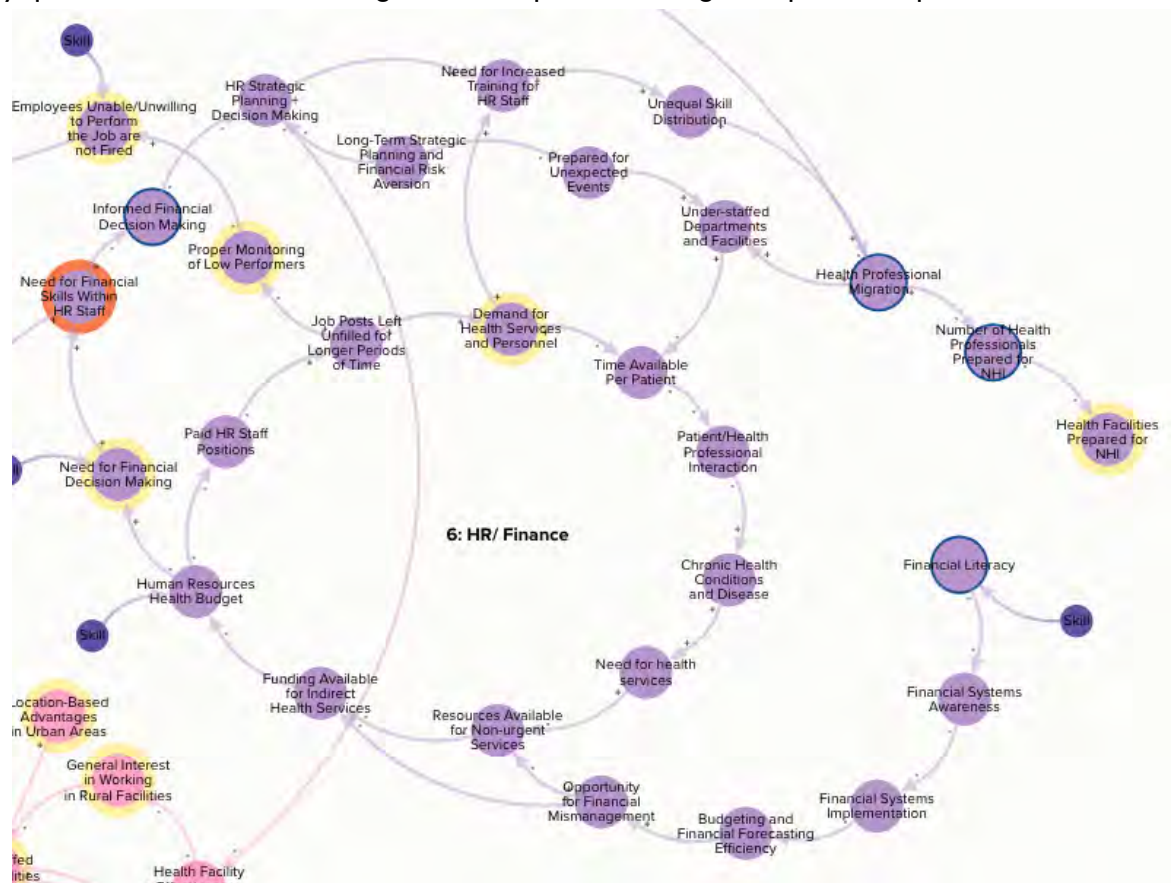
At the district and facility level, one of the challenges preventing good policy from being understood, accepted, and then implemented is the confusion that arises from siloed departments. With a poor communication system, policy instructions may be received by one individual or department and fail to reach the staff who are ultimately required to adopt the policy. With decreased transparency on what the policy's purpose is and why it is needed, the potential for confusion and misinterpretation increases. Thus, poor policy implementation is more probable, which leads to inferior health service delivery outcomes. Furthermore, there is a need for increased collaboration across systems: in order to allay the increasing need for health services, the health sector will need to work closely with the education system and the National Treasury to collaborate on targeted programs that can multiply the effects of existing programs and investments.

The vicious cycle continues when the failure to produce expected health outcomes invokes distrust from the provincial and national levels in the management at district and facility levels. This distrust puts the decision of renewed funding and the allocation of funds for health services at risk. Additionally, the challenges originating in the monitoring and evaluation (M&E) function reverberate in policy decision making. A lack of data and detailed reporting at all levels leads to inaccurate feedback on the needs and changes within the health system. The insufficient data may produce policies that do not reflect current realities. In these situations, policymakers must respond based on previous experience and knowledge, which may not be relevant.

#### *Purple Loop: Human Resources and Finance*

A shortage in highly qualified staff often leads to significant competition amongst the public and private sectors to recruit and retain the best health professionals.

Higher earnings in the private sector attracts these professionals, leaving the public sector with a shortage of staff. In the private sector, financial decisions are closely monitored and have clear accountability structures; thus, financial skills are important and desired in the hiring process. As one interviewee noted:



*Having worked in the private sector for a short while, there the bottom line was the figure. What is the profit they are making on a monthly basis? They put a great deal [of importance] on the management accounts and interrogating at every month to look at why didn't they reach their accounts. We don't do that in the public sector. That's something I think that is desperately needed.*

The private health sector intentionally hires financially literate health professionals, which results in the public health sector struggling to retain these individuals. Since the public health sector serves over 80% of all health patients in South Africa, individuals who have both clinical and financial skills are unevenly distributed in the larger system. This is further exacerbated when looking at access to health facilities. A report from UNICEF shares that in rural provinces such as KwaZulu-Natal, over 30% of children are further than 30 minutes away from a health facility<sup>18</sup>. With preventative care less likely and a higher poverty rate for rural areas, it has remained a consistent challenge to incentivize highly qualified health professionals to remain in rural areas.

Poor financial decision-making can lead to a cascading set of challenges throughout all levels and functions of the health system. The current health system suffers from a siloed financial function: those managing the finances of a hospital or clinic are incentivized to make decisions based on what's best for the budget. Those in service delivery are likely to first assess what's best for the individual patient rather than appreciating that stockouts or budget shortcuts will happen if they are not mindful of expenses. This is certainly the case when it comes to human resources management: inadequate financial skills can result in an inability to incorporate comprehensive financial strategic planning and decision making. This increases the risk of budgetary allocation decisions that do not align with long-term needs and may affect the ability of staff to deliver quality and timely health services.

One example of how a lack of financial skills has consequences on operations came from an interviewee who manages the budget of multiple facilities. On her role pre-ASELPH Programme: "You must understand I do not have a finance background. Dealing with money was a bit difficult for me [but] I am responsible for the budget of the facilities. I must be able to make a plan for the facilities, what are the needs [and] prioritizing." Inspired by her time learning about finance in the Programme, she designed a financial template she now uses when communicating with her team:

*I have designed a template to see how I have monitored [the budget] so when I have a team meeting I am able to answer [financial questions/concerns]. Before I would just scratch my head. We now have a clear plan and [we] know where we are heading. And ASELPH gave me that skill to deal with the budget and I am able to manage the budget.*

The limited financial skills held by many health professionals in management positions results in a disparate distribution of individuals: those who demonstrate both clinical and financial literacy are more likely to be recruited to the private sector, large cities, or migrate out of South Africa. One consequence of rural health worker migration is that rural health facilities and the individuals they serve are left in a vicious cycle: the limited financial skills of health workers that remain are insufficient to manage an already inadequate budget. Skills such as strategic planning and accounting go unused and managers may fail to consider long-term consequences or unintended consequences. The vicious cycle thrives when the paltry funding that does exist is used in a suboptimal way: as budgets fail to keep pace with needs, sicker patients take up proportionately more resources and time of staff. Indirect health services such as administrative services and human resources are eliminated or cut further. Under-staffed facilities are unable to meet the needs of patients in a timely manner. Additional problems begin to accrue: misdiagnoses; "waiting-room fatigue" with patients choosing to come to the hospital only at later-stages of illness; and manageable chronic illnesses turning into costly treatments for both the patient and hospital.

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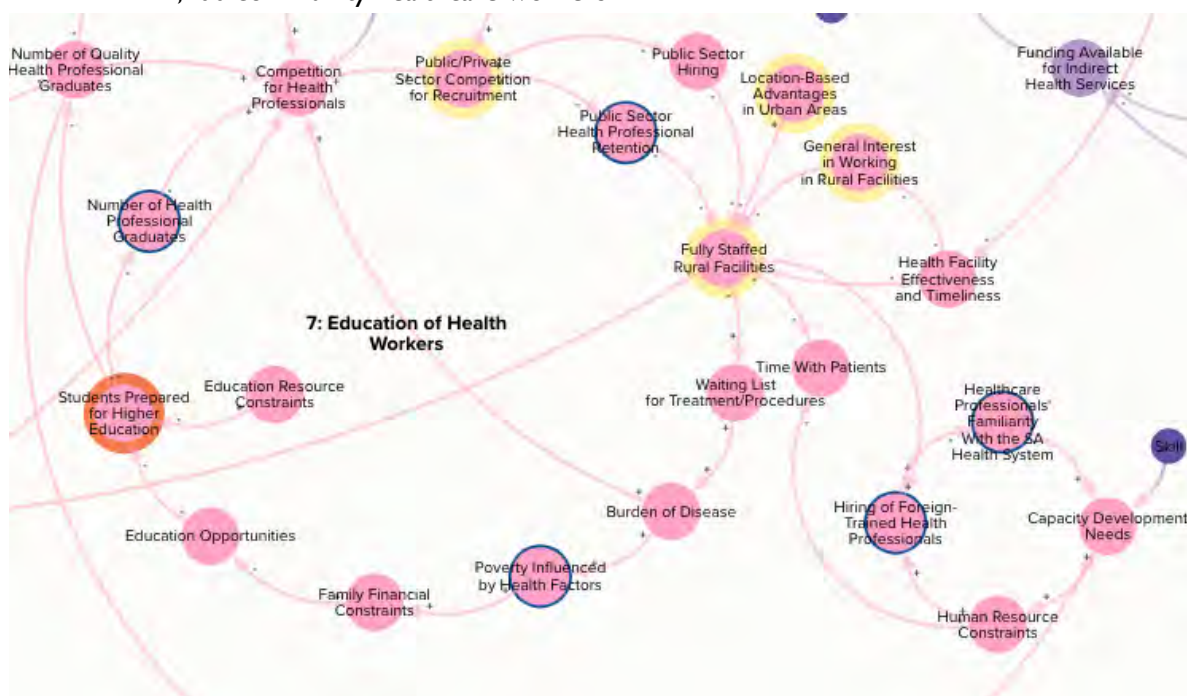
<sup>18</sup> [https://www.unicef.org/esaro/UNICEF\\_South\\_Africa\\_-\\_2017\\_-\\_Health\\_Budget\\_Brief.pdf](https://www.unicef.org/esaro/UNICEF_South_Africa_-_2017_-_Health_Budget_Brief.pdf)

Within our interviews, 38% (n=17) of management officials indicated financial skills (second highest mention of any skill/skillset) were one of the most important skillsets for executive leaders to hold both for themselves and those they manage. In the face of increasing costs and limited resources, a focus on integrating financial skills across all functions can be a pivotal stopgap that can provide the time and resources for health leaders to begin addressing greater underlying issues affecting the South Africa Health System.

### *Pink: Education of Health Workers*

The South Africa Health System currently faces a human resources crisis. Per the Human Resources for Health Plan of 2011, the country had 5.43 doctors per 10,000 individuals. This contrasts poorly with Brazil (17.31 doctors per 10,000), a fellow BRICS country, so categorized for their fast-emerging economies.<sup>19</sup> According to the National Department of Health's (NDoH) Workforce Model, in 2015 the estimated shortfall in health professionals were:<sup>7</sup>

- ~15,300 staff nurses
- ~22,100 professional nurses
- ~3,800 medical practitioners
- ~14,200 community healthcare workers



This inadequacy stems from four major challenges: (1) insufficient production of health professionals by the South Africa Education System; (2) migration of health professionals to other countries; (3) disparity between rural and urban facilities; and (4) uneven dispersal of public versus private health workers.

The education and training system is a primary factor contributing to the insufficient number of health professionals working in South Africa. The education system fails to produce enough health professionals for South Africa's constantly increasing disease burden. In the past 15 years, the ratio of health professionals to the population has remained stagnant but the disease burden has grown tremendously because of HIV/AIDS and other communicable and non-communicable diseases.<sup>7</sup> Another contributing factor is the migration of health

<sup>19</sup> National Department of Health. Human Resources for Health, South Africa. HRH Strategy for the Health Sector: 2012/13–2016/17. Pretoria: National Department of Health, Republic of South Africa; 2011.

professionals to other countries. It is reported that one-third of the doctors trained in South Africa are working outside of the country.<sup>7</sup> The attrition rate of health professionals in South Africa is estimated to be 25% due to migration and 6% due to retirement, death, and change in profession.

Two additional challenges that contribute to the human resource problem are the disparity between rural and urban areas and disproportionate dispersal of health professionals between the public and private sectors. According to the HRH Strategy, “in South Africa, 43.6% of the population live in the rural areas. However, they are only served by 12% of the doctors and 19% of nurses. Of the 1200 medical students graduating in the country annually, only about 35 end up working in rural areas in the longer term.”<sup>7</sup> The density of private medical practitioners is also much lower in rural areas, which further compounds the urban/rural disparity. For example, in Western Cape there are 7.64 private medical practitioners per 10,000 people and in Limpopo province there are 0.97 private medical practitioners per 10,000 people.<sup>8</sup> The disparate expenditure between private and public health care exasperates the challenge of human resource constraints in South Africa. According to the World Health Organization Global Health Expenditure database, 3.81% of GDP is spent on private healthcare, which serves roughly 20% of the population, and 4.39% of GDP is spent on public healthcare, which serves roughly 80% of the population.<sup>20</sup>

To alleviate these two challenges, the government designed the Occupation Specific Dispensation (OSD) in 2007. OSD was intended to make key public sector service professions more attractive so that existing personnel would be retained and new personnel hired. However, OSD has not relieved these challenges as planned. One interviewee working at a large public hospital in Gauteng shared:

*In private institutions they appreciate their employees by giving them certificates or take their best-performing people out for [a] two-night trip and that motivated them. In public, they are getting enough money because of OSD, but yet they are still not satisfied...so I don't know if money has an impact. But public acknowledgement does have an impact.*

The disparity between urban and rural health facilities and the public and private sectors causes a vicious poverty-related feedback loop. Understaffed rural facilities result in several factors: (1) an unpleasant experience in the facilities due to long wait-times and overworked health professionals; (2) a higher likelihood of poor-quality care and medical error; and (3) long waiting-list for procedures and surgeries to be completed. When rural facilities fail to provide patients with necessary care, some may choose to seek out private healthcare. However, in very rural areas, private health care is not easily accessible, and the cost of care is too high for nearly all families. These factors ultimately contribute to a higher disease burden in rural areas, and further financial stress on rural families.

One of the consequences the South Africa Health System has experienced as a result of a shortage in healthcare professionals is the exodus of qualified staff to the private sector where they are paid higher wages, are assured a more secure future, and benefit from better working conditions. As one interviewee put it:

*There are rumors the political or economic state of the country is going down, they [healthcare professionals] are worried their pensions are going to disappear so they leave. They either go to the private sector which allows contract employment and they come back to the system again when the positions are advertised again.*

In many instances, doctors take on two positions (remaining in their role in the public system and tending to patients in the private sector) or work solely for a private hospital or clinic. The approaching rollout of National Health Insurance emphasizes the need for re-evaluating adherence to current policies and consideration around incentives for health professionals to support the public health system.

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<sup>20</sup> World Health Organization (2014). WHO Global Health Expenditure Database: South Africa. Retrieved October 10, 2018, from <http://apps.who.int/nha/database/ViewData/Indicators/en>

In another attempt to alleviate the shortage of health care workers, South African government increased foreign hiring and foreign training of health professionals. In order to ensure quality of health professionals, all foreign-trained medical students are required by law to pass the Health Professions Council of South Africa admissions examination to register as a health practitioner in South Africa.<sup>21</sup> The primary mode of supplementing the number of health professionals is through a bilateral agreement between the government of South Africa and the Republic of Cuba for the Nelson Mandela-Fidel Castro Medical Collaboration program (NMFC MC). The program is designed for students to receive five years of medical training in Cuba and then return for a final year in South Africa. However, one study analyzing the NMFCMC program found that most students graduating from the program receive poor marks on final examinations. According to the study, “in the final examinations, approximately 50% will have to repeat modules in order to qualify, resulting in a prolongation of training which in some cases may be substantial.”<sup>10</sup> Many factors contribute to this issue such as: language differences (in Cuba they are trained in Spanish and in South Africa, they must return to practicing in English); context-specific factors, such as the prevalence of violence (e.g., stab wounds and gun-shot wounds are prominent in South Africa but not in Cuba); and a mismatch in curricula set for Cuban doctors as compared to the South African doctors. Although more doctors are being trained through the NMFCMC program, the quality of the doctors is yet to be determined and the system is inefficient. The inefficiencies of the program may be one contributing factor that is driving the human resource constraint in South Africa because additional training time is needed for doctors graduating from the NMFCMC program.

## **Networks of leadership and information exchange among diverse locations and functions in the health system**

### **Social Network Analysis**

Overall, there are a number of similar findings that emerged from cohorts at and between both universities. The primary topic of communication between former classmates was consistently cited as being either “Leadership and People Management” or “Planning and Strategic Management.” “Financial Management and Administration” was the lowest cited topic of exchange between fellows across all cohorts. Of the additional topics, “Service Delivery and Innovation” was the most frequently cited by all but one cohort (where it appears second). Unsurprisingly, the frequency of interactions between fellows generally correlates negatively with time since the cohort graduated; though the value of interactions does not change significantly between cohorts based on time post-graduation.

There are, however, interesting differences between cohorts, as well. Differences in geographic representation and technical diversity across cohorts appear to impact the level of networking and professional relationship building between fellows. Although text messaging is the most commonly used form of communication, there are also unexpected variations in the use of email, face-to-face, and phone communications across cohorts. These findings and others are explored in more detail for each cohort in the sections below.

### **University of Pretoria Cohort I**

The first ASELPH cohort was established at the University of Pretoria (UP) in October 2013 and graduated in 2015. The whole network map below shows 308 reported relationships based on responses from 33 of 53 fellows. The geographic make-up of Cohort I includes fellows from 7 provinces: Gauteng (n=19), Eastern Cape (n=9), Kwazulu Natal (n=7), Free State (n=5), Limpopo (n=5), Mpumalanga (n=4), and Northwest (n=4). This cohort had the lowest response rate of all five cohorts surveyed (48%).

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<sup>21</sup> Donda, B. M., Hift, R. J., & Singaram, V. S. (2016). Assimilating South African medical students trained in Cuba into the South African medical education system: Reflections from an identity perspective. *BMC Medical Education*, 16(1). doi:10.1186/s12909-016-0800-4

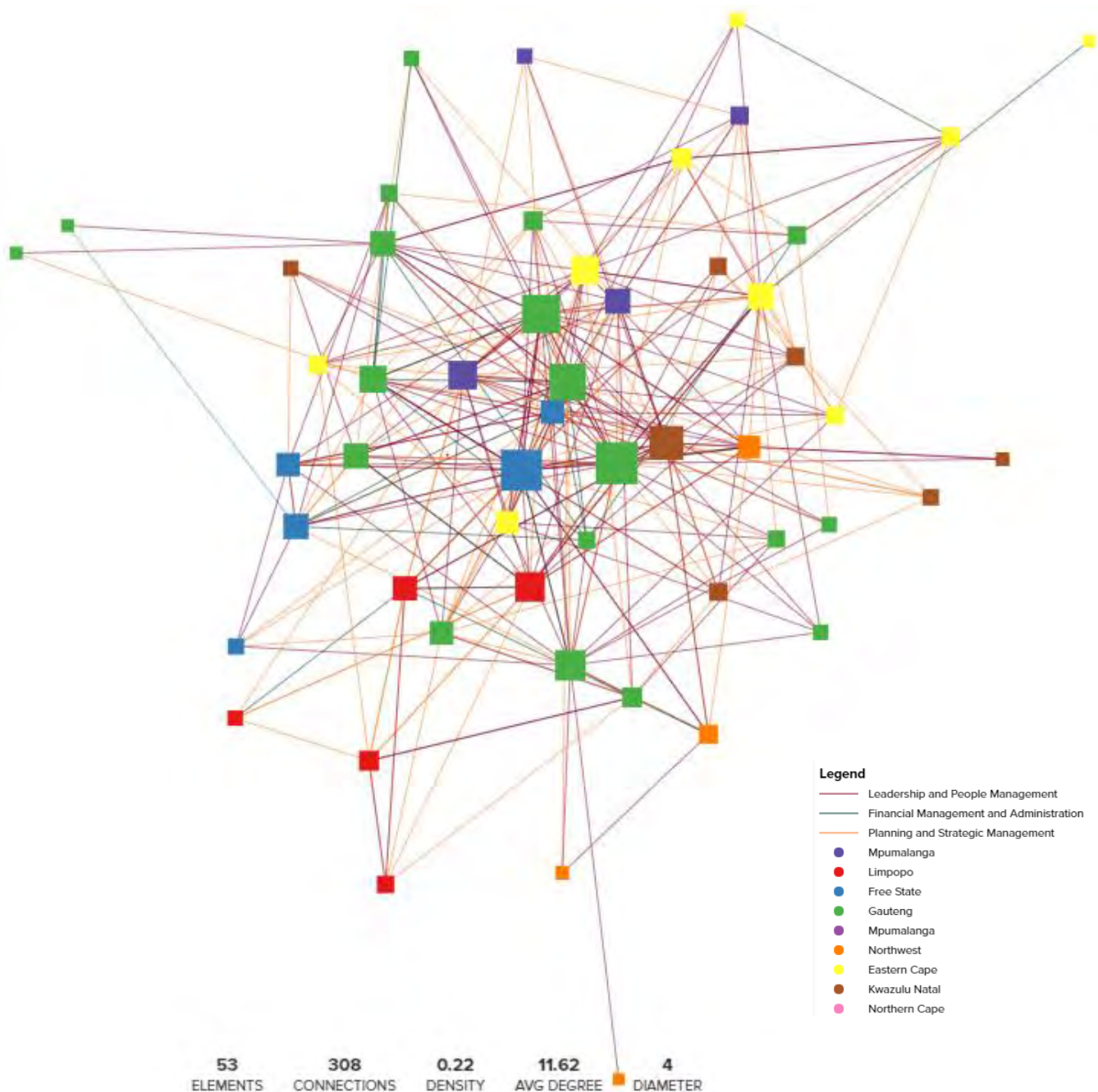


Figure 2: [UP Cohort I Whole Network Map \(click link for interactive Kumu map\)](#)

*Key challenges that ASELPH graduates network and share about*

“Leadership and People Management” was the primary topic of communication most commonly cited (n=170) by Cohort I fellows. “Strategic Planning and Management” was second (n=114) and “Financial Management and Administration” third – indicated by only 7% of respondents (n=22) as the primary subject of their exchanges. Additional topics that fellows most frequently communicate about are “Service Delivery Innovation” (n=148), “Empowering Environment” (n=127), and “Problem Solving and Analysis” (n=93). Other topics of exchange among fellows that were cited least often are “Program and Project Management” (n=62), “Community / Partnership Collaboration” (n=60), and “Self-Management” (n=55).

### Methods of Information Exchange

Cohort I alumni report using text messaging more often than other forms of communication (n=156). They also report relatively high frequencies of face-to-face interactions (n=67). Phone (n=47) and email (n=36) are used less often. Relationships that typically involve interaction on an annual basis account for 42% of all connections (n=136) in Cohort I. Daily interactions are only associated with 12 connections, 11 of which correspond to professional, working relationships.

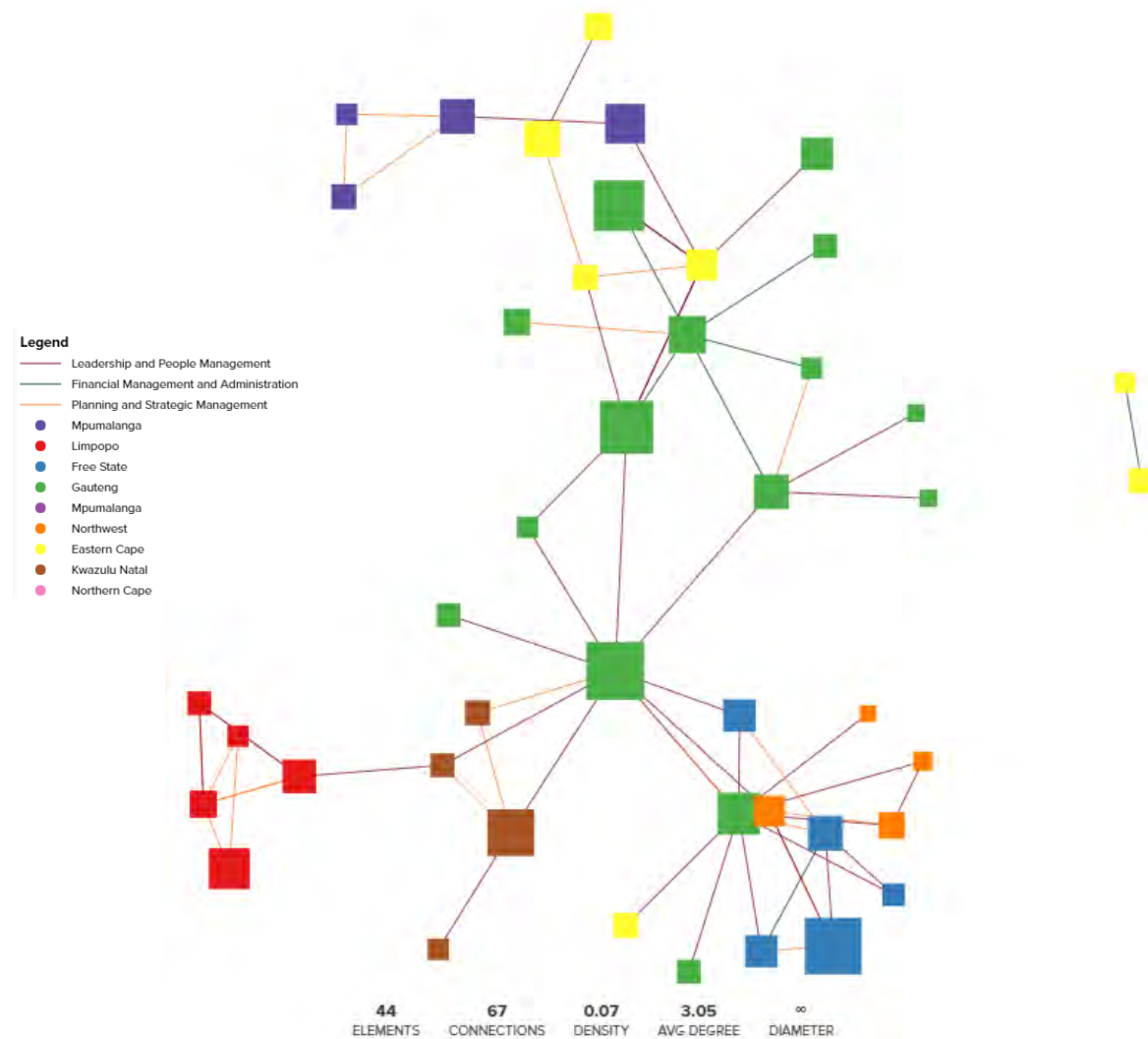


Figure 3: UP Cohort I Sub-Network Map - Face-to-Face Connections

### Networking behavior and influence

A total of 308 relationships were reported between former classmates relating to their work in the South Africa health system. Only 26% of these relationships are between alumni working in the same province. Responses show that 19% of all relationships existed prior to the program (n=62). Relationships characterized as “Professional – We Work Together” accounted for 53% of all connections (n=172). Of these, 52 were designated as existing prior to the program, indicating that at least 70% of professional relationships between fellows (n=120) were formed during or after the program. Thirty-three of the 120 professional relationships that did not exist prior to the program were among members of the same small group.

Sixteen Cohort I fellows reported receiving promotions after ASELPH. This includes three of the top five alumni by in-degree score and four of the top five by out-degree. In this cohort, there is strong correlation between in-degree, out-degree (for those who responded), and betweenness centrality rankings. All respondents who reported a promotion are also more closely connected (density of 0.54 and diameter of 3) than the overall network as seen in the graphic below.

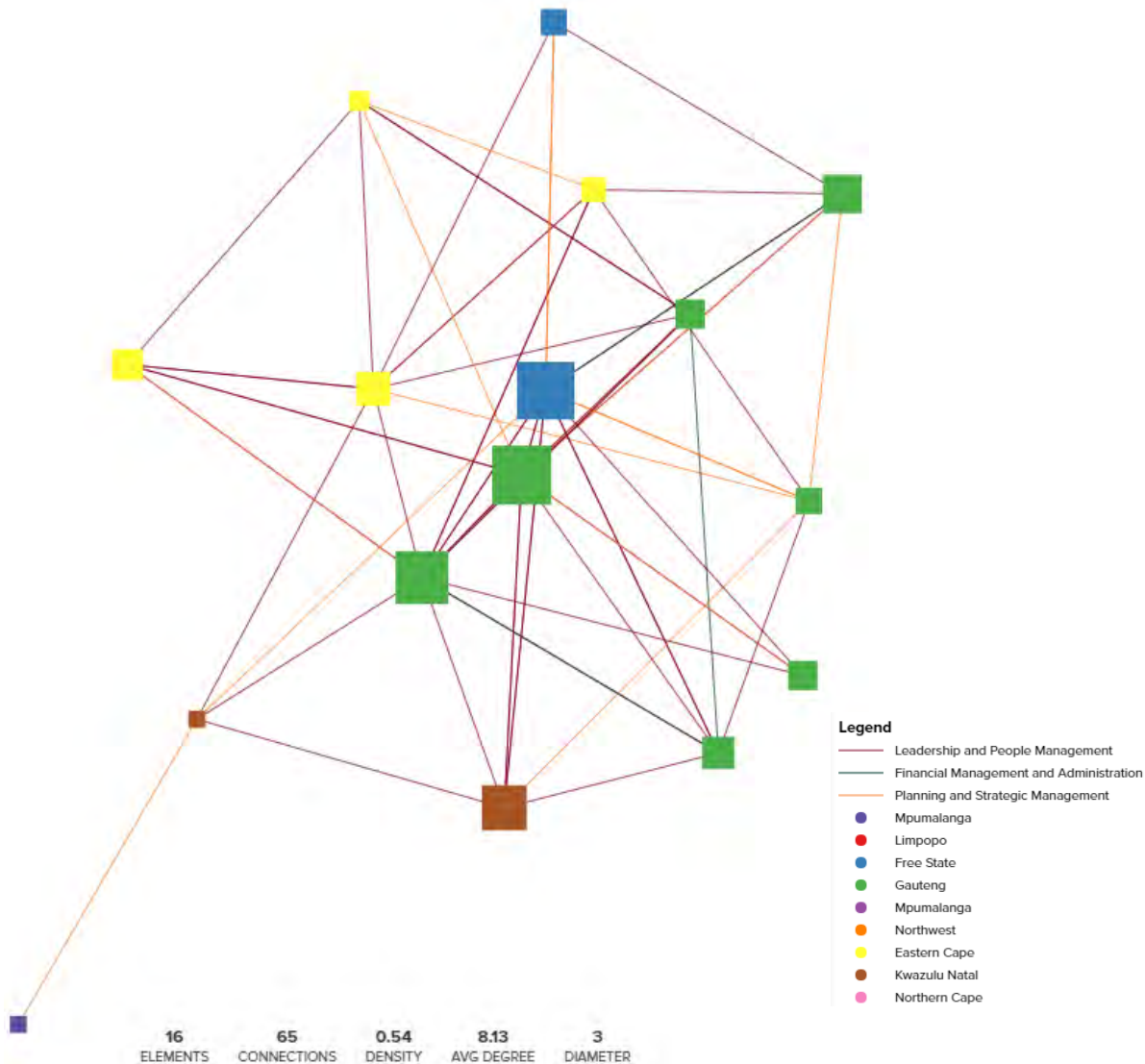


Figure 4: UP Cohort I Sub-Network Map - Respondents who received a promotion post-ASELPH

Betweenness Centrality			In-Degree	
Rank	Name	Value	Name	Value
#1	Siphiwe Mndaweni	0.133	Phuti Molokomme	16
#2	Lydia Tsaagane	0.093	Siphiwe Mndaweni	16
#3	Tebogo Lebodi	0.084	Londa Langa	13
#4	Phuti Molokomme	0.083	Tebogo Lebodi	12
#5	Funeka Sokudela-Eccles	0.069	Funeka Sokudela-Eccles	12

## University of Pretoria Cohort 2

ASELPH Cohort 2 at the University of Pretoria graduated in 2017. The whole network map below shows 152 reported relationships based on responses from 23 of 35 fellows. Only 33 nodes are displayed on the map as two non-respondents were not reported as connections by any respondent. The geographic make-up of Cohort 2 includes fellows from 6 provinces: Gauteng (n=18), Northwest (n=5), Kwazulu Natal (n=4), Free State (n=3), Limpopo (n=3), and Eastern Cape (n=2).

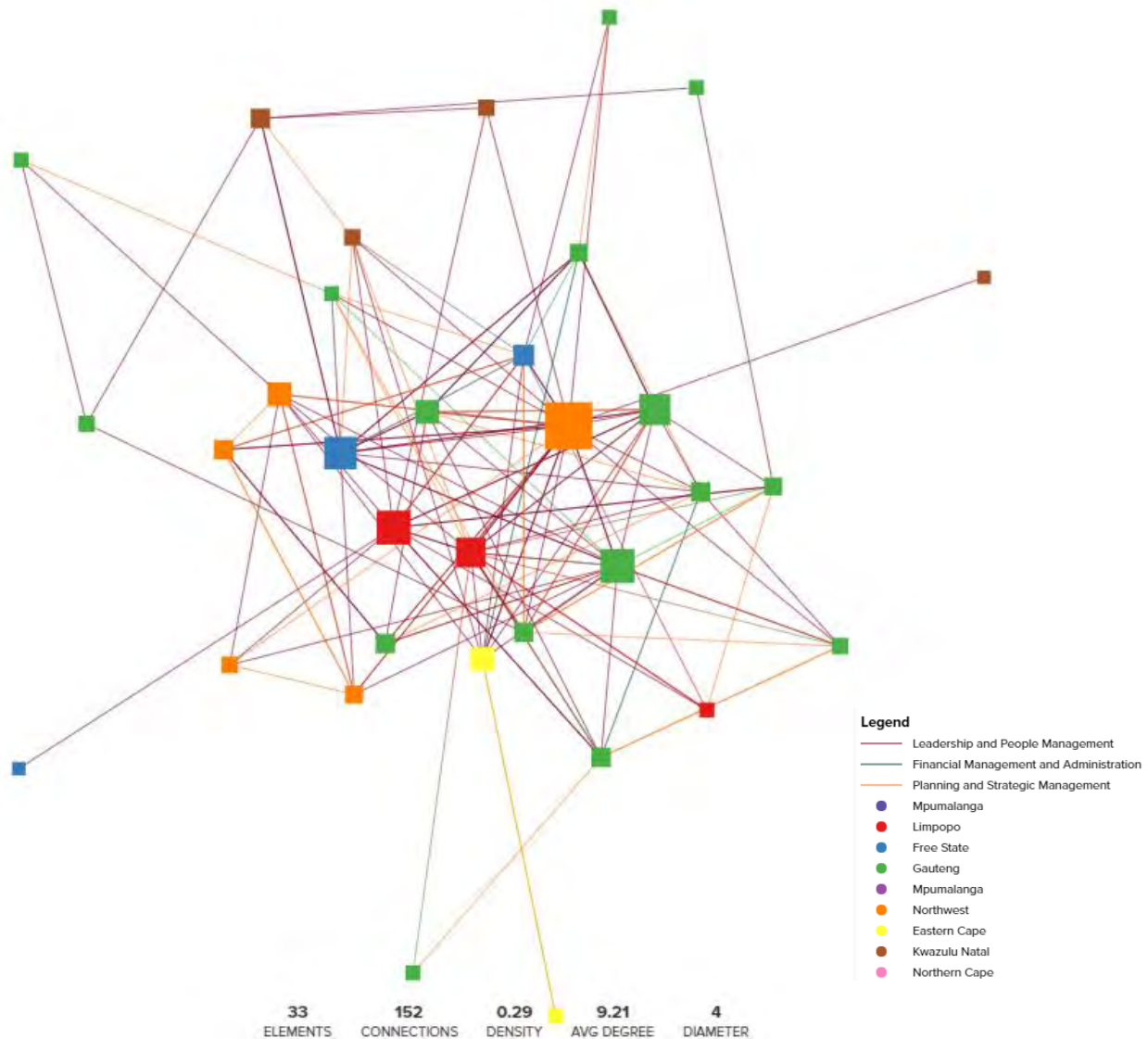


Figure 5: UP Cohort 2 Whole Network Map

### *Key challenges that ASELPH graduates network and share about*

“Leadership and People Management” was indicated significantly more times (n=96) than both “Planning and Strategic Management” (n=37), and “Financial Management and Administration” (n=4) as the primary topic of exchange between Cohort 2 graduates.

From the selection of more specific topics of exchange, UP Cohort 2 graduates indicated that they communicate about “Empowering Environment” (n=64) with their peers most often. “Service Delivery

Innovation” (n=43) – number one in each of the other four cohorts – “Client Orientation and Customer Focus” (n=41), and “Problem Solving and Analysis” (n=40), were the next three most commonly cited subjects.

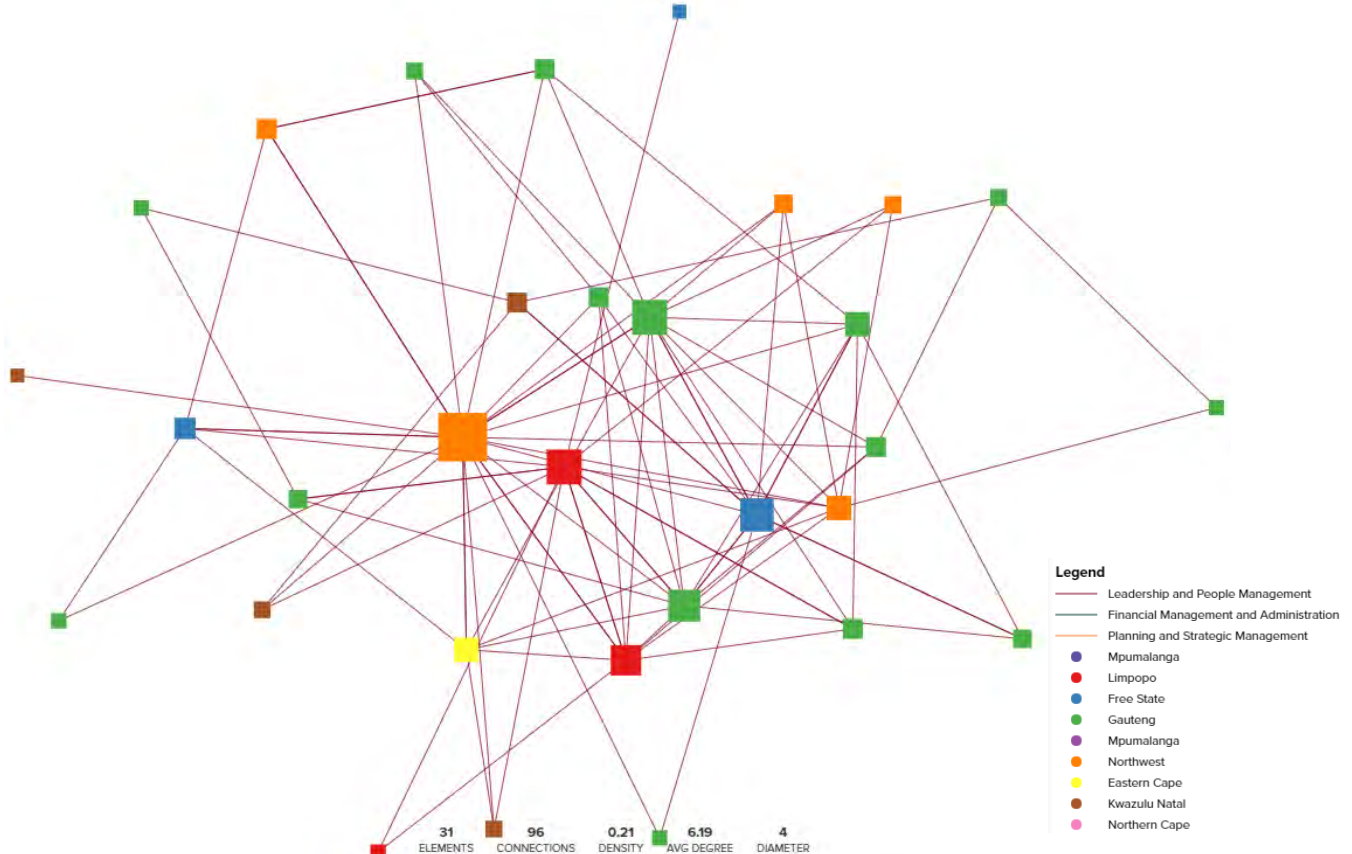


Figure 6: UP Cohort 2 Sub-Network Map - Leadership and People Management as Primary Topic

#### *Methods of Information Exchange*

Again, text messaging is the most frequently used method of communication among Cohort 2 graduates (n=93). Surprisingly, however, email as the primary form of communication was only listed 3 times. Phone conversations make up 20% of exchanges (n=30), and face-to-face interactions account for 13% (n=19).

#### *Networking behavior and influence*

Only 12 of the 54 relationships between alumni that were characterized as professional existed prior to the program; and more than half of the professional relationships reported (n=29) are not between alumni working in the same province. Only 17 of the 42 professional relationships that did not exist prior to ASELPH are among graduates who were members of the same small group. Most interactions – professional, informational, or personal – between Cohort 2 graduates typically occur on a monthly (n=58) or yearly (n=70) basis. Daily communication only accounts for 3% (n=4) of all interactions.

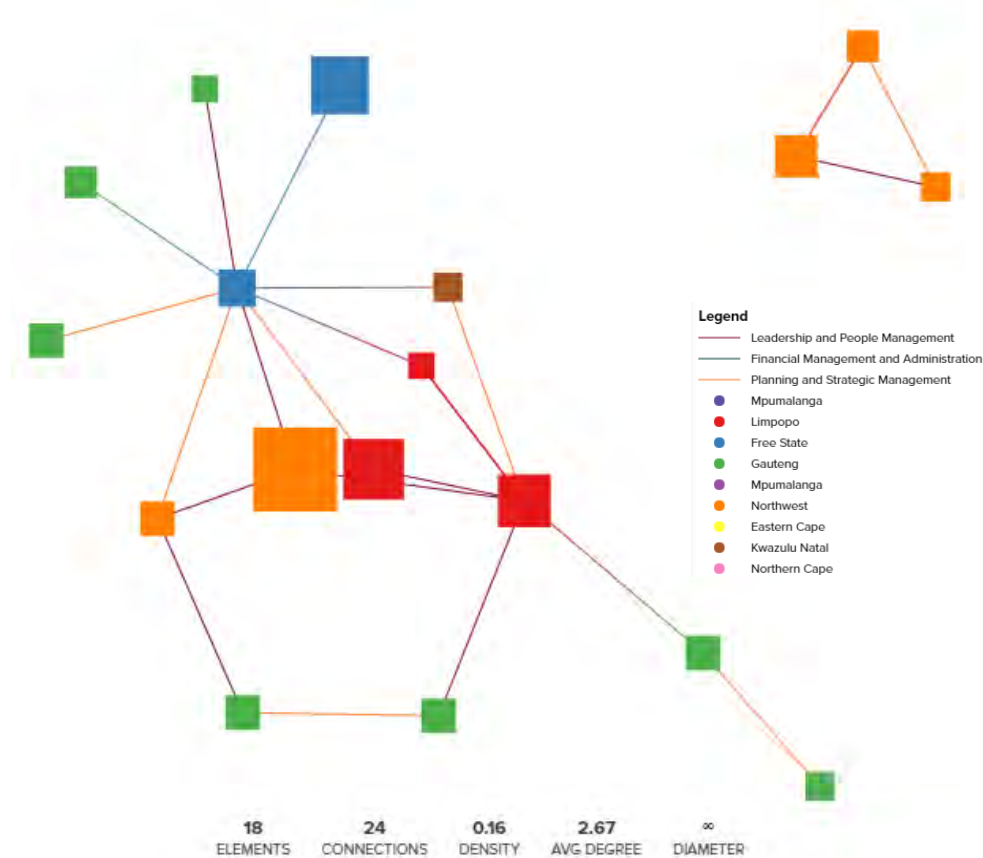


Figure 7: UP Cohort 2 Sub-Network Map - Professional Relationships among Small Group Members

The top five Cohort 2 graduates based on betweenness centrality and in-degree scores are diverse in both their professional positions and geographic representation. They include deputy directors, a clinical manager, dietician, and a lecturer and represent five of the six provinces that Cohort 2 graduates work in. None of the top five in either category is a CEO. The two individuals who did not respond to the survey and were also not listed as connections by fellow graduates hold positions as university faculty and as an occupational health program manager. They are both from Gauteng – the province with the greatest representation in this cohort.

Betweenness Centrality			In-Degree	
Rank	Name	Value	Name	Value
#1	Ncanyana Leburu	0.228	Mahlabane Linah Maepa	10
#2	Mahlabane Linah Maepa	0.128	Thando Mbatha	9
#3	Bumani Manganye	0.111	Prudence Sikakane	9
#4	Modupe Ogunrombi	0.077	Madge Molefe	8
#5	Sheila Hokwana	0.070	Ncanyana Leburu	8

## University of Pretoria Cohort 3

ASELPH's third cohort at the University of Pretoria graduated in 2018. The whole network map below shows 286 reported relationships based on responses from 39 of 49 fellows. The geographic make-up of Cohort 3 includes fellows from seven provinces: Gauteng (n=12), Northern Cape (n=8), Free State (n=8), Mpumalanga

(n=7), Kwazulu Natal (n=6), Limpopo (n=5), and Northwest (n=3). This cohort had the highest response rate of all five cohorts surveyed (80%).

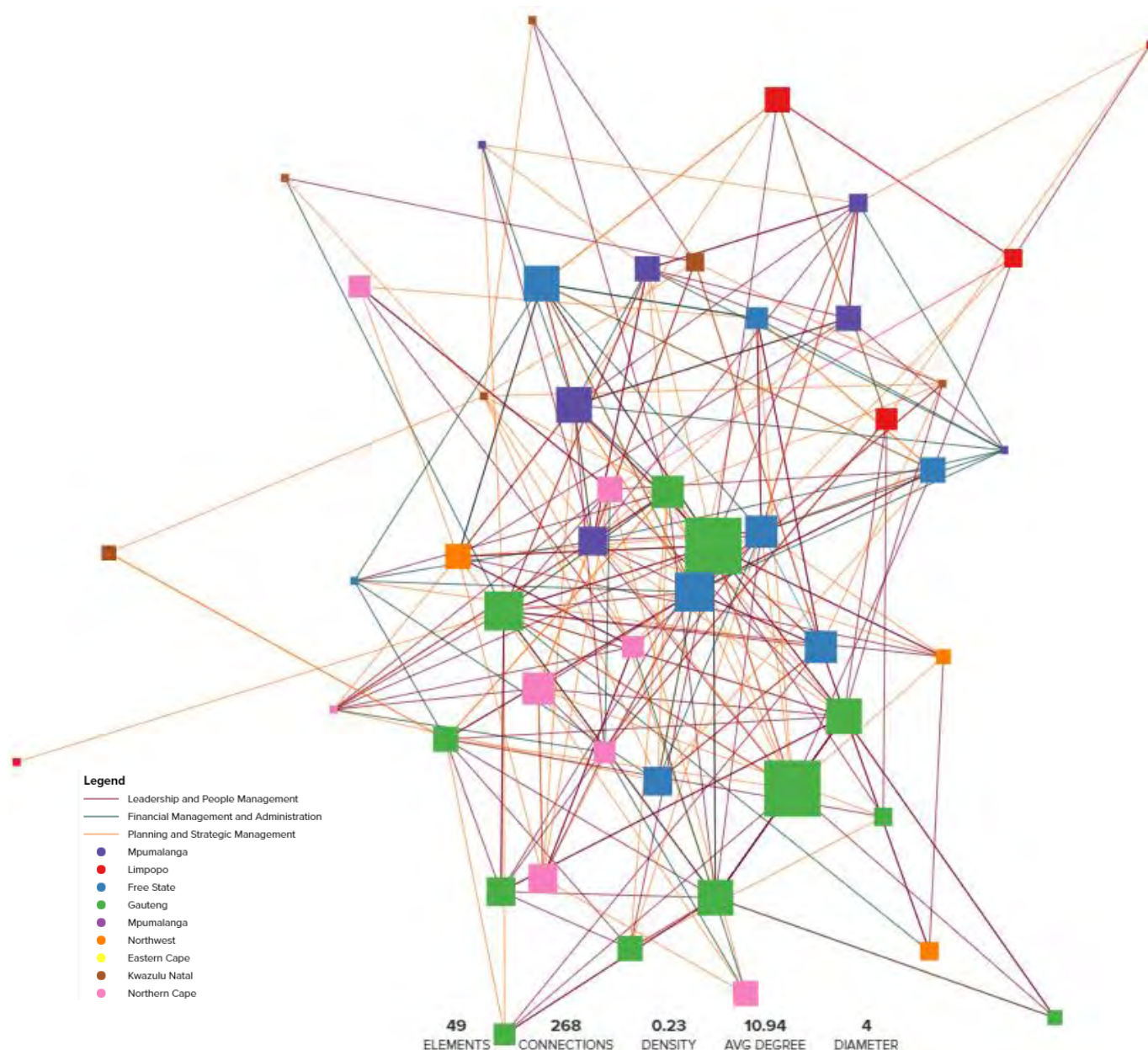


Figure 8: UP Cohort 3 Whole Network Map

*Key challenges that ASELPH graduates network and share about*

Similar to the preceding two cohorts, “Leadership and People Management” was listed as the primary topic of communication in 50% (n=134) of Cohort 3 relationships. “Planning and Strategic Management” again trailed with 34% of connections (n=94). “Financial Management and Administration” was selected the fewest times – corresponding to 13% of relationships (n=36).

The top three more specific topics of exchange among Cohort 3 members are 'Service Delivery and Innovation' (n=117), 'Resource Management and Allocation' (n=99), 'Empowering Environment' (n=92), and 'Problem Solving and Analysis' (n=88).

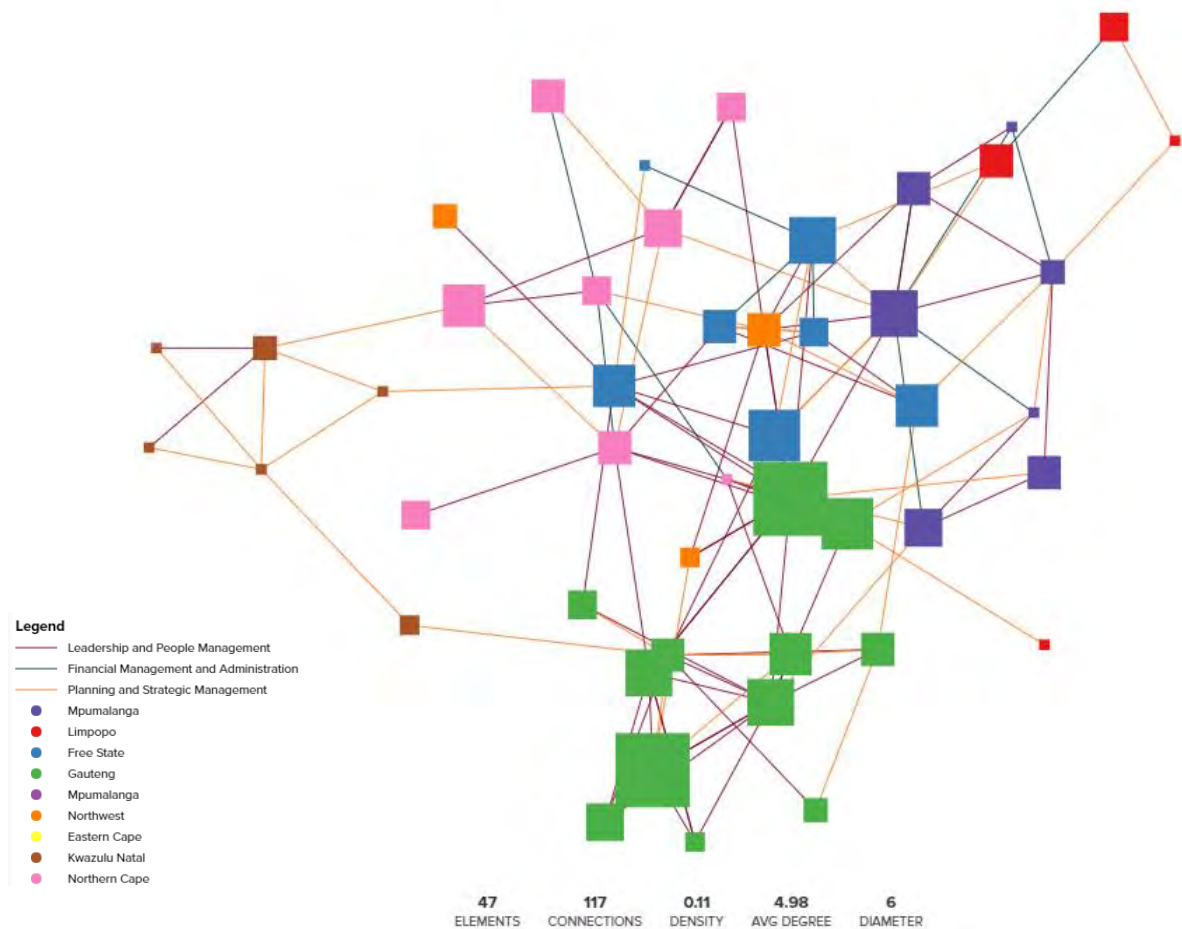


Figure 9: UP Cohort 3 Sub-Network Map – Service Delivery Innovation Exchanges

#### Methods of Information Exchange

Cohort 3 graduates are also less likely to use email than other methods of communication (n=24). Similar to Cohorts 1 and 2 text messaging emerged as the most commonly used (n=117), followed by phone calls (n=71) and face-to-face interactions (n=52).

The Cohort 3 graduates interact only slightly more frequently than the other UP Cohorts. Monthly interactions are the most common (n=125). Annual (n=67) and weekly (n=56) communication occurs about half as often as monthly interactions among Cohort 3 peers. Daily interactions were only reported for 6% of indicated relationships.

#### Networking behavior and influence

More than half of the relationships in Cohort 3 (n=150) are among graduates working in the same province. Respondents characterized 47% of their relationships as professional (n=126) – of these, 101 are between graduates working in the same province and 72 existed prior to the program. Of the 54 new professional relationships, 16 are between members of the same small group. Of the total relationships listed, 78 are among former small group members, with 55 among members from different provinces.

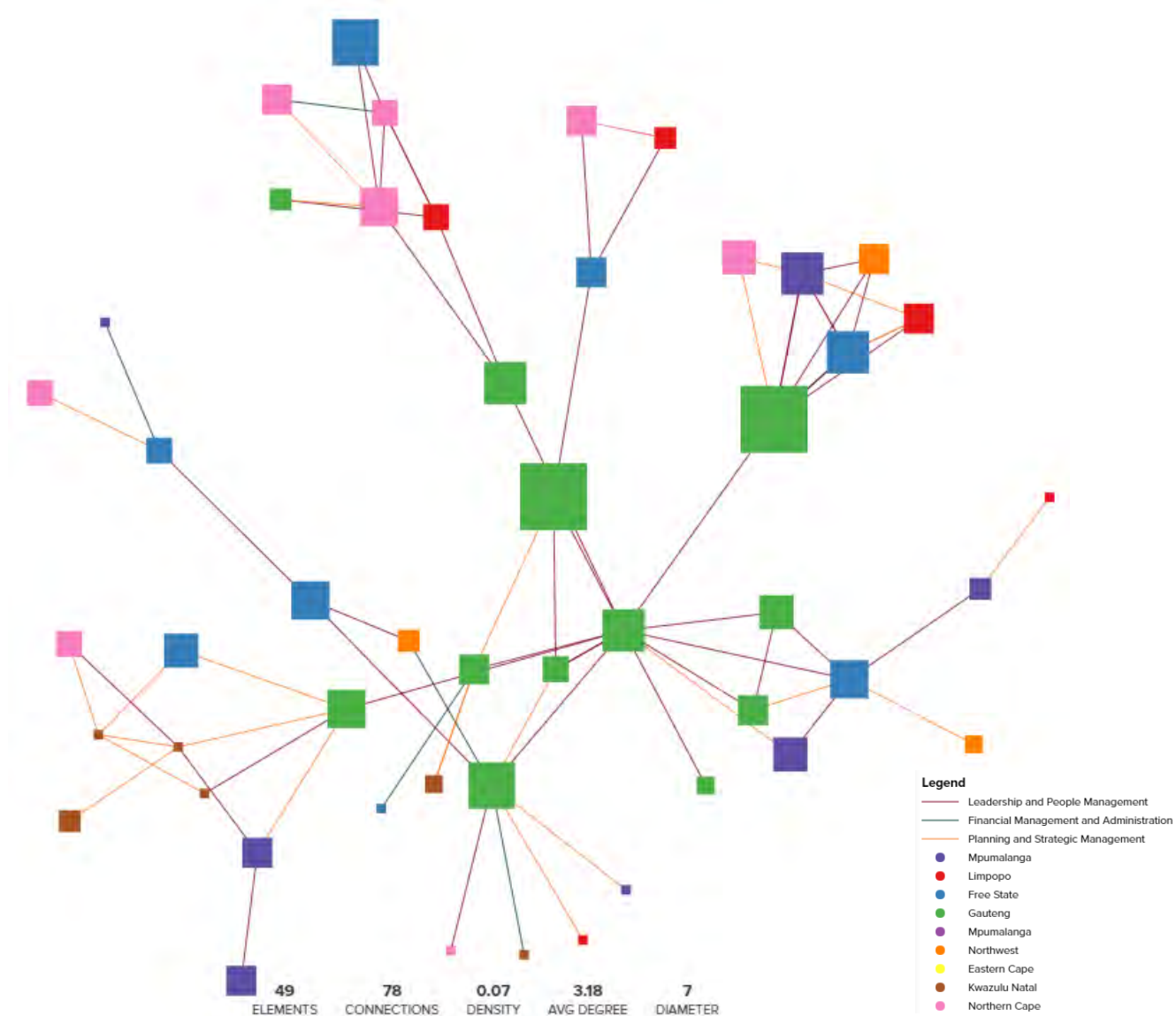


Figure 10: UP Cohort 3 Sub-Network Map - Small Group Member Relationships

The top five graduates from Cohort 3 based on betweenness centrality and in-degree represent diverse functional areas at the deputy director or director level including medicine, nursing, HRMIS. They primarily work in Gauteng (n=5) with one individual from both Free State and Mpumalanga.

Betweenness Centrality			In-Degree	
Rank	Name	Value	Name	Value
#1	Mpho Mosoane	0.129	Philly Phillip Mabusela	14
#2	Philly Phillip Mabusela	0.108	Patience Ntamane	14
#3	Grace London	0.095	Grace London	9
#4	Sibongile Alice Motloun	0.077	Mpho Mosoane	9
#5	Sylvia Mahlangu	0.059	Hawor Willejah Phiri	8

## University of Fort Hare

### Cohort I

The University of Fort Hare's (UFH) first ASELPH cohort began graduation in 2018. The whole network map below is based on responses from 22 of 46, with a total of 203 reported relationships between former classmates related to their work in the South Africa health system. At the time of the survey, the fellows from Cohort I had not yet graduated. All fellows surveyed had completed the ASELPH coursework and were either in the process of or had already submitted their final dissertations. The geographic make-up of Cohort I includes fellows from four provinces: Eastern Cape (n=29), Kwazulu Natal (n=10), Gauteng (n=5), Northern Cape (n=1), and Western Cape (n=1). This cohort had the lowest response rate of all five cohorts surveyed (48%).

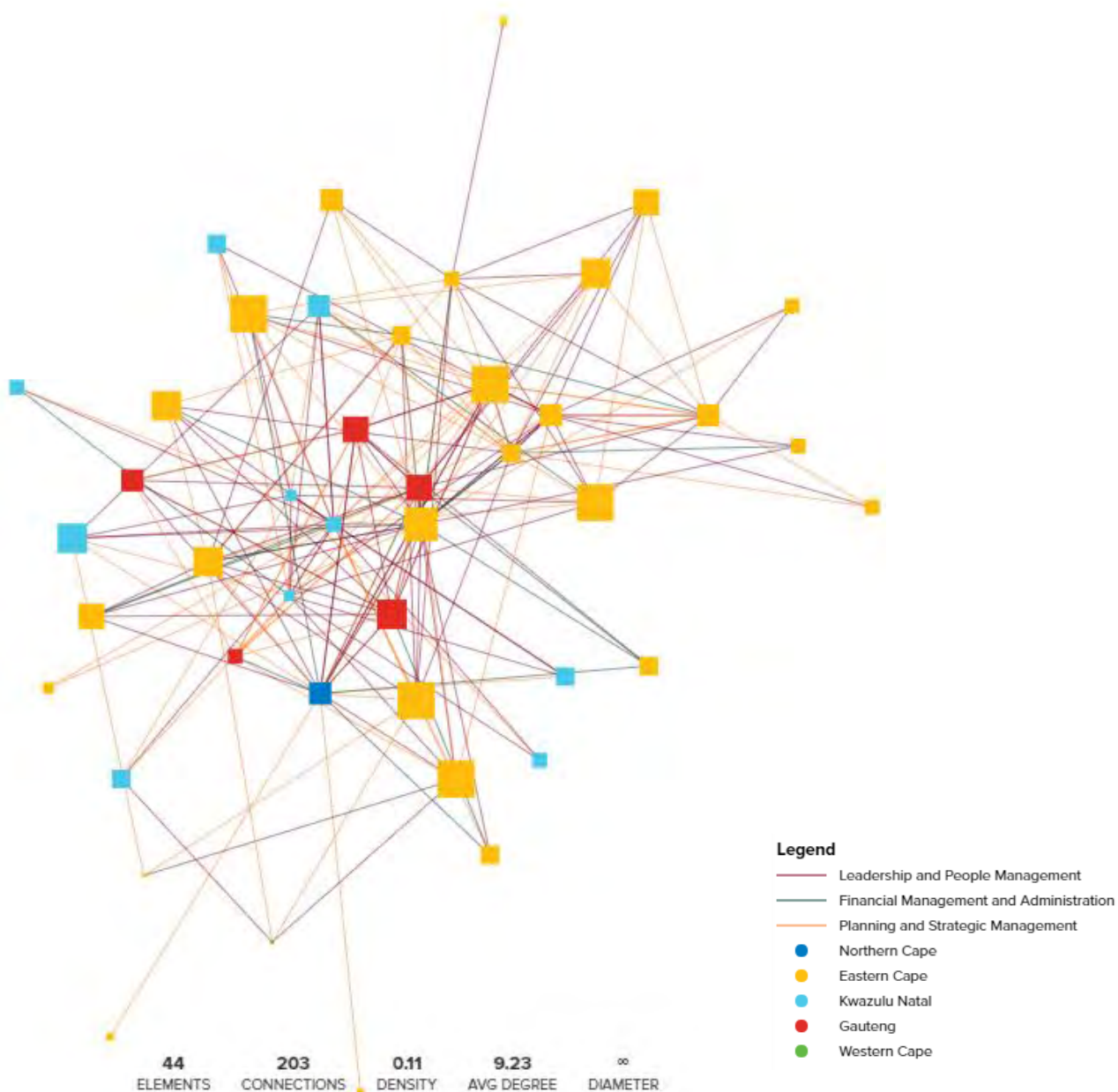


Figure 11: UFH Cohort I Whole Network Map

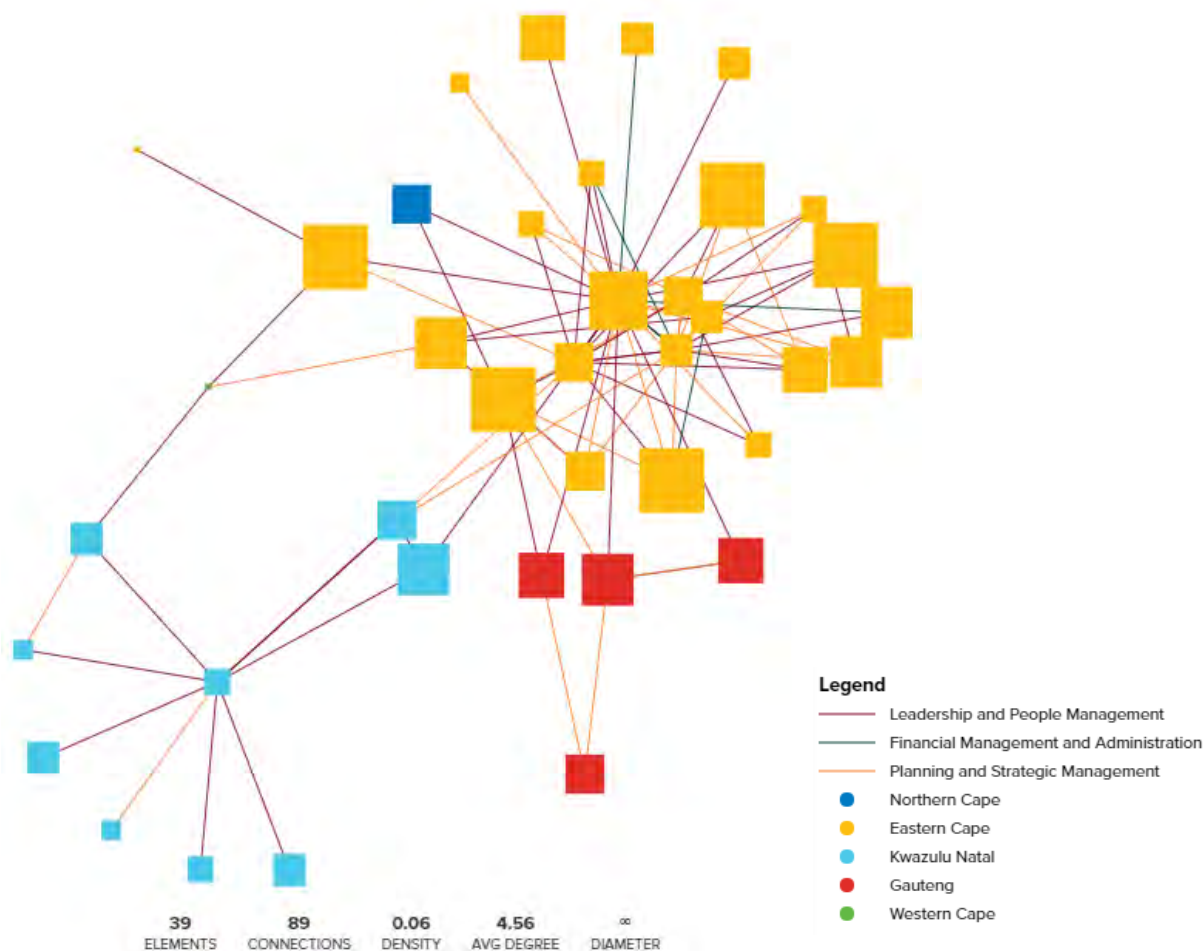


Figure 12: UFH Cohort I Sub-Network - Professional Relationships

#### *Key challenges that ASELPH graduates network and share about*

The primary topic of communication among fellows in Cohort I at UFH is “Leadership and People Management” (n=95), closely followed by “Planning and Strategic Management” (n=85). “Financial Management and Administration” (n=23) was cited as the primary topic of communications the least number of times. Of those relationships that indicated Financial Management and Administration as the primary topic, six are attributed to one individual: a Director of Hospital Services, Finance and Grants at the Eastern Cape Department of Health. Eleven of the twenty-three Financial Management relationships were between fellows from the same province, which is lower than the overall proportion of relationships within provinces (55%). Six relationships were characterized as professional and seventeen were listed as purely informational.

Of the additional topics of communication that respondents could select from, “Service Delivery and Innovation” was cited most often (n=112), followed by “Problem Solving and Analysis” (n=90), “Resource Management and Allocation” (n=87), and “Change Management” (n=86).

#### *Methods of Information Exchange*

The primary method of communication is text messaging (n=90), followed by email (n=46), phone (n=37), and face-to-face (n=30). Eighty-three percent of face-to-face interactions occur between individuals who indicated a professional relationship. Interactions most frequently occur on a monthly (n=95) or weekly (n=58) basis,

with only 1818 respondents citing daily interactions. Ninety-six percent of relationships were rated as being either always or usually helpful.

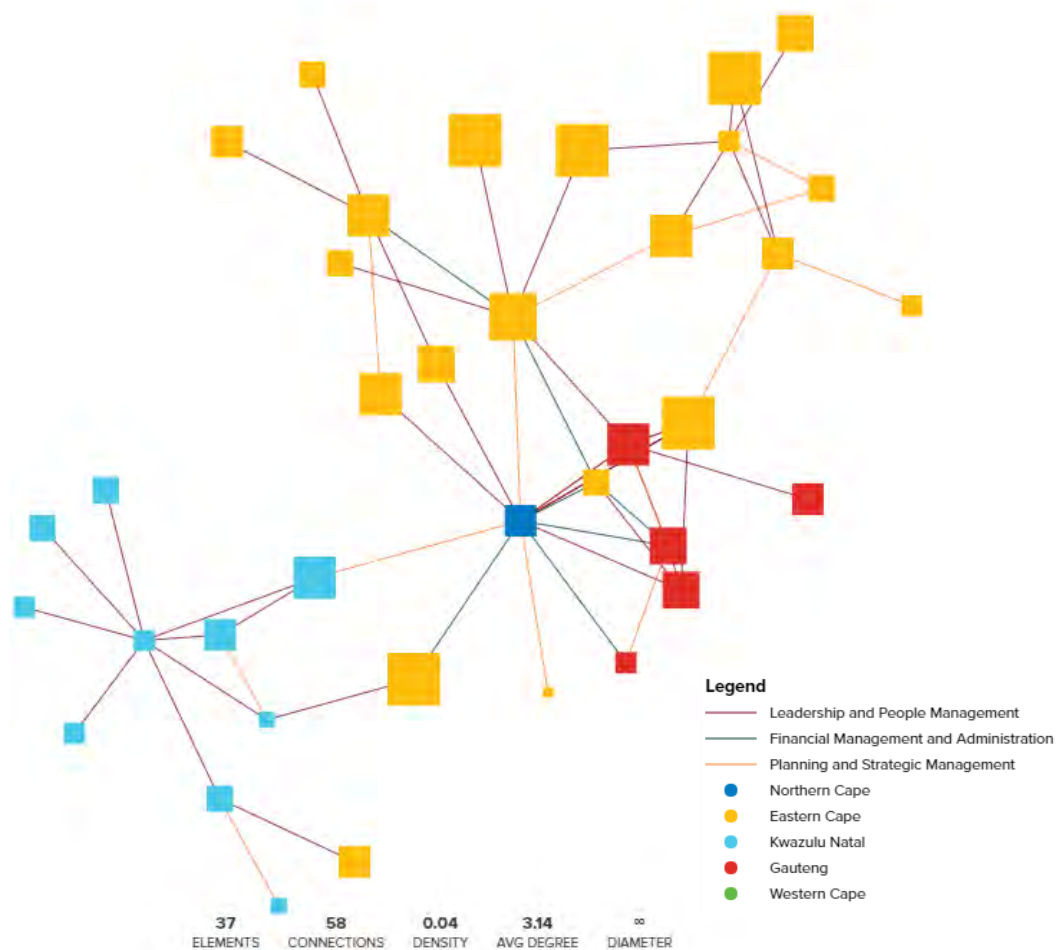


Figure 13: UFH Cohort I Sub-Network Map - Weekly Interactions

#### *Networking behavior and influence*

Fifty-five percent of the total relationships in Cohort I are between former classmates working in the same province. Eighty-nine of the reported relationships were characterized as 'Professional – We Work Together'. Fifty-three of these relationships existed prior to the program, which indicates that 40% of the professional relationships between fellows were formed during or after the program. Twenty-two of the 39 professional relationships that did not exist prior to the program were among members of the same small group.

Influencers in the network – as indicated by high betweenness and closeness centrality scores – tend to be at a director or CEO level and/or in a position that would indicate a level of subject-matter expertise. These same actors in the UFH Cohort I network, however, do not necessarily have the highest in-degree scores. In-degree scores by position tend to vary more than the other metrics. Lower in-degree scores ( $\geq 3$ ) seem to be associated with individuals in Human Resources or clinical positions. CEOs also appear more often in the bottom half of the cohort based on in-degree scores.

Betweenness Centrality			In-Degree	
Rank	Name	Value	Name	Value
#1	Garfield Ndlovu	0.126	Nomahlubi Mayekiso	9
#2	Nqobile Mkhwanazi	0.076	Madoda Xokwe	9
#3	Ntokozo Mkhize	0.054	Xolani Tofu	9
#4	Jacob Rakumakoe	0.051	Sindiswa Gede	9
#5	Thembinkosi Siyangaphi	0.046	Daniel Goon	9

Only one of the top 10 individuals by in-degree score indicated that they had been promoted since beginning the ASELPH program. Although we are not using out-degree as a measure of influence or centrality, it is worth noting that half of the top 10 fellows by out-degree (respondents who named the most connections) in Cohort 1 noted that they had been promoted since starting ASELPH.

## University of Fort Hare Cohort 2

The University of Fort Hare's (UFH) second ASELPH cohort has not yet graduated. The whole network map below shows a total of 82 relationships based on responses from 12 of 20 fellows. At the time of the survey, the fellows had not yet graduated. All fellows surveyed had completed the ASELPH coursework and were either in the process of or had already submitted their final dissertations. The geographic make-up of Cohort 2 includes fellows from three provinces: Eastern Cape (n=14), Kwazulu Natal (n=5), and Mpumalanga (n=1). The map below only displays seventeen nodes as three fellows who did not respond were not named by any of the respondents.

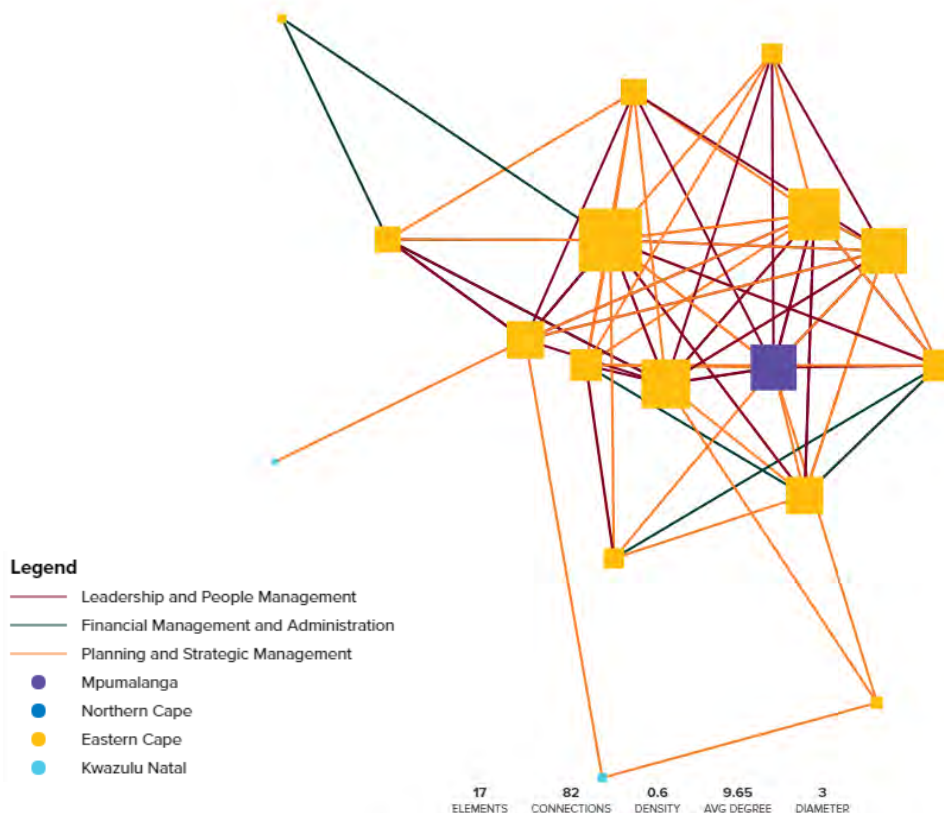


Figure 14: UFH Cohort 2 Whole Network Map

Forty-three of the relationships existed prior to the program and 32 of those relationships were among fellows from the same province. Forty-two relationships were characterized as “Professional – We Work Together.” Thirty-one of the Professional relationships existed prior to the program. Seven of the 11 professional relationships that did not exist prior to the program were among members of the same small group. Forty-five total connections were among members of the same small group.

#### *Key challenges that ASELPH graduates network and share about*

The primary topic of communication among fellows in Cohort 1 at UFH is “Planning and Strategic Management” (n=43), followed by “Leadership and People Management” (n=31). Again, “Financial Management and Administration” (n=8) was cited as the primary topic of communications the least number of times. “Service Delivery Innovation” was also the most commonly listed “other” topic of exchange (n=49). “Program and Project Management” was next (n=41), trailed by “Client Orientation and Customer Service” (n=29) and “Change Management” (n=28).

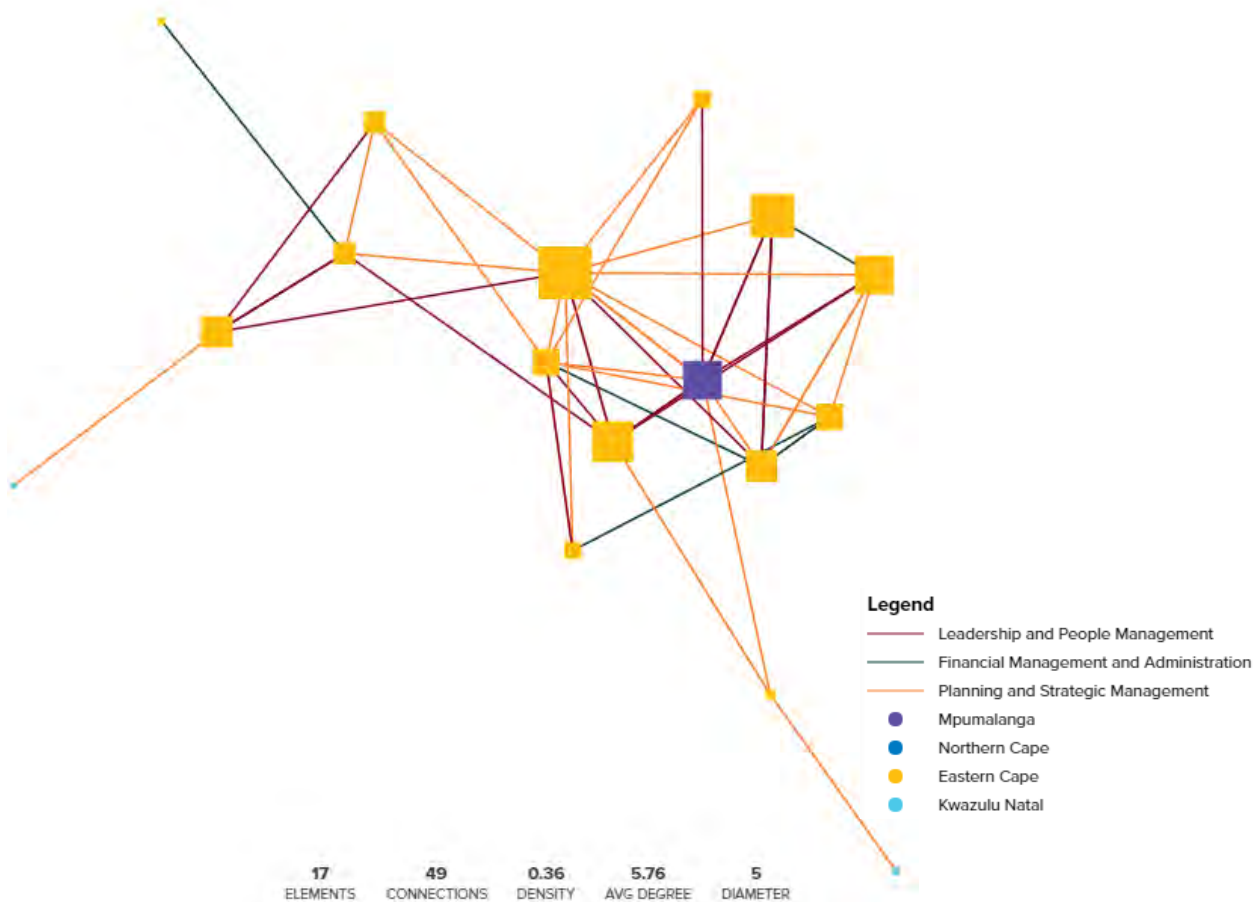


Figure 15: UFH Cohort 2 Sub-Network Map - Service Delivery Innovation Exchanges

#### *Methods of Information Exchange*

Cohort 2 reported much higher usage of phone calls (n=34) than Cohort 1 as the primary method of communication. Thirty-one of the thirty-four relationships reported communicating on a weekly or monthly basis. Ten of the eleven relationships marked as ‘Usually Helpful’ are associated with phone calls as the primary method of communication. Comparatively, 71% of relationships were indicated as ‘Always Helpful’. Text messaging was the next most commonly used form of communication (n=24). Email is used at a slightly lower rate (n=20), and face-to-face contact is much less frequent (n=4).

### Networking behavior and influence

In the Cohort 2 network, fellows with the highest in-degree scores are primarily in Deputy Director or Manager positions associated with clinics or primary health care facilities. Two of the four CEOs in this cohort were not listed as a connection by anyone and a third was only listed once.

Similar to Cohort 1, the only fellows who indicated that they had received a promotion (n=3) since the program were among the lowest by in-degree score (n=1). Divergent, however, is that only one of these individuals was in the top five by out-degree (n=9). The other two had moderate (n=5) and low (n=2) out-degree scores respectively.

There is a greater correlation in this network between high betweenness centrality and in-degree scores. This is likely because of the much smaller size of the network, and to a lesser extent, fewer respondents.

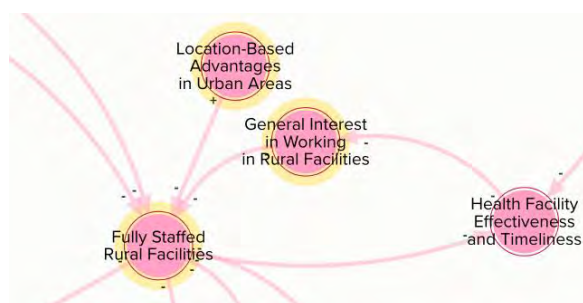
Betweenness Centrality			In-Degree	
Rank	Name	Value	Name	Value
#1	Nombuyiselo Mngweba	0.217	Noxolo Makinana	10
#2	Noxolo Makinana	0.214	Tembela Lunika	8
#3	Nqatyiswa Msengana	0.089	Nkosazana Sixam	8
#4	Nkosazana Sixam	0.073	Tobeka Ndukwana	8
#5	Tembela Lunika	0.049	Nqatyiswa Msengana	7

## CONCLUSIONS

Although ASELPH's primary focus is driving the improvement of executive leadership in the South Africa Health System, there are systems-wide leverage points where the Programme could play a prominent role. We present these leverage points as guidance for the ASELPH team as they consider how changes to the Programme may impact the larger system. This section is laid out to include an introduction to the current state of the challenge related to each leverage point followed by short- and long-term considerations for ASELPH. Each section ends with additional questions the ASELPH leadership team may want to examine as they determine the future of the program.

### Unequal Distribution of Health Workers in Rural Areas

Seven interviews, including Fellows, instructors, and those outside of the ASELPH Program, highlighted the unequal distribution of health workers in urban and rural areas. According to the Human Resources for Health Strategy, "In South Africa, 43.6% of the population live in rural areas. However, they are only served by 12% of the doctors and 19% of nurses."<sup>7</sup> To address this distribution challenge, a professor for the ASELPH program suggested a change in the approach for health worker recruitment. He recommended:



*Recruit young...smart people in the rural environment might opt to stay in their community. If you recruit a person that comes from a rural area but currently lives in Johannesburg, he has roots in Johannesburg and you have to uproot him. You need to recruit younger and show them there are opportunities in the rural areas.*

Although a change in the recruitment approach may help to alleviate the rural/urban disparity, it will most likely not provide enough change to reach an equal doctor to patient ratio. In 2004, the South African Government introduced the Rural Allowance Policy to address geographical inequalities in health personnel distributions across the country. The Government currently awards the rural allowance as a “non-pensionable fixed percentage linked to the annual salary notch” according to districts which are recognized as “rural areas”.<sup>22</sup> Although the Rural Allowance provides additional incentives for working in rural areas, money may not be the only factor considered in the decision to move. Another Fellow shared, “We tried the rural allowance [as an incentive for working in rural areas], but they also have families, [so they consider] if there are schools that you would want to send your kids to and housing is also important.”

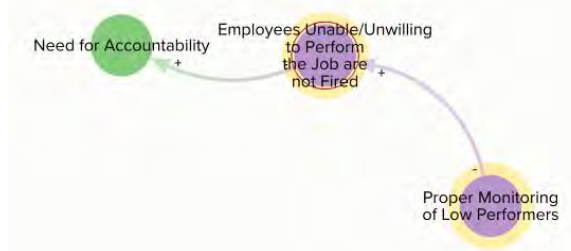
As a longer-term solution, one Fellow working at the district level suggested changing Rural Allowance to a tiered system that is set according to sub-district rather than district. She felt the amenities offered within a district are highly varied, thus, those living in the most rural areas should receive higher OSDs. She shared, “The rural allowance should not be a flat rate. Those in OR Tambo should get 6% and those in Amatole should get 8% allowance. In the extremely rural areas of Amatole, they should get 12%. This would attract doctors and pharmacists and nurses because there is a greater rural allowance.”

#### *Key questions to consider:*

- Could ASELPH provide recommendations for Rural Allowance modifications?
- What additional factors beyond pay are important considerations when deciding where to live and work?
- Could ASELPH Fellows conduct research to test various Rural Allowance modifications?
- How might ASELPH better prepare Fellows working in rural areas to recruit health workers?

### **Labor Relation Laws & Labor Unions**

The SPACES interview process surfaced a recurring perspective that one of the largest barriers to efficiency in the South Africa Health System is the involvement of labor unions. Twelve interviewees mentioned the importance of Labor unions. Most of those mentions stated that the participation of labor unions results in additional bureaucratic steps in the decision-making process regarding workers’ rights and protections. An interviewee working at the provincial level shared, “There is a structured way of engaging [with labor unions]. We bargain and engage on a number of issues through the chamber [which consists of] the representation of the unions and the representative of the employer.”



An interviewee familiar with multiple functional areas of the South Africa Health System explained the extensive process for firing someone: “The labor relations laws are quite strict. You have to go through a whole process to fire someone. You have to have three warnings and then you can be dismissed/fired.” This interviewee went on to explain that not only is the process lengthy, but leaders are not using the process because they do not feel empowered to tell their workers, “[Bad] behavior has repercussions.” ASELPH might consider providing guidance on how workers empower workers to understand and enforce labor relations laws. ASELPH should consider how they might better prepare Fellows to manage this process.

<sup>22</sup> Department of Health. (2004) PHWSBC Resolution No. 2 of 2004: Revised non-pensionable recruitment allowance, referred to as ‘rural allowance’, <http://www.doh.gov.za/docs/index.htm>

Another interviewee working at an NGO who spoke about several functional areas of the health system suggested the need for more flexibility from the labor force.

*South Africa has good labor legislations. It is difficult to fire someone. In the DOH [Department of Health] it is almost impossible...if you fire someone you will end up in the labor court. I'm not saying the unions are not good; you need to protect your workforce.*

However, there should be a balance between protecting the workforce and protecting the employer. The difficulties regarding labor relations laws ultimately result from the lack of accountability measures in the South Africa Health System. In many cases if monitoring and evaluation structures were to be improved, there may not be the need for such extensive processes to protect the employee. All actions completed by the employee and employer would have a documented set of processes and expectations.

#### *Key questions to consider:*

- How might ASELPH Fellows find alternative ways to establish accountability within the constraints of the current South Africa Health System?
- How might ASELPH better prepare Fellows to manage HR processes?
- Could an ASELPH Fellow conduct research regarding the relationship between additional accountability measures in the health system and relations with the labor unions?

### **Increased Accountability Measures**

Interviewees mentioned various ideas and methods for increasing accountability throughout the South Africa Health System. Forty-seven percent of interviewees across all functional areas of the health system mentioned the need for additional accountability measures at all levels of the South Africa Health System, making increased accountability measures the most recommended system-wide change. Interviewees at the district and provincial levels, across four functional areas (SCM, Service Delivery, Finance, M&E) stated that the tiered levels of government give people the opportunity to bypass accountability measures by suggesting that another person is responsible. With the tiered levels of government, executive level management is unable to ascertain who might be contributing to the challenges. Thus, consequence management, applying the appropriate consequence when a task is not completed properly, cannot be implemented because there is no evidence clarifying who is contributing to the challenge.



One suggestion from an interviewee working at the national level was to introduce five-year terms of employment. The interviewee stated, “At end of five years, if there is no significant movement in quality measures or other types of measures, then you just go and get a new manager.” Firing a manager if they do not meet expectations would increase the level of accountability in the system; however, as mentioned above, the current labor relations regulations require a lengthy process and thus managers find it difficult to fire people. Another interviewee also working at the national level recommended that South Africa Health System leadership take a more stringent approach to poor performance and emulate how other countries like Rwanda handle management problems: by “firing people that don’t deliver.” Another suggestion mentioned by multiple interviewees was to take an approach similar to that of the private sector. Specifically, individual contracts for each healthcare provider helps ensure that doctors and nurses are held accountable for their outcomes. One interviewee suggested taking the private sector approach for contracting even further by including goals in the

contract. For example, the contract might include an indicator such as: “Test 95% of all adult patients you assess in this hospital for HIV.”

The interviewees did not converge on what level of government should ultimately be held accountable for enforcing compliance. For example, one interviewee said that the provincial level should be held responsible; however, another interviewee said each doctor, nurse, and CEO at the hospital should have his or her own contract to ensure accountability. One interviewee working at an NGO even suggested an overhaul of the current accountability mechanism to make the entire health system centrally accountable by distributing money only when actions are completed fully and correctly. Although there was not a convergence of opinions, the recurring theme of accountability throughout the SPACES interviews signals a need to further explore accountability solutions within the South Africa Health System.

#### *Key questions to consider:*

- How might ASELPH support further exploration of accountability mechanisms?
- How might ASELPH support Fellows to develop smaller accountability mechanisms to apply within their places of work?

### **Contract Management with Suppliers**

Measures such as the early warning system to identify drug stock-outs before they happen have significantly improved SCM for the South Africa Health System in the past year. However there still needs to be improvements to ensure zero stock-out days for essential medicines. Several interviewees suggested that the primary barrier to reaching 100% availability of essential medicines is not the national supply chain, but rather the main barrier is poor contract management between pharmaceutical suppliers and the DOH. Many interviewees stated that some of the suppliers are unable to supply the quantity specified in their contract. In order to combat the issue of poor-performing suppliers, one interviewee working at the district level suggested the district should be given the “authority to actually penalize the suppliers” if they do not perform to the standards specified in the contract. As an alternative to the district penalizing suppliers, the government could develop an additional feedback loop to inform the DOH when suppliers are not performing properly. For the feedback loop to function appropriately, the DOH would need to act quickly on information provided from the districts.



Additionally, an interviewee working in SCM at the district level suggested that the introduction of a system for continual monitoring, evaluation, and learning (MEL) might improve supply chain operations. This MEL framework should include a component specific to contract management, which is capable of evaluating contracts through the creation process, throughout the duration of the contract, and after the close of their term agreement. This system could “ensure that the contracts are done well, and look at non-performing suppliers,” to support actions taken when suppliers are not performing. This same interviewee working at the district in SCM, also indicated that if suppliers understood direct, sometimes life-or-death implications of not meeting the contracted quantity, they may be more inclined to meet the expected quantity. A MEL system could also provide further transparency regarding contract creation and the role of each level of the government (national, provincial, and district).

Contract management could potentially benefit from an improved relationship and understanding between suppliers and the government. One interviewee working at the national level explained an intervention (s)he introduced last year to improve working relationships with the suppliers called “show and tell.” (S)he explained

that they “asked all the suppliers to come and show [them] the latest technology and everyone loved it. And there was stuff out there that we didn’t know about that can really make a difference.” This process permits suppliers to better understand the implications of their work and helps health professionals better understand the new medicines and technologies being introduced.

#### Key Questions to consider:

- How might ASELPH use its influence to advocate for additional contract management training for individuals outside of the program?
- What additional skills will executive health leaders need to support a new method of contracting?

### Mentorship

The South African Government has incorporated mentorship into much of its programming. For example, in 2012 the South African government began the District Clinical Specialist Teams (DCSTs) program. This program aims to reduce the variance in quality of care provided at health facilities and enhance clinical governance at facilities. The DCSTs help to support health facilities growth through teaching and mentorship activities. However, one study concluded due to role ambiguity (i.e., unclear job expectations and demand) the DCST program has not delivered the expected outcomes.<sup>23</sup>



In addition to the government realizing the importance of mentorship, 28% (n=13) of interviewees also highlighted its importance. As a result of this realization many health facilities are implementing their own internal mentorship policies. For example, the interviewees at Steve Biko Academic Hospital discussed their mentoring policy, sharing that the South Africa Board of Personnel Practice saw a need for mentorship at the senior leadership level and as a result, introduced a mentorship program. The Steve Biko Hospital interviewees were the only group to mention a formal mentoring policy. Other interviewees who mentioned mentoring referred to informal mentoring between senior and junior staff or commented on the need for a formal mentoring policy in the South Africa Health System. One interviewee shared the importance of mid-level management mentoring and the incorporation of strategic planning and knowledge management into all mid- to senior-level positions.

*What we need to strengthen is mentoring. How does my supervisor mentor me with the understanding of succession planning and how to transition? If I get a job somewhere else—if I [am actively] mentor[ing]—there is someone that can fill my role. But succession planning is a problem within the department because there is not time for succession planning at [the] district, provincial, and facility level.*

As stated in the internal recommendations section, several interviewees specified that a formalized long-term mentorship program between graduated Fellows and non-Fellows could potentially help ASELPH reach scale. However, there is a need to incorporate additional policies to clarify the role of mentors and further explain their role *not* as a regulatory body, but as advisors.

#### Key questions to consider:

- How might ASELPH demonstrate the importance of mentorship across the health system?
- In what ways can a good mentor provide support to their mentee?
- How can this mentorship be incorporated into the many functions of the South Africa Health System?

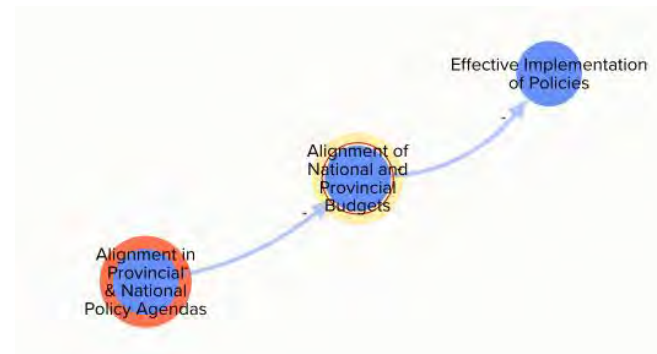
<sup>23</sup> Oboirien, K., Harris, B., Goudge, J., & Eyles, J. (2018). Implementation of district-based clinical specialist teams in South Africa: Analysing a new role in a transforming system. *BMC Health Services Research*, 18(1). doi:10.1186/s12913-018-3377-2

## Strategic Planning for Budget Allocation

South Africa is one of the highest government investors in healthcare on the African continent. The government spends 13.8% of its annual expenditure on healthcare with a per capita spending of ZAR 3,155 per person per year.<sup>24</sup>

Only 2.8% of the annual health budget is spent at the national level and the remaining 97.2% is transferred to the provinces, which subsequently allocate funds to their districts. Each province receives a different proportion of the budget based on population. The individual provincial budgets range from 2.4% to 22.0% of the 97.2% of the budget allocated to provinces. Improper budget allocation

was the top external barrier identified by interviewees working at all levels and in all functions of the health system.



Although South Africa's health expenditure is relatively high compared to other middle-income countries, interviewees identified budget allocation as the top barrier preventing health workers from effectively doing their jobs. Interviewees highlighted several factors that could be contributors to budgetary limitations. One interviewee working at the district level highlighted, "We have this dual management so we have a duplication of roles in the [provincial] department and district. It's about not bloating the management structure and seeing where we have inefficiencies, but people are not seeing that...we are creating a shortage of resources." In order to prevent this duplication in roles, it may be beneficial to review roles and descriptions of responsibilities to ensure that there is no overlap between the district and provincial levels. Additionally, changes to the accountability measures regarding specific indicators of achievement for each position could help provide additional clarification.

Several interviewees stated that the decisions made and policies created at the national level may be too generalized and do not take into account the provinces' needs. One interviewee working as Head of Department (HOD) at the provincial level shared:

*[I am] not given the leeway to allocate the budget. This year I got an increase but all of the increased budget was supposed to go to infrastructure... Infrastructure is not our main problem... When you build a new hospital you then need to have money for staff and supplies and the budget does not go up for the other things. So you find that quality of service goes down in every hospital...When they make a new policy, the budget does not also go up. You will find that the policy changers do not look at the ripple effect.*

An interviewee working at the provincial level shared a prime example of when policy makers did not take a systems-wide perspective during policy creation— Occupation Specific Dispensation (OSD). OSD is a policy created with the purpose of improving the government's ability to attract and retain skilled employees through remuneration. One section of OSD refers to the translation of nurses. One interviewee explained how this process works, "If you are a nurse, there are different categories [enrolled nurse, registered nurse, enrolled nursing assistant]. If you go to school, you are on a higher level and the pay scale should follow." The introduction of OSD requires that nurses be given a salary according to their category of nursing, yet the OSD policy did not provide funding for this translation of nurses. This employee went on to explain that "This policy has [long-term] financial implications and you find that has not been funded for."

<sup>24</sup> South Africa, UNICEF. (2018). *HEALTH BUDGET SOUTH AFRICA 2017/2018*. Retrieved November 16, 2018, from [https://www.unicef.org/esaro/UNICEF\\_South\\_Africa\\_--\\_2017\\_--\\_Health\\_Budget\\_Brief.pdf](https://www.unicef.org/esaro/UNICEF_South_Africa_--_2017_--_Health_Budget_Brief.pdf)

One interviewee working at the provincial level in finance shared his/her proposed PhD research regarding provincial budget allocation. (S)He claimed that the budgetary problems are “deep-rooted systemic issues” that must be fixed by implementing a different budget allocation method. His/Her proposed method begins by “equalizing the playing field” to allow under-developed provinces to become desirable locations for qualified health professionals. In order to create a more equitable playing field, he proposed a modified balance score card:

*Per capita allocation will look at certain criteria like budgeting. If you meet a certain score you will get xx amount of funding. It will look at social determinacy of health and you receive a score [for that portion]. If this was a budget 50% should be per capita and the other 50% should be the balanced score.*

A lens geared towards strategic planning and long-term thinking could potentially alleviate some of the challenges associated with budget allocation.

#### Key questions for ASELPH to consider:

- How might ASELPH better equip Fellows to design innovative approaches to working within budgetary constraints?

### NHI Specific Recommendations

NHI aims to transform the two-tiered health system – public and private sectors – into a unified health system. NHI will move South Africa towards universal health coverage (UHC) with the goal to provide quality health services that are delivered equitably, affordably, efficiently, and appropriately to all citizens. The preparation for NHI has begun with pilots in eleven initial districts and re-engineering of PHC with ideal clinics. Although preparation has begun, the specifics of how implementation would be carried out and funded were unclear until the distribution of the 2017 White Paper on NHI. This White Paper aims to provide a policy framework for transforming the manner in which healthcare services are financed, purchased, and provided.<sup>25</sup> According to the interviewees, many changes must occur in the South Africa Health System before NHI can successfully commence. The top two recommendations are to improve Service Delivery and enhance collaboration between Private and Public sectors.

#### Improve Service Delivery

The primary concern interviewees voiced regarding the successful implementation of NHI was the improvement of service delivery. Many individuals specifically referred to the imbalance of services offered across the country, declaring, “if you don’t have the quality that is required then you are going to burden the few [facilities] that are good. You need to make sure that the health system [functions] so that wherever [the patients] go they will get the same services.”



Few interviewees cited the changes that have already occurred in particular locations (e.g., the pilot districts and in ideal clinics) as a result of the preparation for NHI, including shorter waiting times, improved record management, and improved patient care.

With regard to improving service delivery and creating a consistency among facilities, one interviewee suggested “customer driven services.” This interviewee explained that with NHI the patients will choose which facility to go to and thus facilities must be patient-centered to ensure that they are a competitive option for patients to choose for treatment. Another interviewee emphasized the importance of a functional referral

<sup>25</sup> South Africa, Department of Health. (2017). *National Health Insurance for South Africa*. Pretoria: Department of Health.

system with strict rules in which the structure below must refer you up in order to be seen at a hospital for non-emergency cases.

The last highly referenced topic was the resource needs (including material and human resources) required for facilities to provide quality care. One interviewee working as a district clinical specialist shared, “We need more staff. As much as we are trying to implement these programs, we need people to do them and have the skills. How do you run a clinic without a clerk? We also need more of the lower category of nurses.”

#### *Enhance Collaboration Between Public and Private Services*

Nine interviewees spoke about various opportunities for the public and private sectors to improve the ways they collaborate and share information, technology, and procedures. With the roll out of NHI, several interviewees mentioned the importance of the health system’s ability to adapt by providing services that are a combination of the public and private sectors. One interviewee working in a South African NGO suggested that the new system health should be “something in between [private and public healthcare] with the private efficiency and accountability and the public structure.”



Many of the adaptations to the current system involve the public sector borrowing from the private sector. For instance, five interviewees stated that the billing structure of the public sector should be standardized and modeled after the private sector’s structure. This approach would result in one cumulative bill rather than multiple bills being paid at each department, thus, helping to streamline the process and improve efficiency. Another possible adaptation is the implementation of a universal electronic patient record system. The private sector already employs an electronic patient record system. This e-record system could be scaled up so that all facilities are able to see all records of citizens enrolled in NHI. This system would help ensure that patients receive appropriate care and improve the health system’s efficiency.

#### *Key questions for ASELPH to consider:*

- How might the ASELPH curriculum incorporate NHI-focused considerations such as the re-engineering of PHC and introduction of ideal clinics?
- How could ASELPH faculty and Fellows provide support/research for the development of adaptations needed for NHI implementation?

### **Networks of leadership and information exchange among diverse locations and functions in the health system**

#### *Key challenges that ASELPH graduates network and share about*

The most commonly cited primary topic of communication is “Leadership and People Management.” Only one cohort selected “Planning and Strategic Management” with greater frequency, and “Financial Management and Administration” was the least cited topic by all five cohorts. Interestingly, in selecting additional, more specific topics that fellows communicate about with their peers, leadership and management issues were less likely to appear more frequently than issues of strategy or strategic planning. The most common of these more specific topics of communication for the cohorts across the board is “Service Delivery Innovation.”

#### *Methods of Information Exchange*

ASELPH graduates across universities and cohorts also seem to communicate with similar frequency on the same topics. To be expected, there are very low instance rates of face-to-face interactions between individuals who do not have a professional relationship. Text messaging is the most common method of communication. This, combined with the general frequency of interactions, might indicate that ASELPH fellows are communicating more about specific issues as they arise on more of a one-off basis.

### *Networking behavior and influence*

The top graduates from ASELPH cohorts based on in-degree and betweenness centrality scores appear to have a few general characteristics in common. These individuals are more likely to be at a director or deputy director level as opposed to a CEO or doctor, for example. Despite similarities in their position level, most cohorts show a diversity of representation among differing health departments or expertise.

It is possible that outliers to these patterns can be accounted for based on various personality traits and social tendencies, but this information cannot be gleaned directly from the SNA data.

Interestingly, small group membership does not appear to be as significant as one might expect in predicting post-ASELPH relationships. At UP, where the cohorts have a more diverse geographic representation, small group members make up approximately one-third of current connections. At UFH, where small group members reported more current relationships with one another – an average of 60% between the two cohorts – there was also much less geographic diversity and more reported pre-existing relationships, which likely account for some of the difference.

Geographic diversity – or more balanced geographic representation – appears to correlate to more absolute connectivity between fellows. For example, the two UFH cohorts are less geographically diverse and fellows tend to network among fellows within their own provinces – with the exception of a few bridging actors. At UP, there is a more even distribution of fellows from a greater number of provinces. Based on the SNA data, this diversity has led to the formation of new formal, professional relationships between alumni from different provinces that did not exist prior to the Programme.

## **RECOMMENDATIONS**

### **Qualitative Analysis**

Interviewing health executive leaders from six functional areas of the South Africa Health System presented an opportunity to synthesize a diverse set of perspectives and recommended actions. These consolidated recommendations relate specifically to the ASELPH Programme.. There may be instances in which the leadership team of the ASELPH Programme has either already considered such recommendations or has begun implementing them. However, the interviewees in this evaluation indicated they were not aware of these recommendations or believed that the recommendations should be scaled. The themes that emerged most frequently (mentioned by three or more interviewees) are described in detail, followed by questions for the ASELPH Program to consider as it looks to scale for systems-level impact.

The SPACES research surfaced more than 75 recommendations for the ASELPH Program, many of which can be clustered under similar themes. Each thematic area will include an introduction to the current state of the ASELPH Program with respect to that theme, followed by short- and long-term recommendations. Each section also includes additional questions the ASELPH leadership team may want to consider as they determine the future of the Program along with an example of its potential impact as illustrated in the systems map accompanying this report.

### **Mentorship**

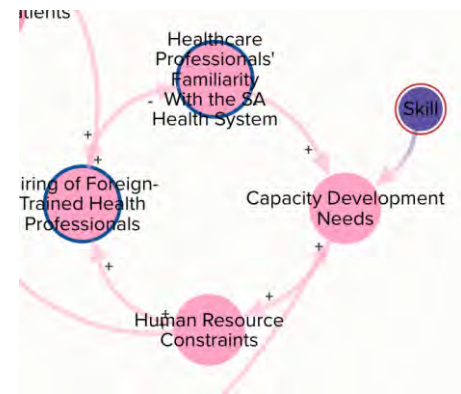
A wide range of interviewees including Fellows, instructors, and those outside of the ASELPH Program stressed the importance of mentorship. One instructor recommended that the ASELPH leadership team consider implementing a more formal orientation course for mentors that are currently involved in the ASELPH Program. The instructor clarified that “there is a willingness that does not always equal the capacity to mentor.” Several of the fellows stated the need for additional guidance as they increase the management responsibilities. Fellows requested post-Program support to help with the transition to more senior positions and/or as they began to apply new skills and management techniques at their work.

Multiple interviewees who were not part of the ASELPH Program suggested that a lack of mentorship contributed to a dysfunctional health system. For example, one individual working in the finance function of the health system called attention to the fact that hospital managers lack examples of “best practice” within the system. Therefore, when individuals move to a new position, there is minimal guidance on how to adjust to the new role. The inadequate information surrounding processes and procedures can cause inefficiency and confusion around staff responsibilities which makes it difficult to maintain a level of enthusiasm for the work.

In addition to Fellows, two of the instructors within the Program highlighted their concern around the capacity for a program like ASELPH to break the cycle of ineffective leadership in the South Africa Health System without scaling leadership capacity at a faster rate. As one instructor stated, “Good leadership moves up and out,” suggesting that it remains difficult to retain strong leaders in middle management positions, particularly in the public sector. When a staff member obtains management skills, they result is often a promotion or a transfer to a new department, leaving the cycle of poor leadership unbroken. To disrupt this pattern, the ASELPH Program might consider how to incorporate a module on mentorship to enable Fellows to feel confident and equipped to not only lead, but to also mentor their colleagues.

#### *Example of ASELPH's ability to positively impact the South Africa Health System*

Education of Health Workers (Loop 7): the informal mentorship structure currently within the ASELPH Programme has called attention to the importance of scaling a more structured mentorship component. Executive leaders tasked with implementing a new project, adapting to changing policies, or managing staff would greatly benefit from continued learning in the form of a mentor.



#### *Key questions to consider:*

- What are the key skills a mentor needs to effectively guide Fellows in the ASELPH Program?
- How does effective mentorship impact the ASELPH Fellows? How can the effects of mentorship be codified/incorporated into the Program?
- Should there be a longer-term component of mentorship? For how long? On what scale?

### **Use of Technology**

A key skill lacking in the health system involves the use of technology. The inadequate use of technology may be attributed to the inaccessibility of appropriate technology coupled with the lack of familiarity working with computers. The lack of technology has exacerbated problems in the South Africa Health System including poor record keeping, difficulty embedding accountability structures into the monitoring and evaluation function, and an inadequate online referral system. Within the ASELPH Program, technology limitations affect the ability to scale course size and engagement. One instructor, when asked what is most needed to help Fellows manage the time intensive course work stated, “[using] technology with more confidence. I think the biggest thing is to feel comfortable to use technology. Some of [the Fellows] have difficulty in searching and finding information.”

The ability to navigate basic technology as an executive leader in the South Africa Health System correlates strongly with effective communication skills. Within the ASELPH program, computer literacy is also becoming increasingly important, as Fellows are encouraged to deepen their research and presentation skills. Additionally, several instructors we interviewed discussed restructuring elements of the Program that would include more remote coursework. In order to prepare Fellows for the dynamic changes technology will bring to the health sector and to retain the rigor of the ASELPH Program, computer literacy is a paramount priority.

To enhance the use of technology, the ASELPH Program might consider conducting introductory webinars online. These lectures, prepared by instructors using a platform such as “Zoom,” would allow for Fellows to engage with the material on their own time and at their own pace. Introductory lectures in this format allow Fellows to engage with a new topic and prepare them for the interactive sessions within the course. One instructor offered another recommendation of “flipping the classroom”: a method in which most lectures are delivered online and Fellows’ in-person class time focuses on questions and interactive engagement with the material. Using technology to hold online webinars or interactive sessions allows for the possibility to make in-person teaching sessions shorter and/or specifically focused on areas that were unclear or need further explanation.

While these might be very promising recommendations, it is worth noting that course instructors often serve as the primary barrier to technology integration because they are not comfortable using interactive platforms or providing webinar-style instruction. One interviewee pointed out the need for more support from ASELPH staff to instructors: “Some of the lecturers are a bit afraid to use the technology. If a professor only teaches in March, by the time he comes next year he has forgotten what he learned [about technology-led coursework] last year.” In this case, a cost-benefit analysis might be a helpful way to assess the benefits of investing time in technology-focused instructor support.

#### *Example of ASELPH’s ability to positively impact the South Africa Health System*

Communications (Loop 1): the relationship between prioritization of communication, adequate ICT infrastructure, and staff skills can be seen in the photo. Training Fellows to be comfortable using a computer and identifying opportunities to use technology will increase efficiency and accuracy of data. Technology skills will play an increasingly important role across all functions.



#### *Key questions to consider:*

- How might the ASELPH Programme use technology to improve the delivery of material?
- How might the ASELPH Programme use technology to improve student engagement?
- How would ASELPH design the Programme differently if our Fellows were all computer literate?
- Which executive training programs are using technology successfully at scale?
- How might the ASELPH Programme adapt successful approach(es) of other executive learning programs to meet the needs of its students / faculty?

### **Communication Training and Continued Learning**

When asked the question, “What skills are most critical to you to do your job effectively?” nearly half of the interviewees indicated that communication skills are essential. Within the Programme, communication skills are demonstrated across multiple formats and functions:

- Online: pre and post-training requires computer literacy skills and follow-up
- Between faculty and Fellows: Fellows can practice providing constructive feedback and active listening
- Translating knowledge to colleagues: Fellows practice synthesizing information and sharing it using the appropriate format (PowerPoint presentation, written, or oral speech)
- Determining how to introduce learnings to the workplace.

Many of the challenges related to effective job performance can be traced back to communication issues (see the Kumu Systems Map for examples). Aiming to mitigate these communication challenges, the ASELPH Programme trains Fellows on meta leadership. Several Fellows specifically mentioned the meta-leadership training—which includes lessons in managing up and managing laterally—has greatly benefited their

professional work. When Fellows were asked to provide examples of how they used the communications skills in their work, “communication skills” took on different meanings, such as the ability to negotiate:

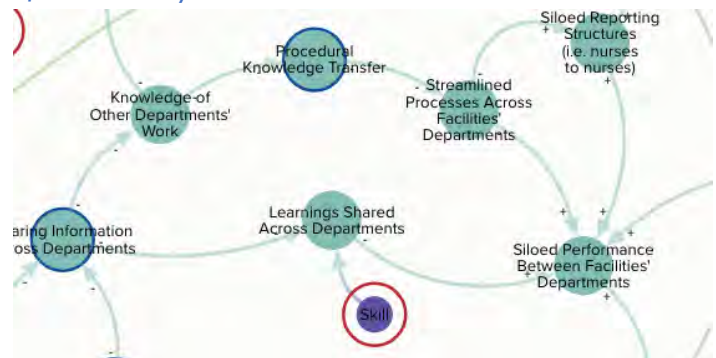
*“We learned about handling problem solving and complex issues. [We now] have language to identify things [such as explaining in a constructive way] what you are trying to do, what you have done, and define what you are anticipating or [the information] you are not finding. When I talk to the CEO, I can say, you know, I think this path we are taking is not taking us there, and I can explain why.”*

Interestingly, when Fellows were asked to provide examples of pertinent skills, many would use the terms “leadership” and “communication” interchangeably. For example, when one Fellow was asked to elaborate on why she emphasized communication as a top skill required to do her job effectively, she stated, “you must have good leadership in helping [everyone] understand the role of the office (OHSC) and the goals. You find senior leaders knowing, but there is a gap on how that is translated further down.”

Should ASELPH focus on scaling the reach of the Programme, strengthening its network will greatly benefit its ability to influence stakeholders, support graduates, and seek opportunities for financial support. To do so will require an investment in maintaining relationships with faculty and Fellows after graduation. Currently, when Fellows were asked about engagement with the Programme upon graduation, all Fellows indicated some degree of interest in remaining in contact with their peers and instructors. However, most of the Fellows suggested it was a self-driven initiative, limiting knowledge sharing and relationship development to their immediate cohort. Considering new ways to strengthen communication channels between Programme alumni would allow for deeper knowledge retention and value to the Program.

#### *Example of ASELPH’s ability to positively impact the South Africa Health System*

In Loop 1: Communications, The meta leadership skills taught throughout the ASELPH Programme can disrupt siloed performance between facilities’ departments and improve communication between organizations with strong hierarchies in place. Developing meta leadership skills also contributes to shared learnings that can result in more effective joint ownership of goals and outcomes along with streamlined processes across departments.



#### *Key questions to consider:*

- How might faculty and staff support strengthening the ASELPH network across cohorts?
- How might ASELPH Fellows continue learning from each other in a more structured and intentional way?
- For those Fellows who have a strong ASELPH network (using the Social Network Analysis for reference), (1) what do they do differently? (2) Why are they interested in staying connected?

### **The Need for Leadership at the Facility Level**

The National Department of Health led by Dr. Motsoaledi declared that a key priority under its 10 Point Plan is investing in leadership to achieve a more functional health system, thus underscoring the importance of programs like ASELPH.<sup>26</sup> The interviews conducted by the SPACES team affirmed the need for health leadership, particularly with the imminent introduction of National Health Insurance. Interviewees who participated in the ASELPH Program strongly felt that their participation empowered them to be better

<sup>26</sup> <http://www.cde.org.za/wp-content/uploads/2012/12/REFORMING%20HEALTHCARE%20IN%20SA%20full%20report.pdf>

managers and leaders. At the same time, many interviewees, in line with research shared by the South African Medical Journal<sup>27</sup>, also emphasized that middle managers and facilities managers would benefit the most from a program like ASELPH.

The suggestion to focus on developing the health systems leadership of middle management came from interviews with senior health leaders at the national, provincial and district levels. Leaders from the finance and service delivery functions were emphatic that the greatest leverage point within the health system is upskilling facility managers. When the SPACES team asked an interviewee working at the national level in the finance function how decentralization of decision making might occur, his response highlighted the lack of trust in the system: “We can’t trust facility level management.” An interviewee at the provincial level in Mpumalanga complained about the lack of management skills found within the health sector at the facility level: “I don’t need to be a doctor, I need to be an administrator.”

Based on both direct and implied comments from interviewees on accountability and change management, one of the strongest leadership leverage points in the health system is at the facilities manager level, a position that carries high visibility and potential for cascading impact. Interviewees suggested that additional skills training was needed to support facility manager, particularly planning skills to support the audit process and budgeting, financial skills, and the ability to incentivize staff.

#### *Example of ASELPH’s ability to positively impact the South Africa Health System*

Education of Health Workers (Loop 7): the competition between public and private sector for qualified health professionals is greatly affected by leadership at the facility level. Involving facilities managers in ASELPH or adapting the program to address the bottleneck that currently exists—a need for additional training for facilities managers—increases the potential for large-scale positive impacts the ASELPH Program has in the South Africa Health System.



#### *Key questions to consider:*

- Should the ASELPH Program focus on training more individuals at the facilities level? Why or why not?
- After participating in the ASELPH Program, which Fellows have had the greatest “ripple effect” of impact?
- What factors influenced by ASELPH enabled this to happen?
- How might the ASELPH Program scale to offer more training for facilities managers?

### **Course Offerings**

The overall consensus of individuals who had participated in the ASELPH Program was that the Program focused on upskilling Fellows with skills that directly related to their current position. Over half of the interviewees recalled examples of learning how to take a systems approach to their work (recalling the control knobs activity). The majority of interviewees who participated in the ASELPH Program also pointed to the Program’s leadership skills training: how to influence and incentivize both individuals they managed and those who managed them. Fellows who completed the Program were asked to reflect on topics that could have used more course time, and what might need to be added to maintain peak relevance in a quickly changing environment.

- **Finance:** Fellows emphasized financial skills as the area in greatest need of additional training support. We hypothesize this is partially due to the lack of previous experience that many Fellows have on this topic and the increasing need for these skills as Fellows’ financial responsibilities increase as they are promoted to higher positions. As seniority level increases, it becomes more important to have general management skills in addition to technical expertise.

<sup>27</sup> <http://www.samj.org.za/index.php/samj/article/view/7480/5434>

- **M&E:** The need for greater accountability was a theme across health system functions. Fellows expressed an interest in identifying more practical ways they can incorporate M&E practices into their work to hold individuals accountable as well as practice adaptive management.
- **Skills to support NHI:** The SPACES team asked interviewees to consider what skills health leaders would need in order to properly support the rollout of NHI. Interviewees from multiple health systems functions indicated the need for change management skills and succession planning. Individuals we interviewed in supply chain management and more senior leadership positions highlighted the increasing importance of contract negotiation and management skills, particularly within the procurement function.

To enable executive health leaders to confidently address a rapidly shifting health landscape, there is a need for the ASELPH Program to emphasize how to translate what is learned in the course to continuous learning on the job. The Program should continue to ensure that Fellows are able to identify and actively pursue information that is relevant to their work such as research, problem solving, and critical thinking skills. For example, a senior health executive at the national level emphasized how leaders with critical thinking and problem-solving skills could greatly benefit the health system:

*Policy approaches get adopted that are not best suited for the problem. There is a disconnect to the problem you are trying to solve. For example, in South Africa we engage patients on the quality of the service they receive. In the public sector you see 80% of happiness and yet we know that what they are receiving is not what they want. And what you find is that the way the research has been done is that they are asking if they are happy rather than their wait time, etc.*

To provide varying perspectives that might encourage ASELPH Fellows to seek out new information or connect with others outside of their department/function, the Program might consider hiring more instructors from outside of the health sector. Professionals with specific translatable skills (finance, contract management, negotiation, etc.) would introduce new perspectives to Fellows who have spent their career strictly in the health sector. As one senior health official from the Gauteng Province noted:

*I think we have to have a different way of selecting people for specific programs. I would be bored sitting in a program about health. It would be my peers telling me what they know. Those two [executive management] courses [I took] had nothing to do with health. I looked at supply chain but it didn't have to do with health. It is not using a recipe; that is not what leadership is, that is management.*

Additionally, Fellows would benefit immensely from a strong foundation in skills that support the learning process as opposed to their specific role or function. For example, introducing optional online courses may be a way to “even the playing field,” allowing for Fellows who may need supplementary skills development to have additional time to prepare for the rigor of the course. These short courses could cover topics such as computer literacy, how to conduct research and write a research paper, and keys for delivering compelling presentations. Several interviewees also emphasized the need for the ASELPH Program to offer short-term or topic-specific courses to their colleagues. If ASELPH is considering methods of scale or new revenue sources, developing short courses either in an online or hybrid (online and in-person) format may be an option to expand its reach.

### *Example of ASELPH's ability to positively impact the South Africa Health System*

Human Resources/Finance (Loop6): poor financial literacy can start a spiraling effect of poor financial management and implementation. ASELPH Fellows who are taught financial skills such as budgeting and taking a systems approach to addressing challenges, will be more likely to make informed, data-driven decisions for long-term positive impact.



#### *Key questions to consider:*

- Are there additional core competencies that ASELPH Fellows require based on the introduction of NHI?
- How might ASELPH incorporate more fundamental skills into its curriculum?
- How might the ASELPH Program increase their support for the continual learning for alumni?

## **Networks of leadership and information exchange among diverse locations and functions in the health system**

### **Key challenges that ASELPH graduates network and share about**

“Service Delivery Innovation” is the top subject of communication across four of the five cohorts (appearing second in the fifth cohort). ASELPH might consider looking into how topics covered in this area do or do not overlap with some of the other commonly cited topics like “Empowering Environment,” “Problem Solving and Analysis,” and “Change Management.” It could also be worthwhile to probe graduates further on how and where they are implementing “Service Delivery Innovation” or where they are encountering barriers towards doing so in their daily, professional lives within the South Africa health system.

There is also very little variation in the most prominent topics of exchange across the different ASELPH cohorts. “Financial Management and Administration” is the least common topic of exchange between former ASELPH classmates across all five cohorts. It is unclear from the network analysis whether this is because fellows do not want to discuss such matters with external colleagues, whether they feel sufficiently equipped to manage related issues internally, or whether there simply is not enough expertise among Programme fellows to call on for issues of Financial Management and Administration. Interviews with fellows would indicate that the latter may be the more salient issue, but there is not enough qualitative evidence to confidently make this conclusion. If fellows need more or less support in this area, the Programme might be able to make strategic programming changes to accommodate the learning priorities among prospective fellows.

### **Methods of Information Exchange**

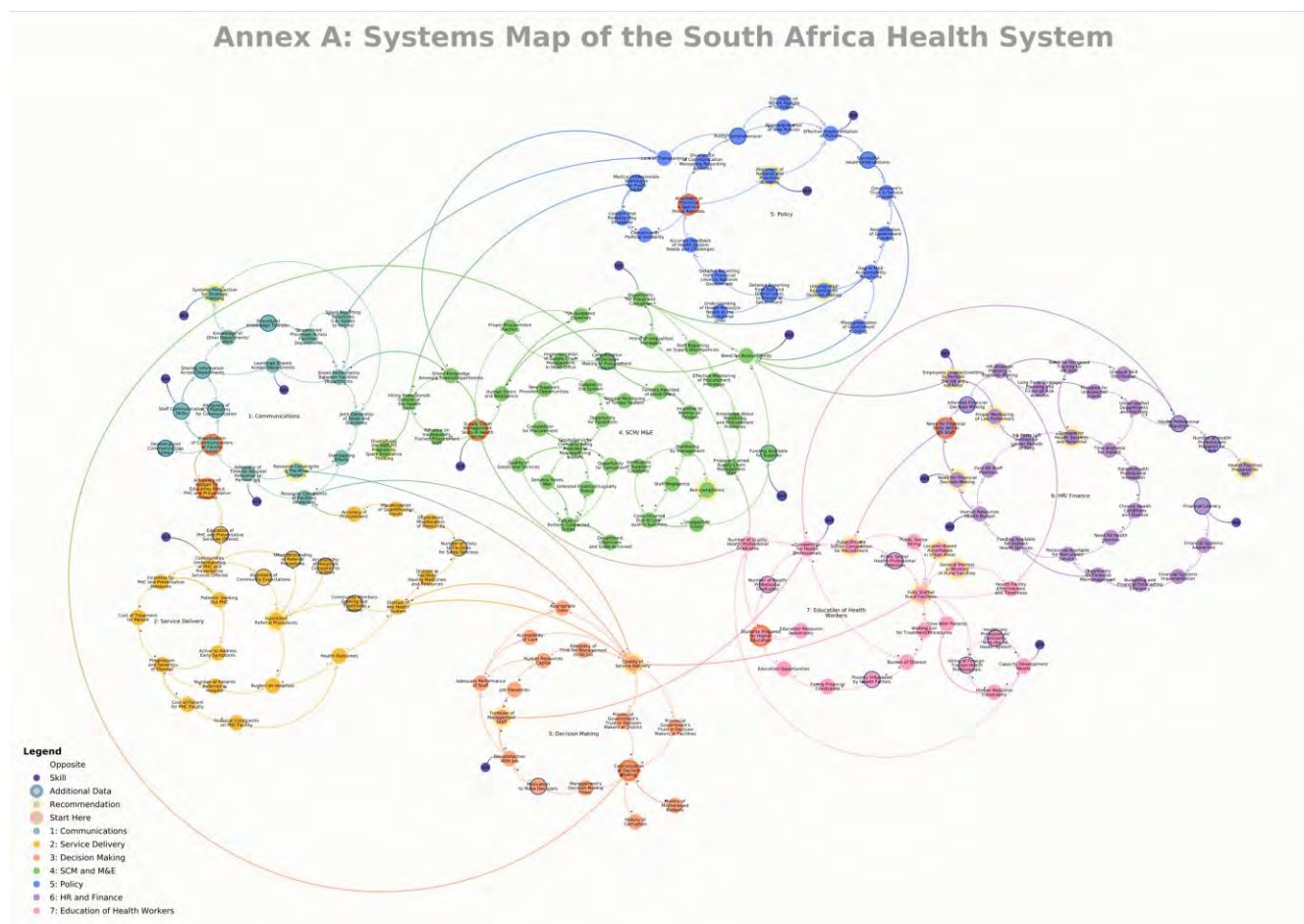
Some of the most common topics of exchange – like Service Delivery Innovation and Change Management – might benefit from a platform for periodic face-to-face and/or group discussion. Because of geographical disparities, it may not be realistic for ASELPH to lead the organization of in-person events for alumni, but the Programme might be able to take advantage of the prominent use of mobile technologies to initiate stronger digital forums or communities of practice to encourage more information sharing among fellows across geographies, areas of expertise, and cohorts. ASELPH graduates generally report very low usage of email for communication with one another, which might be important to consider if the Programme is interested in developing new communication or outreach platforms.

### **Classroom or individual attributes that influence on networking behavior subsequent to graduation**

Based on trends in emergent influencers, a relative diversity of professional expertise and varying levels of leadership among small group members might be beneficial to promote even more sharing, learning, and mentoring opportunities. Graduates seem to naturally connect with fellows working in the same province, so for cohorts where geographic diversity may be more difficult to achieve, ensuring dispersion of peers from the same provinces – to the extent possible – might be an important factor to consider in group composition, as well.

# ANNEXES

## ANNEX A: SYSTEMS MAP OF THE SOUTH AFRICAN HEALTH SYSTEM



Interactive systems map available with invitation to systems map in kumu.

## ANNEX B: READING THE ASELPH SYSTEMS MAP

After logging into the Kumu account, the page displays a zoomed-out view of a complex and interconnected systems map, called a causal loop diagram. This guide explains the different features of this diagram, and provides a logical and comprehensive order for readers to process it.

On the zoomed-out map, the reader will notice that the causal loop diagram consists of seven different colored loops. Each loop represents one of seven themes. Different themed loops connect to one another through one or more linkages; no loop is independent or standalone.

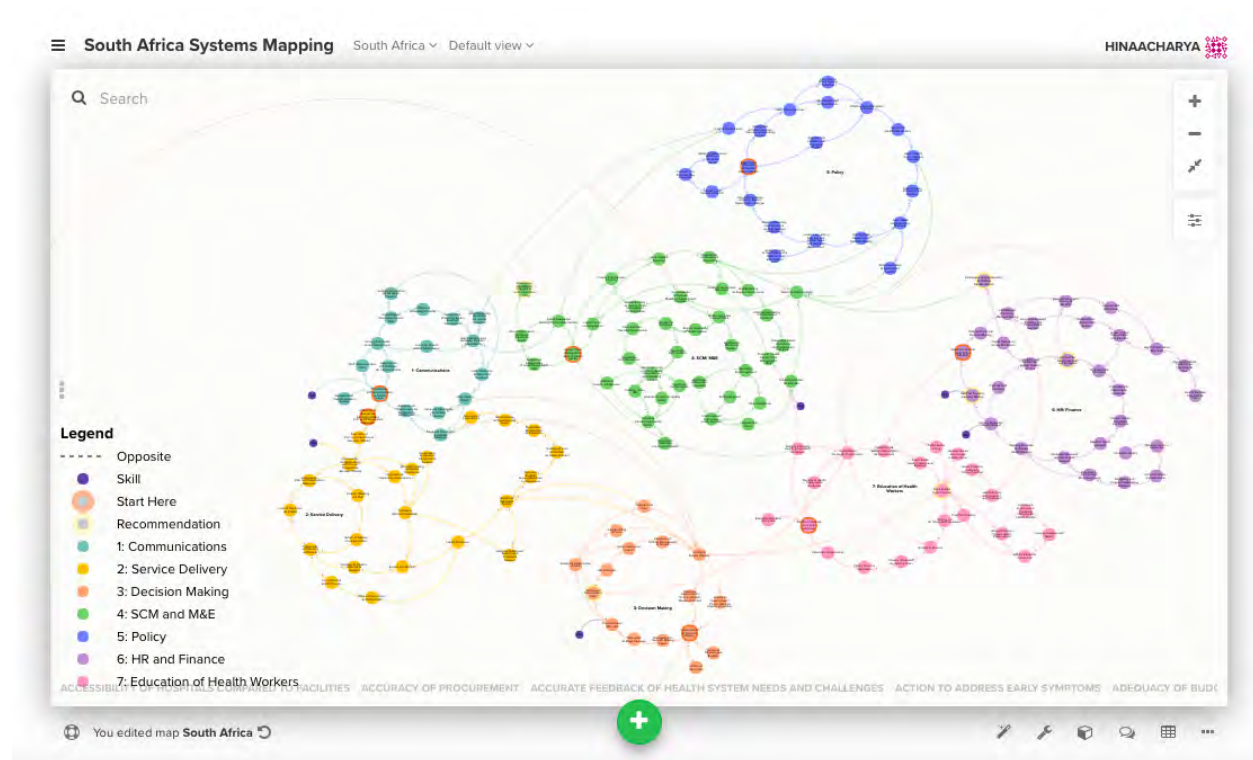


Figure 16: Screenshot displaying a zoomed-out view of the causal loop diagram, including legend

The legend on the bottom-left side of the page lists the theme represented by each color. In addition, it also lists each loop in a reading order. The reader starts on the upper-left side with “Communications” and ends on the bottom-left with “Education of Health Workers.”

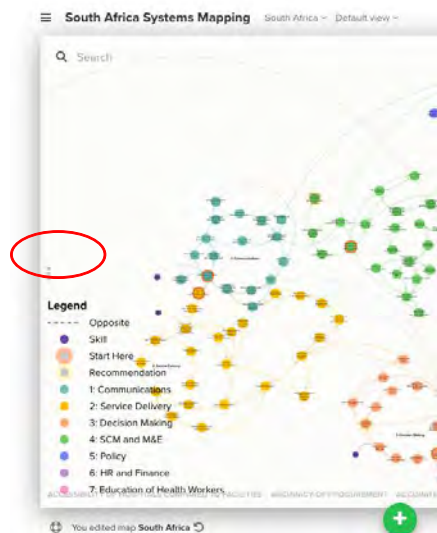


Figure 17: Screenshot circling location of grey dots that open side window when clicked

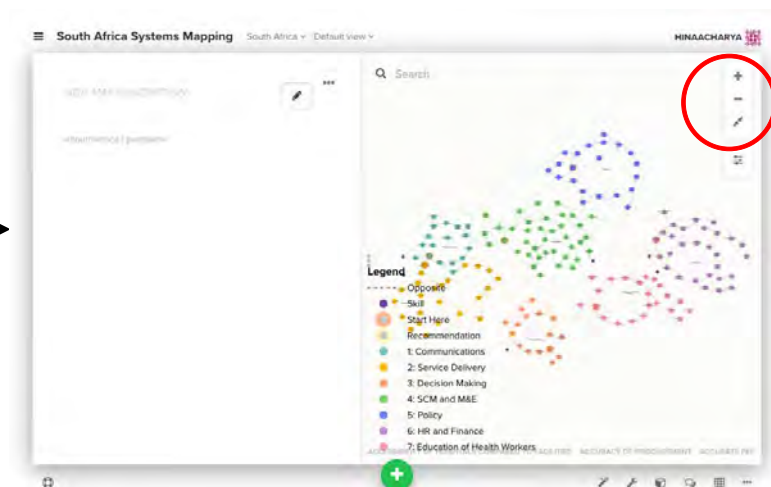


Figure 18: Screenshot circling location of zoom-in and zoom-out buttons

Before zooming in on the diagram (by using the + button on the upper right-hand corner, circled in red on the right-side figure above), click on the three gray dots (circled in red above on the left-side figure above). This will open a side window. Certain nodes are tagged with supporting qualitative and quantitative data. When the reader clicks on these nodes, this side window will display this supporting data.

## Reading the loops

Zoom in to loop I (Communications). Start reading on the “start here” node that is thickly-outlined in orange. Follow the arrows. One node can link to multiple other nodes, or multiple nodes can all link to a single node.

Pay close attention to the plus or minus signs at the beginning and end of every arrow. These signs are important to understand the causal relationship of one node to the next.

The example below shows an arrow that begins and ends with two minus signs. This means that a lack (-) of staff communication skills can cause a lack (-) in sharing of information across departments.



Figure 19: Screenshot displaying the relationships between two nodes

The next example below shows an arrow that starts with a minus sign and ends with a plus sign. This means that a lack (-) of streamlined processes across facilities' departments causes an increase (+) in siloed reporting structures (i.e. nurses to nurses.)

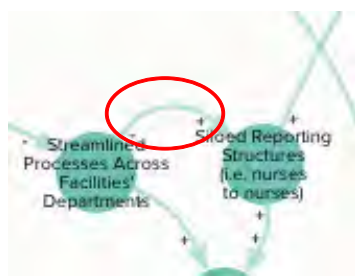


Figure 20: Screenshot displaying the relationships between two nodes

#### Supporting data:

Most nodes are tagged with additional data, which includes information gathered from the literature review and key-informant interviews. To open this data on the side window, click on the node. For example, the figure below shows data with further information related to “Adequacy of ICT Platforms for Communication.”

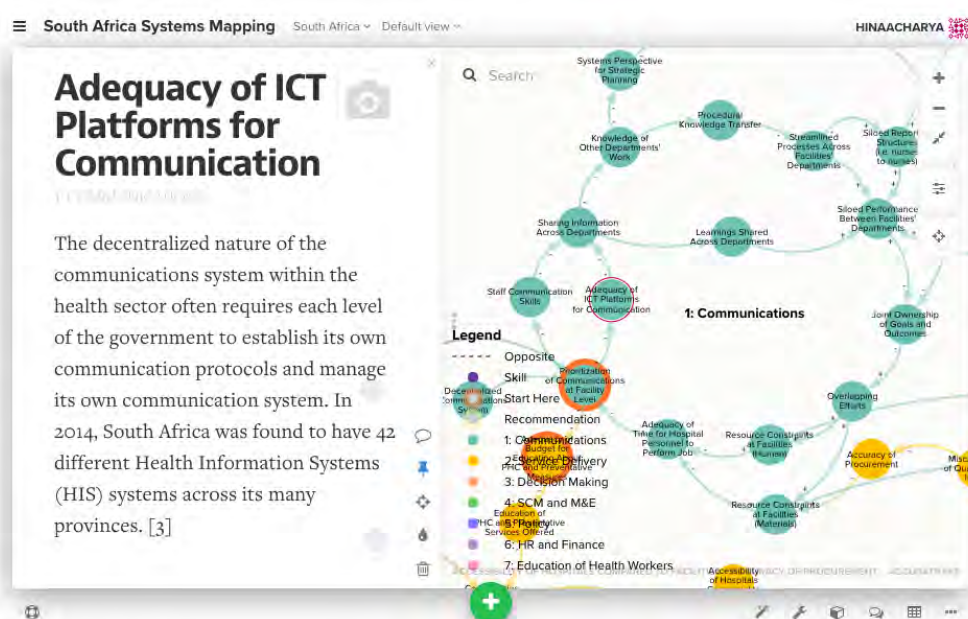


Figure 21: Screenshot displaying location of tagged data

Because two or more nodes may

be supported by the same data, some nodes are not tagged with additional data to avoid repetition.

“Skill” nodes:

There are six purple nodes with the word “skill” that connect to causal loop nodes. One of them is circled in red in the figure below. In this example, a “skill” node connects to the “Prioritization of Communications at Facility Level” node. These purple nodes are the six top-most mentioned skills by interviewees as important in the South African Healthcare system.

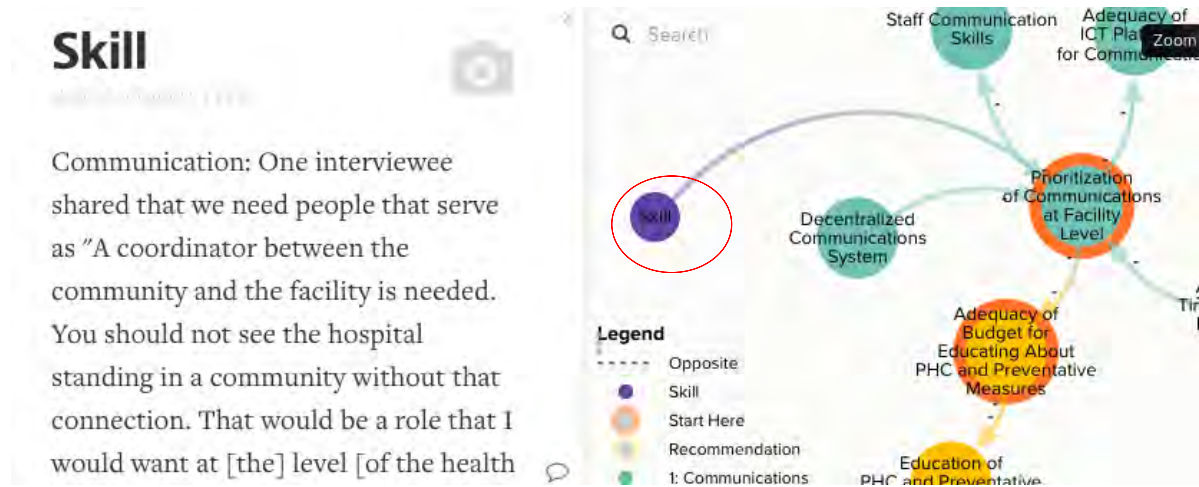


Figure 22: Screenshot displaying an example of a purple "skill" node

Lastly, there are some nodes that are thickly-outlined in yellow. These interviewees' recommendations on an intervention or action that can help solve a problem in the healthcare system.

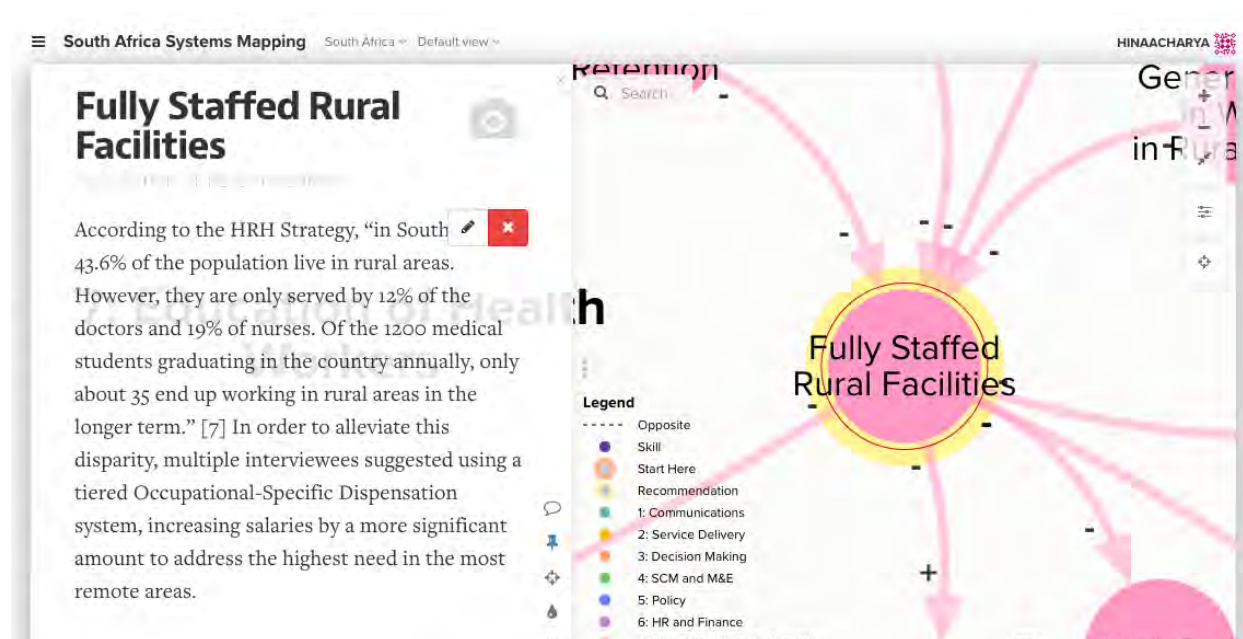


Figure 23: Screenshot displaying example of a "recommendation" node

Readers can search for a certain node or element using the search bar, shown below.

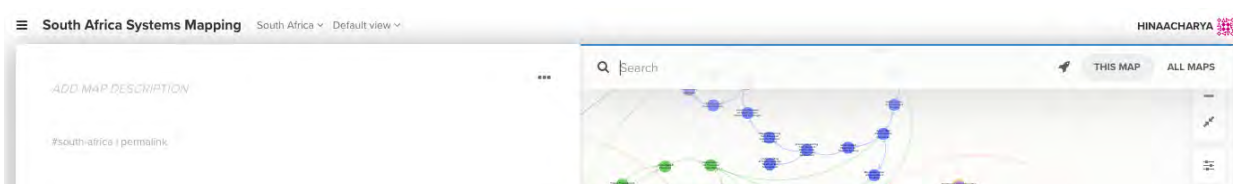


Figure 24: Screenshot displaying the search bar function

The reader can type a node on the search bar, hit enter, and the map will zoom-in on the node and automatically display tagged data on the side window.

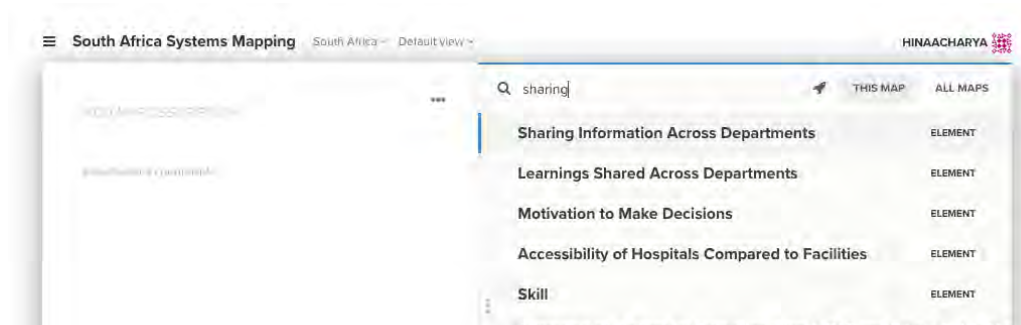


Figure 25: Screenshot displaying search bar function

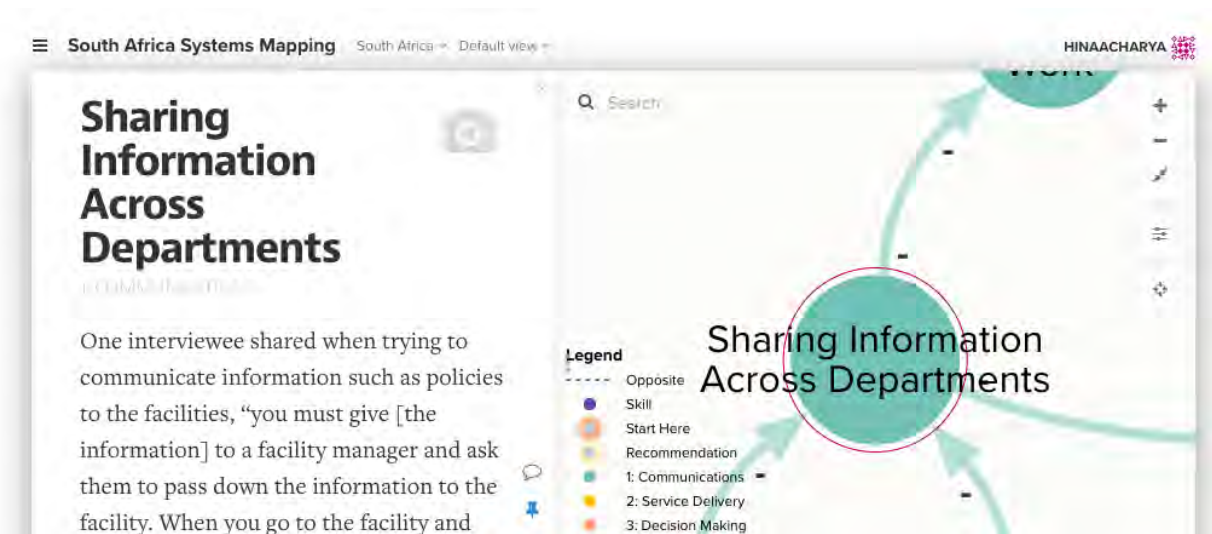


Figure 26: Screenshot displaying search bar function

It is recommended that each loop is read zoomed-in, one by one, in the order listed in the legend. After finishing each one, readers should zoom back out and read details on the supporting skills and recommendations to understand the detailed diagram.

## ANNEX CC: CONDUCTING A VALIDATION WORKSHOP

In order for ASELPH to gain insights beyond what is expressed in this evaluation, we suggest holding a validation process for the CLD. This validation process could take several forms:

- (1) A workshop consisting of all or some of the participants who supported the creation of this systems map
- (2) A workshop consisting of only ASELPH faculty
- (3) Two workshops: one held at the University of Fort Hare and one at the University of Pretoria
- (4) A phone call between ASELPH faculty

Systems maps are most effective when they are dynamic and interactive. A validation process allows the participants of the workshop to take ownership of the map while simultaneously validating the map's contents. It is best to hold the validation workshop with participants who have diverse perspectives and work in various levels (national, provincial, district) and functions of the health system. Once contents of the CLD are finalized and agreed upon by all participants in the validation process, this map can be used as a supportive visual in discussions about potential system changes. The CLD can be used in two ways: as a planning tool and retroactively. ASELPH can use the CLD for future scenario planning. For example, if ASELPH wants to understand where they are best placed to impact the South Africa Health System, the team could map out how they believe the system might change given their planned intervention(s). Because a change in one part of the system could potentially alter another part of the system, it is important to follow the "ripple" of changes throughout the system, another reason diverse perspectives add great value! Additionally, the map can be altered after an intervention to serve in a retroactive manner. For example, as a retroactive tool, the CLD can analyze how the 14 Core Competencies taught by ASELPH fit within the current South Africa Health System. This can help ASELPH to visualize what systemic leverage points the Core Competencies are addressing and if there is a need for the supplementing new competencies.

The following steps and prompt questions will support the facilitation of the validation process for the CLD. Note that the steps can be adapted to fit the circumstances, such as group size, workshops held in-person or members participating via phone, etc.

- (1) **Identify supporting system factors:** Guide participants to consider the top five system factors that help them do their job. Examples include policies, availability of highly skilled staff, and improved collaboration between public and private sector.
- (2) **Identify challenging system factors:** Guide participants to consider the top five system factors that hinder them from doing their job. Examples include lack of accountability mechanisms, resource constraints, and unclear communication between the national/provincial/district level within the South Africa Health System.
- (3) **Identify top supporting system factors:** Once the participants have identified their personal top five supporting factors, split participants into smaller groups (no larger than eight participants) and ask groups to identify their collective top five supporting factors through a voting process. Each group will be asked to share their top five supporting factors with the room. As each group shares their top five supporting factors, the facilitator should write each factor on a board (or sticky notes on a wall). *Note:* When deciding how best to divide groups, consider the desired outcome. For example, if you want all participants to gain an understanding of the various supporting factors and challenges of the South Africa Health System, consider grouping participants from diverse functions. If you would like participants to brainstorm ideas that could potentially solve their functional challenges, then consider grouping participants by function. Alternatively, groups could be divided based on geographic region or other considerations.
- (4) **Identify top challenging system factors:** In the same small groups, ask participants to repeat step three for challenging factors.
- (5) **Vote on top supporting factors and challenges:** The top five supporting factors and challenges should be written down and displayed in a location all can see. Participants should vote! Each participant votes on their top two to three supporting factors and challenges. The facilitator should count the votes to determine the room's top supporting factors and challenges.
- (6) **Translate the supporting factors and challenges to themes:** Guide participants to discuss how these top supporting factors and challenges could be represented as a thematic loop. What would be the theme of this loop? *\*Note there may be multiple themes that emerge—that's ok!*

- (7) **Visualize the map:** Explain to participants that you will now be analyzing at the map created by the SPACES team. Print a large format map or create a sticky note version of the draft CLD that is no smaller than two by two meters.
- (8) **Initial observations:** Invite participants to observe the map. On a **yellow** sticky note ask participants to write “What is striking to you on this map?” or “What are your initial reactions?” It will help to provide the accompanying narratives for the CLD so that the workshop participants can refer to them. Ideally, these are shared prior to the workshop so participants have time to familiarize themselves with the content.
- (9) **Identify supporting evidence:** Prompt participants to identify “What parts observable on the map can be supported with evidence you have?” using a **green** sticky note. It is important to leave time for participants to discuss with one another.
- (10) **Identify outstanding questions:** Using a **pink** sticky note, ask participants to identify “What questions the map provokes that are not answered through the visualization?” As a group determine if these questions are answered through the accompanying narratives.
- (11) **Assumptions that require evidence:** Prompt participants to identify “What assumptions are being made within the map that need to be supported with evidence?” using a **blue** sticky note. As a group determine if these assumptions are answered through the accompanying narratives or methodology.
- (12) **Comparison of thematic loops:** Referring back to the top thematic loops identified in step six, compare the thematic loops identified on the CLD and the top themes acknowledged by participants. Identify the possible missing thematic loops that are not represented on the CLD. As a group, participants should determine what thematic loops they want to add to the map.
- (13) **Build new loops:** Through a collaborative process, guide participants through the process of building loops. The process of building loops is fairly straightforward; however, it is important to ensure participants focus on one loop at a time rather than all of the possible connections a loop can make. Find the guidelines for building a CLD below.
- (14) **Validate new loops:** Repeat steps eight-eleven for the newly completed loops.
- (15) **Update the CLD in Kumu:** In order to update the Kumu version of the map, refer to the “Guide to Updating Kumu Maps” in Annex G

### Factors to keep in mind when building CLDs

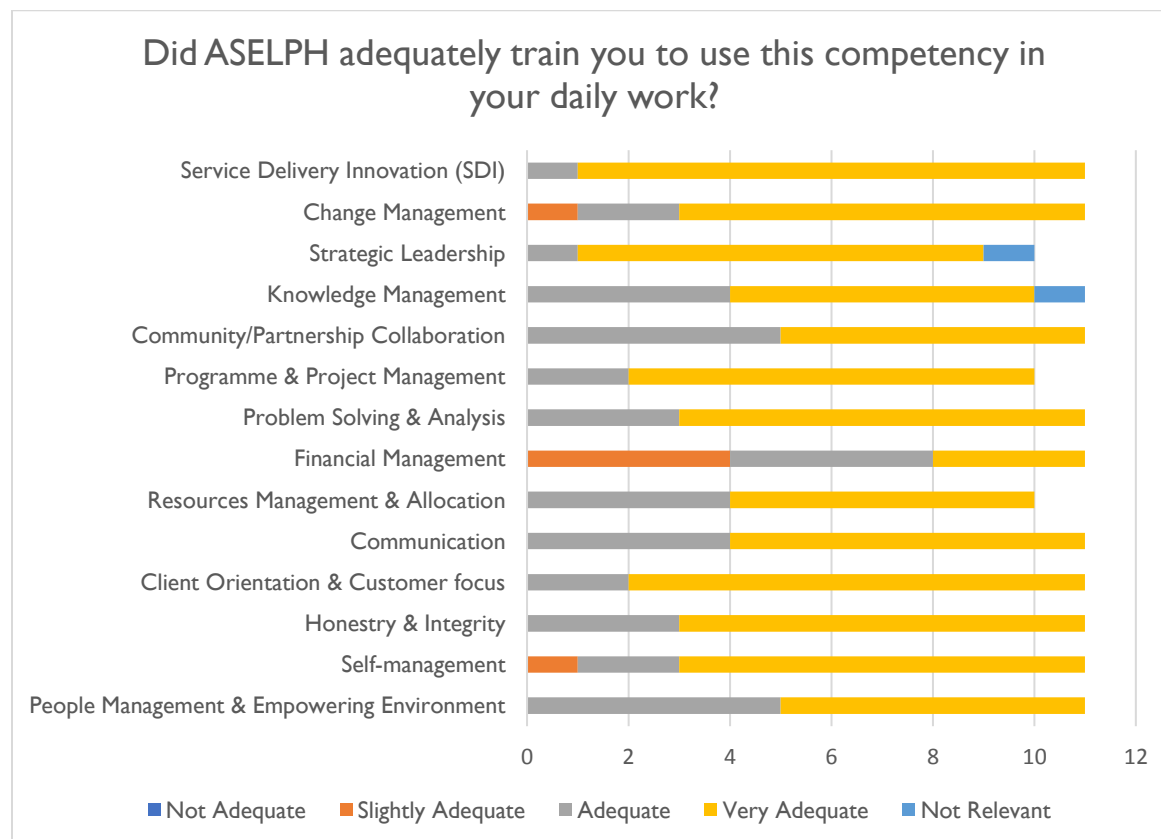
CLDs consist of three basic elements: the variables which are short descriptive phrases (represented by large circles, or nodes), their connections (represented by lines, or linkages), and constraints on each connection (represented by direction and polarity). CLDs allow one to view the challenge from a causal perspective, thus giving you an understanding on the structural forces which produce the effect. Consider the following guidelines when creating loops.

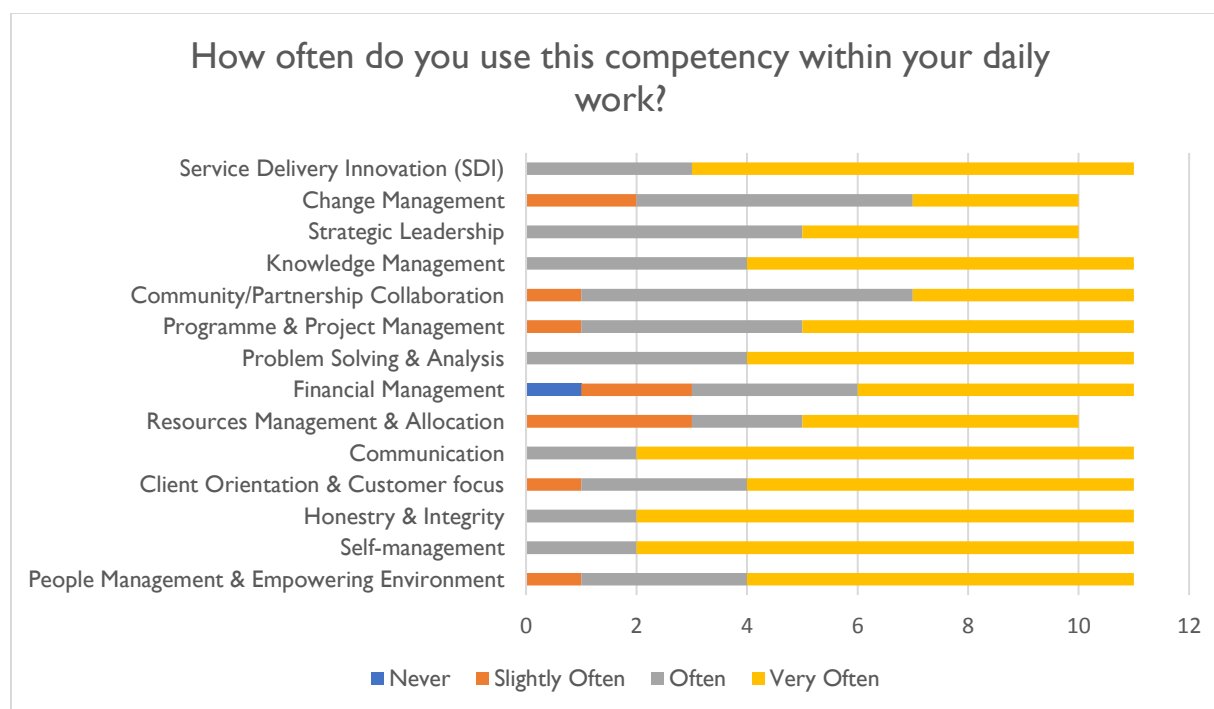
- **Use nouns for node names:** When choosing nodes avoid using verbs and actions phrases. For example, “costs” is better than “increasing costs” because the sign of the arrow determines if it is increasing or decreasing.
- **Choose the positive:** Whenever possible, choose the positive sense of the node. For example, a decrease in “accessibility of care” is easier to understand than an increase of “inaccessibility of care”.
- **Nodes with multiple consequences:** For nodes with multiple consequences, begin by lumping the consequences into one node. For example, “health outcomes” encompass many different outcomes. If you later decide that the outcomes need to be disaggregated you may do so.
- **Start with one loop and then add:** We have found that it is easiest to focus on one loop at a time and then add additional connections. If you think of all the possible connections, one can get lost.

- **Complicated links:** If a link between two terms requires a lot of explanation for someone to understand, you can either redefine the nodes or insert an extra node to make the link clearer. For example, if someone is not directly involved in the system being discussed, they may not understand the connection between a decrease in “prioritization of communication” and “communities understanding of PHC services offered”. In this instance, you could add a new node saying a decrease in the “prioritization of communications” there is a decrease in “budget for community education”, thus a decrease in “communities understanding of PHC services offered.”

## ANNEX D: ASELPH CORE COMPETENCIES QUESTIONNAIRE

Interviewees who participated in the ASELPH Program were asked two additional questions to identify the utility of the 14 core competencies within their work. The questions: 1) how often do you use this competency within your daily work? and 2) did ASELPH adequately train you to use this competency in your daily work were designed to provide further information on how the ASELPH Program is supporting the skills gaps within the South Africa Health System and where there may be room to consider the dynamic needs of the Health System, particularly with the introduction of NHI. There were eleven ASELPH alumni who completed this survey. Answers showing less than eleven responses indicates an interviewee skipped the question.





## ANNEX E: SEMI-STRUCTURED INTERVIEW PROTOCOL

Interview Protocol: South Africa ASELPH Information Gathering Trip  
August 2018

### Central Questions Guiding the Interview Protocol

1. What are the skills that underpin performance of the six core functions of the SA Health System?
2. Which of the skills you identified on (1) above are critical skills needed in the health sector that currently don't exist, or don't exist at scale?
3. What is ASELPH's contribution to the acquisition of the critical skills referred to in (2) above are pertinent to the six core functions of the SA Health System?

**NB:** GKI's objective is to target a diverse group of actors within the health system that can speak to the six core functions underpinning the SA Health System: (1) service delivery, (2) policy, (3) monitoring and evaluation, (4) human resources, (5) finance, and (6) supply chain management. This list of potential interviewees should be seen as a guide. GKI requests your insight and feedback in order to include as many diverse perspectives as possible that cut across the six functions of the health system.

### General Questions

1. First, could you please explain your daily work within the South Africa' health system?
  - a. Please include your title, department, function, how long you've been in your role, key responsibilities, etc.
  - b. What are the most important skills a person performing your job effectively (in function XXXXXXXX) needs to possess? (List the top 5 that seem most essential).

2. Is there a sufficient number of professionals in your role or a role similar to yours within the SA Health System?
  - Not at all sufficient, slightly sufficient, moderately sufficient, strongly sufficient
3. How sufficient is the quality of skills performed by professionals in your role or roles similar to yours?
  - Not at all sufficient, slightly sufficient, moderately sufficient, strongly sufficient
4. Could you share an example of a recent success within your organization related to [function x]?
5. What are the skills that supported that success?
6. In your opinion, who at your level or level(s) below you most influences how you effectively do your job?
7. In your opinion, who in higher leadership positions most influences how you effectively do your job?
8. What is/are the core challenge(s) you face that prevent you from effectively doing your job in [function x]?
9. Within your team, what skills exist that currently help you to address this challenge(s)?
10. In your opinion, who at your level or level(s) below you prevents you from effectively doing your job?
11. In your opinion, who in a higher leadership position prevents you from effectively doing your job?
12. Of these skill areas you've just noted, where in your view does there need to be the most substantial focus on capacity development?
13. Have you encountered professionals within the SA health care system expressing a need for increased skills within [function x]?
  - What circumstance prompted others to beckon for these skills?
14. What is the impact of these skills gaps in [function x] in terms of outcomes to the SA health system?
15. If yes, what is your perception of the impact of these programs?
16. In your opinion, what external factors create a positive influence to effective performance in (function X)?
17. Looking at the same question from the other direction, what external factors undermine the successful performance in (function X)?
18. Compared to the skills gaps and training we discussed at the beginning of this interview, how substantial are the external factors you indicated to (function X)?

Now I want to move on to questions that help me to understand how your role is interrelated with other functions of the Health System.

- Supply Chain Management
  - Policy
  - M&E
  - Human Resources
  - Finance
  - Service Delivery
19. What is the overall goal of [function x] in your org/province/etc.?
  20. What tasks does your team in (function XXXX) need to complete in order to achieve its goals?
    - Of these tasks, are there any that are weak/missing? What do you think are the primary reasons why?
    - What are the skills that you require in order to complete your piece of that process?

21. In your opinion, are there specific processes that individuals use to effectively lead improvement/changes within (function x) across the South African Health System?
22. What are the barriers that individuals face trying to lead improvement/changes in (function X)? Consider institutional barriers, infrastructure challenges, cost barriers, policy challenges, or any other type of barrier.
23. What would be critical for inclusion in an executive leadership program curriculum aimed at professionals within (function x) to help them stay relevant to the current Health System challenges/needs?

#### ASELPH Program: Impact on Direct Participants (Fellows/Faculty)

##### \*ASELPH Affiliates Only:

- What are the core skills you gain in the ASELPH Program?
  - How do you use those in your job today
- Is it your considered view the ASELPH Program prepared students to address those gaps in capacity (w/in function X)? In what way(s)?
- Is it your considered view the ASELPH Program did or did not meet the training needs required to support capacity development in (function X)? In what way(s)?
- Can you provide specific examples of how the ASELPH network has served your professional growth?
- Have you utilized the working relationships you made within ASELPH with other Fellows in your work? How? Can you provide an example?
- How have you used the research you completed as part of the ASELPH Program either to inform your actions or your decisions?
  - Are there any barriers within your organization or the health system preventing you from implementing your research? Please explain.
- Have you used the skills you gained as part of the ASELPH Program in ways you had not before? (example: training others, changing the way you did something on the job, etc.) Can you provide an example?
- Are there any barriers within your organization or the health system preventing you from implementing the skills you've gained through the ASELPH program? Please explain.
- ASELPH Related: Were there any skills you wish more time had been spent in the program? Please explain

That now concludes the interview. I'd like to remind you that your responses will remain anonymous. Additionally, if there is information that could be potentially used to identify you, we will omit it. Thank you so much for taking the time to complete this interview. Your input will be invaluable in helping us better understand the South African Health System and how organizations like ASELPH can positively impact the future.

If you think of anything additional you would like to share, please feel free to email me. If we have any clarifying questions in our follow-up, may we email you?

If you know of anyone who might also lend an expert voice to this topic, we'd love to interview them or send them a survey to complete: Is there anyone who comes to mind?

## ANNEX F: GUIDE TO USING AND UPDATING KUMU MAPS

### 1) Getting Started

- Create an account (personal vs organization): <https://kumu.io/join>
- Create first project: “Dashboard” → “New project”
  - One project includes unlimited # maps
  - Pick a template for your first map. For CLD, we are building a **systems map**.
  - Options: **System**, Stakeholder, SNA, Custom

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### 2) Building your first map: The template

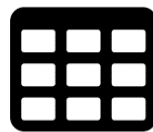


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### 3) Building your first map: Adding data



build by  
hand



import a  
spreadsheet



sync to a  
google sheet

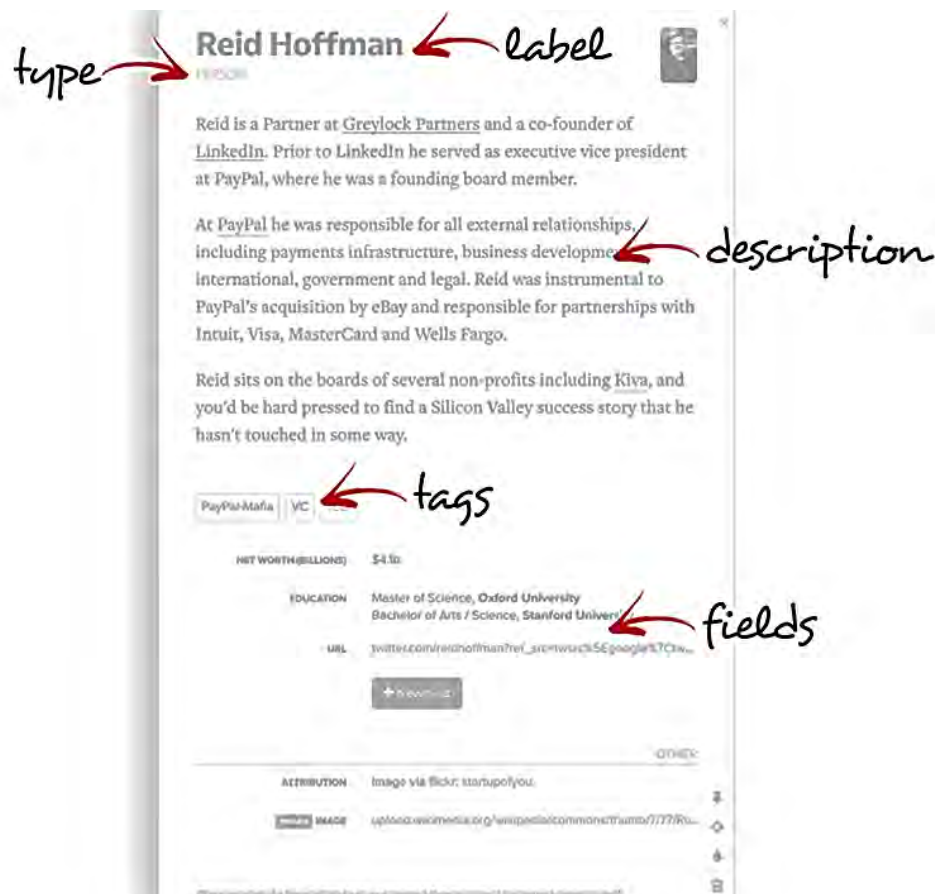
#### 4) Building your first map: Building by hand

- **ADDING ELEMENTS:** Click green “+” button at bottom of map → click “Add element” → type in [element name] → enter
  - **Shortcut:** “e” to add element
- **ADDING CONNECTIONS:** Click green “+” → click “Add connection” → type in element names you want to connect → enter
  - **Shortcut:** “c” to add connection
- **SKETCH MODE:** Click green “+” → click “sketch mode”
  - **Add element** by clicking anywhere on map
    - **Shortcut:** Hold alt and click anywhere
  - **Add connection** by dragging from existing element
    - **Shortcut:** Hold alt and drag

---

#### 5) Decorating elements & connections

- **ADDING FIELDS**



- Each element & connection has a profile that can be used to store multiple fields.
- Click **“+ New field”** to add context to elements & connections.

- **DECORATING**

- Click **“Settings”** on right side of map → Click **“Decorate”** → Click **“Add element rule”** or **“Add connection rule”**

**Hewlett Foundation Madison Initiative**  
The Madison Initiative ▾ Legend ▾

jeff

**Legend**

FILTER CLUSTER DECORATE SETTINGS

Add element rule Add connection rule

●	NOT DISPLAYED BY LEGEND: element	✎	✕
—	NOT DISPLAYED BY LEGEND: connection	✎	✕
○	NOT DISPLAYED BY LEGEND: loop	✎	✕
●	NOT DISPLAYED BY LEGEND: element	✎	✕
●	<b>Congress</b> {"Element Type":"Institutional Norms & Processes"}	✎	✕
●	<b>Campaigns &amp; elections</b> {"Element Type":"Campaigns & Elections"}	✎	✕
●	<b>Citizens</b> {"Element Type":"Civic engagement"}	✎	✕
●	<b>Other</b> placeholder	✎	✕

SWITCH TO ADVANCED EDITOR

- Use **dropdowns** to indicate which elements/connections you want to decorate
- Use **checkboxes** to change size/color, add bullseye/shadow
- Use **“label” field** to add legend entry to lower left corner of map

**Element Decoration Builder**

Decorate custom selection

Element Type:

or and

`{"Element Type"="Civic engagement"}`  
Matched 11 elements

☐ Change size

☒ Change color

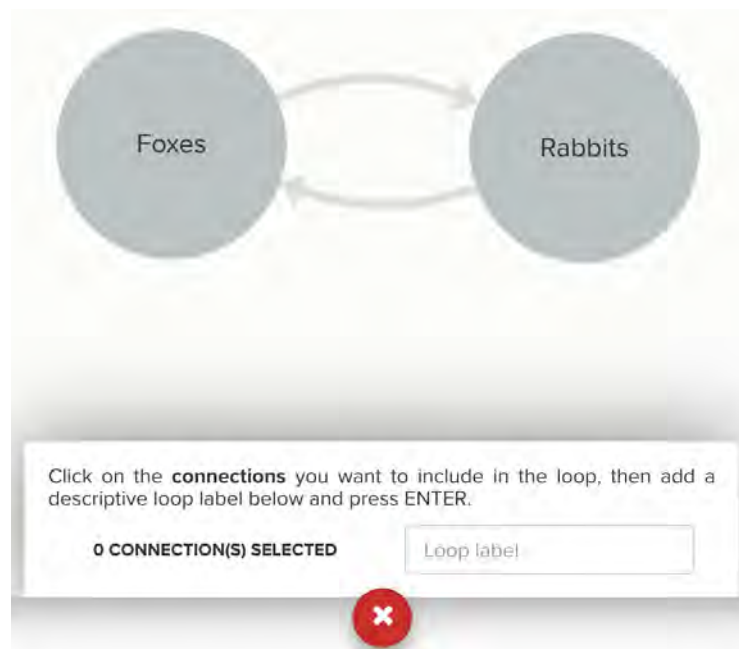
☒ Set a fixed element color

color:

☐ Color elements based on attribute values

## 6) Adding Loops

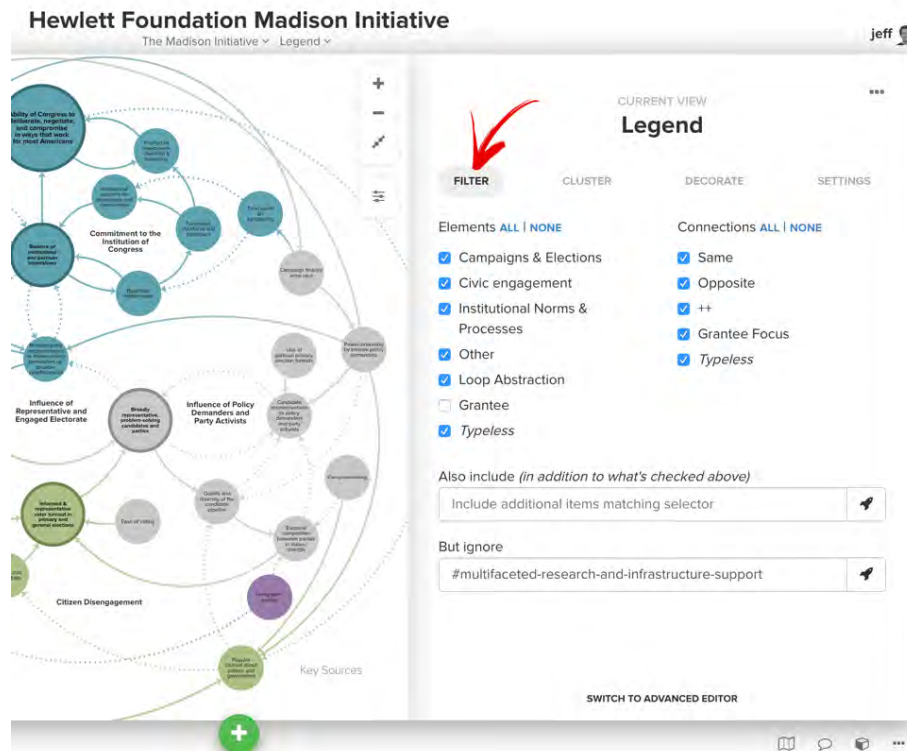
- Select the **green +** and select “add loop” and then select the connections to include;
- **OR** you can select two connections at the same time (click one, then hold down shift and click the other) and then select add loop from the **green +**



## 7) Defining what's visible in your map

- **FILTER**

- Click “Settings” on right side of map → Click “Filter”
- Uncheck what you want to hide
- Use “Also include” or “But ignore” to modify

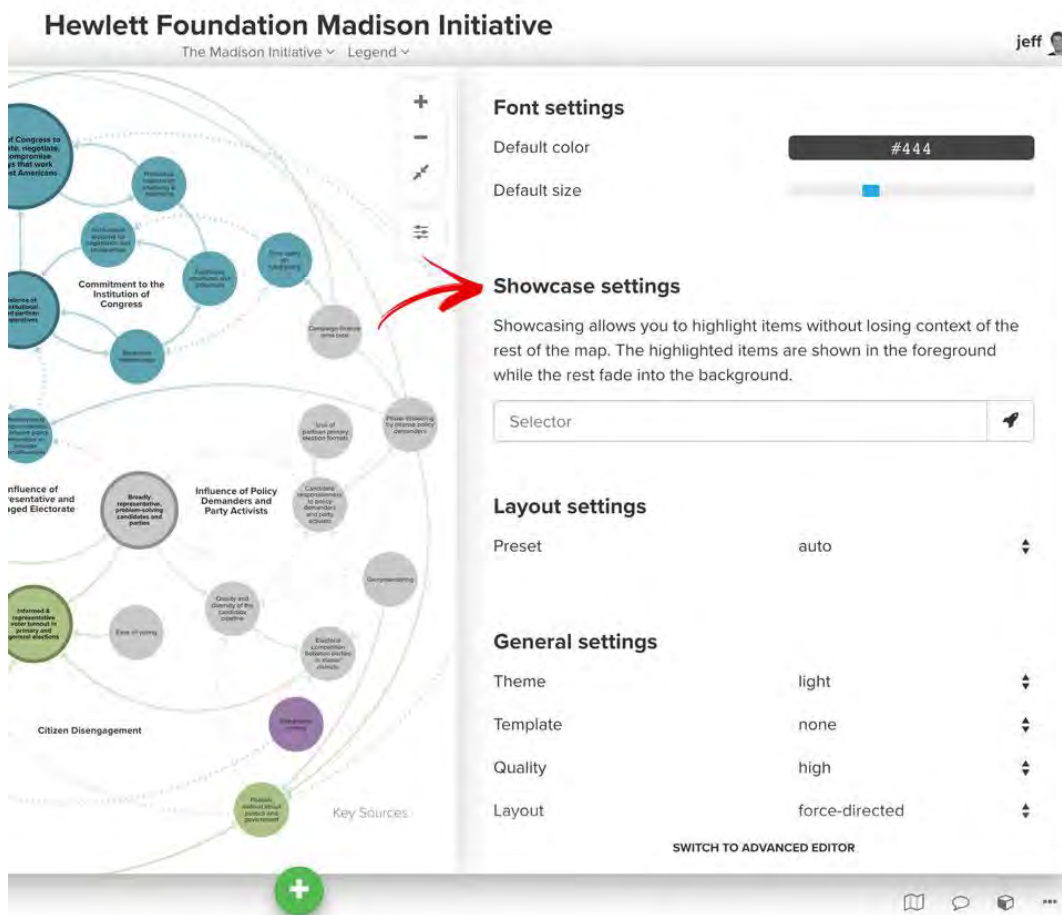


- **FOCUS**

- You can activate **FOCUS** on any portion of the map
  - Click and hold any element/connection **OR**
  - Select any # elements/connections/loops and click “Focus” button in bottom right of selection profile
- Once **FOCUS** is activated, zoom in and out using “+” and “-” keys

- **SHOWCASE**

- **SHOWCASE** is similar to **FOCUS** but instead of removing content from map, you can select content to fade into the background
- Click “Settings” on right side of map → Click “Setting” tab → Scroll down to **Showcase Settings** section



## GUIDE TO UPDATING KUMU MAPS

Kumu is a useful tool for mapping complex systems into compelling visualizations. By mapping networks of influence, users can identify leverage points for change. Stakeholders, key influencers, mediating factors and the relationships among them form the social network that a Kumu map captures. Kumu's tools enable users to customize the narrative, detail, design and decoration of the maps while utilizing real-time data.

The following are guidelines for updating Kumu systems maps.

### Navigating through Kumu's dashboard

- Enter the Kumu site ([www.kumu.io](http://www.kumu.io)) and Sign In
- The site will navigate to a Dashboard page where "Projects" are listed
- Select the Project (Guatemala PEA) you would like to view/edit
- The site will navigate to the map's template

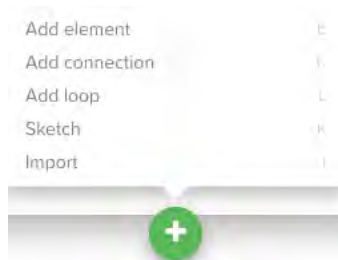


### Add elements and connections

- Select the white "+" button in the green circle at the bottom of the map's template



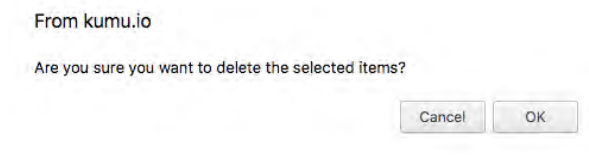
- Select "Add element" or "Add connection"



### Delete elements and connections

- Select the element or connection you wish to delete
- Click the "delete" or "backspace" button on your keyboard
- Depending on the browsing software, Kumu will ask if you are sure you want to delete the element/connection; select OK

MacBook with Google Chrome:

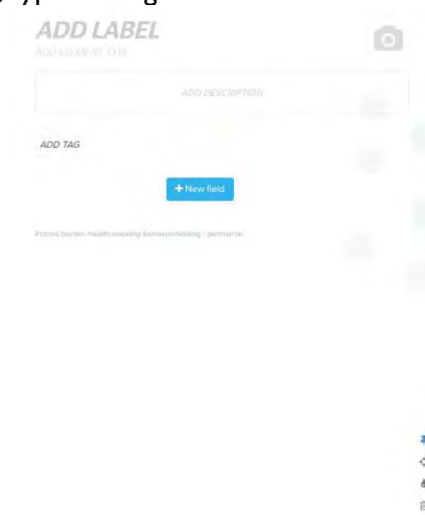


### Edit element names/types/tags

- Select the element of interest
- Select the three vertical dots at the left side of the map's template

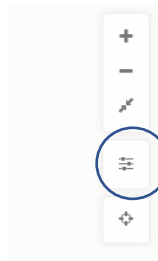


- Edit element name (label), type and tag

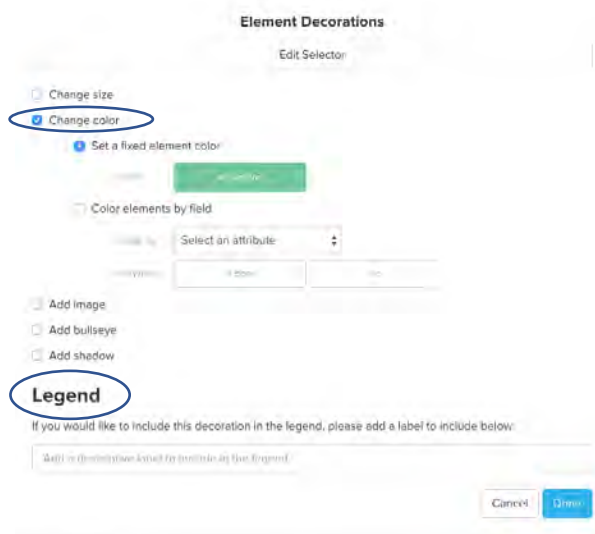


### Change the colors and/or legend

- Select the element of interest
- Select the "Settings" icon at the right side of the map's template

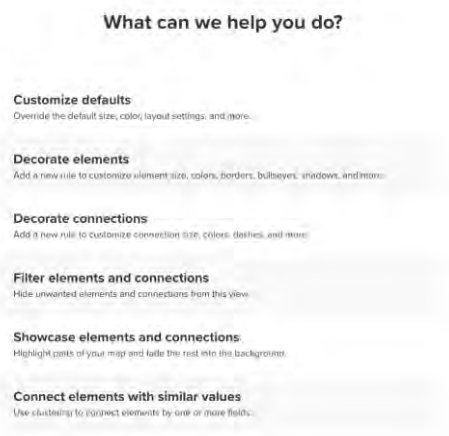


- Select the editing icon next to the label of interest
- Select “Change color”
- Modify Legend as desired



OR

- Select the element of interest
- Select the “Settings” icon on the map’s template
- Select “More Options” to customize defaults, decorate, filter and showcase elements/connections

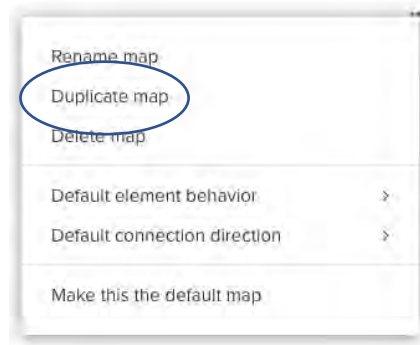


Create a duplicate map for major updates or keep a map from a specific snapshot in time

- Select the three vertical dots at the left side of the map's template, and then the three horizontal dots that appear at the top right side of the viewing frame

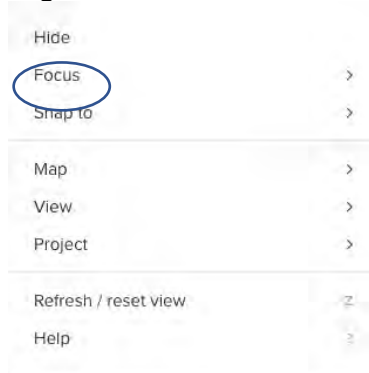


- Select “Duplicate map”



### Create a new sub-map to use in documents or to show stakeholders

- Select an element of interest, right click or Control + left click, select “Focus”



- Select the desired option (Direct, Indirect or Extended) for creating a sub-map



OR

- Select an element of interest and then select the “Focus” icon



- Contract or expand Focus as desired

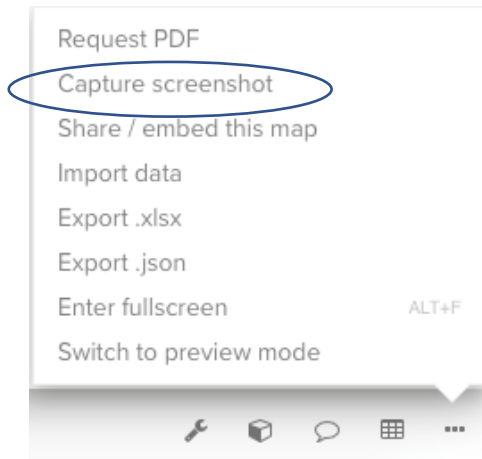


Then:

- Select the three horizontal dots (“More”) from the bottom right corner of the map’s template



- Select “Capture screenshot” and save the image



## ANNEX G: SOCIAL NETWORK ANALYSIS SURVEY

### SPACES South Africa ASELPH SNA Survey

#### **Research Objective:**

The overall objective of SPACES evaluation of the ASELPH executive training program is to determine: *To what extent the ASELPH program has been effective in providing participants / students with skills that they have subsequently utilized on-the-job to positively impact South Africa's health system.*

The Social Network Analysis (SNA) will not directly measure skills acquired but will measure how and the extent to which ASELPH helped graduates develop networks with other program participants and share information relevant to their roles in the South Africa health system. Some of the key questions that the SNA will address include:

1. To what extent has the ASELPH program been successful in facilitating networks of leadership and information exchange among diverse locations and functions in the health system?
2. What are the key issues / challenges that ASELPH graduates network and share about?
3. How are graduates exchanging information, and what methods of exchange appear to be the most effective?
4. What are some of the classroom or individual attributes (e.g. classroom performance, job / function, group participation) that appear to influence on networking behavior subsequent to graduation?
5. Who are the key influencers in the network, the issues they are focused upon, and means of communication?

#### **Metrics:**

Research Question 5: Who are the **key influencers in the network**, the issues they are focused upon, and means of communication?

**Degree:** Number of total incoming and outgoing connections an entity has; entities with high degrees are considered as network connector hubs.

- **In-Degree:** The number of connections flowing into a network entity. In a 'directed' network, in-degree is a good indicator of network influence.
- **Out-Degree:** The number of linkages flowing from a network entity.

**Closeness Centrality:** The shortest distance of each entity to all other entities; high closeness can spread information to the rest of the network most easily.

**Betweenness Centrality:** The number of times an entity lies on the shortest path between two other entities; elements with high betweenness have more control over the flow of information and act as key bridges within the network.

**Network Definition:**

ASELPH graduates between 2015-2018. This includes graduates from both programs at University of Pretoria and University of Fort Hare. Each cohort will be assessed separately.

**Survey Definitions:**

Throughout the survey we will ask you questions about your **‘professional’** or **‘working’ relationships** with former ASELPH classmates. A **‘professional’** or **‘working’** relationship includes **formal interactions** resulting from things like contracts, MOUs, etc. between your offices/organizations for which interaction is compulsory, as well as more **informal interactions** like periodic information exchange, giving or receiving professional advice/recommendations, board membership, etc. that are not obligated by your position. It is exclusive of purely personal relationships.

**Questionnaire:**

**RESPONDENT ATTRIBUTES:**

*Research Question 1: To what extent has the ASELPH program been successful in facilitating networks of leadership and information exchange among diverse locations and functions in the health system?*

*Research Question 2: What are some of the classroom or individual attributes (e.g. classroom performance, job / function, group participation) that appear to influence on networking behavior subsequent to graduation?*

1. Select your name from the following list.
2. Please enter your current position and the name of your employing organization / department / office in the appropriate box below.
  - Position Title
  - Organization
  - Department / Office
3. Have you been promoted since completing the ASELPH program // since completing the ASELPH coursework?
  - Yes
  - No
4. In which province are you currently employed?
  - Eastern Cape
  - Free State
  - Gauteng
  - Kwazulu Natal
  - Limpopo
  - Mpumalanga
  - Northern Cape
  - Northwest
  - Western Cape

- 
5. Do you feel that you are more effective at your job as a result of the ASELPH program?
    - Yes
    - No
  6. Do you feel that you have more professional resources to draw on as a result of the ASELPH Program?
    - Yes
    - No
- 

### RELATIONSHIPS:

1. **Which of your ASELPH peers have you interacted with since [graduating from the programme // finishing your coursework]?**

*The subsequent questions will be asked for each relationship indicated in matrix form: names of the individuals selected here will populate as rows and the relationship attributes (listed as the response options below each question) will be displayed as columns.*

---

### RELATIONSHIP ATTRIBUTES:

#### Matrix 1

2. For each person selected on the previous page, check all that apply.
    - I had a relationship with this person prior to the programme
    - This person was a member of my small group(s) on the course
    - Neither of these
  3. How would you characterize your interactions? Check all that apply.
    - Professional – We work together
    - Informational – We exchange industry related information / advice
    - Personal – We interact socially outside of our roles in the health system
- 

*Research Question 4: How are graduates exchanging information, and what methods of exchange appear to be the most effective?*

*Individuals with whom the respondent selected only 'personal' interactions will be excluded from the following questions.*

#### Matrix 2

4. How often do you interact?
  - Daily
  - Weekly
  - Monthly

Matrix 3

- Yearly

5. Have the interactions with these individuals been helpful to you in your professional capacity?
- Always Helpful
  - Usually Helpful
  - Sometimes Helpful
  - Rarely Helpful
  - Never Helpful

Matrix 4

6. What is your primary mode of communication?
- Phone Call (any audio call including skype, viber, etc.)
  - Text / Whatsapp / Instant Message
  - Email
  - Face-to-face

*Research Question 3: What are the key issues / challenges that ASELPH graduates network and share related to?*

Matrix 5

7. What is the primary area you most often communicate about related to your work in the health system? (Select one.)
- a. Leadership and People Management
  - b. Planning and Strategic Management
  - c. Financial Management and Administration
8. Are there other, more specific areas you communicate about related to your work in the health system? (Select all that apply.)
- People Management and Empowering Environment
  - Strategic Leadership
  - Client Orientation and Customer Focus
  - Service Delivery Innovation
  - Change Management
  - Communication and Knowledge Management
  - Community / Partnership Collaboration
  - Financial Management / Resource Management and Allocation
  - Problem Solving and Analysis
  - Programme and Project Management
  - Self-Management

## **ANNEX H: SPACES-ASELPH JOINT PARTNERSHIP PLAN**

### **Joint Partnership Plan for SPACES Monitoring, Evaluation, Research, and Learning BETWEEN**

**USAID Global Development Lab - MERLIN Team (Office of Evaluation and Impact Assessment)**  
**AND**  
**USAID/SOUTH AFRICA**

This joint partnership plan (“partnership plan”) and any attachments or annexes thereto, is made and entered into by and between the United States Agency for International Development (USAID) Global Development Lab MERLIN Team (Office of Evaluation and Impact Assessment) (“the Lab - MERLIN Team (EIA)”), and USAID/South Africa on this 1 day of May, 2018 (“Effective Date”).

The purpose of this partnership plan is to set the terms and understanding between the **Lab - MERLIN Team (EIA)** and **USAID/South Africa** under the **Strategic Program for Analyzing Complexity and Evaluating Systems (SPACES)** approach, focused on systems methods and tools.

## **Background**

**SPACES** is an initiative of the Monitoring, Evaluation, Research and Learning Innovations (MERLIN) Program through the U.S. Global Development Lab in partnership with the Bureau for Policy, Planning and Learning. SPACES aims to bring a variety of systems tools and methodologies that decision makers can use to enhance assessment of innovation impact potential to provide a comprehensive systems analysis. This approach to program design and implementation for USAID and its partners is an operational innovation championed and pioneered by the Lab and being tested throughout Operating Units within the Agency.

The purpose of this study is for SPACES MERL to provide a suite of systems tools, tailored to understanding the extent to which the ASELPH Programme has been effective in providing participants / students with skills that they have subsequently utilized on-the-job to positively impact South Africa’s health system?

This Joint Partnership Plan outlines the Lab - MERLIN Team (EIA)’s engagement with USAID/South Africa through SPACES.

## **Purpose**

This document outlines a scope for partnership between the Lab - MERLIN Team (EIA) and **USAID/ South Africa** for systems methods and tools. An overview of the partnership scope of engagement through SPACES is outlined below.

## **Questions to be answered through the engagement:**

6. *To what extent has the ASELPH Programme been effective in providing participants / students with skills that they have subsequently utilized on-the-job to positively impact South Africa’s health system?*
7. *To what extent has the ASELPH Programme been successful in facilitating networks of leadership and information exchange among diverse locations and functions in the health system?*

8. *What are the key issues / challenges that ASELPH graduates network and share related to?*
9. *How are graduates exchanging information, and what methods of exchange appear to be the most effective?*
10. *What are some of the classroom or individual attributes (e.g. classroom performance, job / function, group participation) that appear to influence on networking behavior subsequent to graduation?*
11. *Who are the key influencers in the network, the issues they are focused upon, and means of communication?*

## **SPACES Scope of Engagement**

**Activities:** Activities for the assessment will include:

Activity 1: Develop Research Plan Over the course of the first 4-6 weeks, SPACES will work to develop a research plan. The research plan will draw from information from the July 2017 scoping trip, additional discussion with USAID and ASELPH members to determine a method and timeline for the following:

- collection and transfer of data
- identifying and collaborating with key stakeholders
- validation of systems maps, social network analysis
- mapping and social network analysis

Activity 2: Develop a systems map of ASELPH participants, their skills and their role in the health system

The goal of this activity is to better understand how ASELPH graduates (i.e. Manager at clinic, manager at Ministry of Health, warehouse manager, etc.) impact the broader South African health system as a result of ASELPH's leadership and skills programming. SPACES will produce a systems map to visually represent key actors, interactions, and resources across the health system. This visualization will be developed based on analysis of qualitative reports/assessments and key informant interviews with a sample of current and former ASELPH participants, their teachers, supervisors, and those knowledgeable of the current health system. Together, this information will capture the processes behind how ASELPH graduates impact the health system. Based on this map, the SPACES team will identify leverage points in which ASELPH can improve its leadership and skills programming.

Activity 3: Social Network Analysis: SPACES will conduct a Social Network Analysis to understand the extent to which graduates of the ASELPH project networked with their peers on health systems issues after the Programme's conclusion. Data will be collected through a remote internet-based survey of ASELPH alumni at both University of Pretoria and University of Fort Hare, providing them with a roster of program graduates and asking them to select which of those they collaborated with, frequency, method and nature of their interactions. Results may be cross-referenced with data on student performance, membership in particular "table groups," among other attributes related to their time in the ASELPH Programme. We may also probe the extent to which networks have emerged around particular issues, between

particular cohorts and institutions (UP, Fort Hare, Harvard), and among particular functions within the health system.

Results will be presented in the form of network maps and metrics, contributing to answering the above draft hypothesis, in addition to some of the following research questions:

- To what extent has the ASELPH Programme been successful in facilitating networks of leadership and information exchange among diverse locations and functions in the health system?
- What are the key issues / challenges that ASELPH graduates network and share related to?
- How are graduates exchanging information, and what methods of exchange appear to be the most effective?
- What are some of the classroom or individual attributes (e.g. classroom performance, job / function, group participation) that appear to influence on networking behavior subsequent to graduation?
- Who are the key influencers in the network, the issues they are focused upon, and means of communication?

#### Activity 4: Presentation and final report

Based on the patterns and leverage points identified in system map and social network analysis, SPACES will develop a set of recommendations for the ASELPH Programme, MOH and other key stakeholders.

### **The Lab - MERLIN Team (EIA) and SPACES Commitment to Partnership:**

The Lab - MERLIN Team (EIA) is committed to providing resources that will ensure the best possible environment for successful application of SPACES. The Lab - MERLIN Team (EIA) is committed through the SPACES Consortium to:

- Developing a systems map as described above
- Conducting a social network analysis as described above

### **USAID South Africa Commitment to Partnership:**

USAID/South Africa is committed to working in partnership with the SPACES Consortium through the Lab - MERLIN Team (EIA) to:

- Provide necessary staff time and resources to support the involvement of the SPACES Consortium, including regular calls with SPACES Consortium.
- Provide overall direction and leadership for work
- Provide travel approvals
- Involve the SPACES Consortium (or representatives within) in key decision-making process as related to MERL opportunities.
- Provide resources, if needed and as agreed to, to support activities as related to SPACES activities.

- Commit to data sharing based on information collected that can support SPACES activities and learning agenda.
- Participate in qualitative interviews and quantitative surveys as related to SPACES activities and the MERLIN learning agenda.
- Commit to collaborative learning and transparent decision-making with SPACES Consortium to ensure a joint partnership for the SPACES engagement.

## **Learning Agenda for SPACES**

Each **SPACES** pilot engagement is designed to meet the monitoring, evaluation, research and learning needs of its activity, while also contributing to a larger MERLIN learning agenda. This includes testing the various MERLIN approaches to contribute to a broader learning agenda with SPACES as an approach. Each engagement will contribute to a set of core questions about using SPACES approaches in USAID, as well as questions specific to the approach used and the activity being monitored. To facilitate these dual learning objectives, each SPACES engagement will involve a series of M&E approaches to assess whether SPACES is effective as an approach and in generating better program outcomes.

Periodically, the SPACES consortium, the Lab - MERLIN Team (EIA), or the Policy Planning and Learning Bureau's office of Learning, Evaluation and Research (PPL/LER) will solicit feedback and document the learning process and its outcomes with **USAID South Africa** participants. Data sources may include program/extant data, rapidly conducted survey data, key informant interviews, and/or focus groups. This may involve participation by representatives from the Lab MERLIN Team (EIA), SPACES, and other the implementing organizations.

## **Agreement**

The Partnership between the Lab - MERLIN Team (EIA) and **USAID South Africa** will begin on the date of agreement to this document, via email, between the Lab - MERLIN Team (EIA) and the **USAID South Africa** and last a duration of 6 months. These dates are conditional on the USAID South Africa and SPACES implementation timelines, and as such are subject to change following discussion among all parties involved. The JPP can be updated with a new end-date should **USAID South Africa** decide to incrementally fund this project.

## **Timeline and deliverables for SPACES**

- Report on findings and recommendations: SPACES will develop a report presenting the findings and recommendations related to our research.
- May 24 – November 30, 2018

## **Key Contacts**

### **USAID South Africa**

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Organization: USAID

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**SPACES Consortium Contact:**

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Phone: 410-502-6079

**SPACES Scope of Work  
ASELPH**

**Background and Purpose**

SPACES is an initiative of the Monitoring, Evaluation, Research and Learning Innovations (MERLIN) Program through the U.S. Global Development Lab in partnership with the Bureau for Policy, Planning and Learning. SPACES aims to bring a variety of systems tools and methodologies that decision makers can use to enhance assessment of innovation impact potential to provide a comprehensive systems analysis. This approach to program design and implementation for USAID and its partners is an operational innovation championed and pioneered by the Lab and being tested throughout Operating Units within the Agency.

**Purpose of Evaluation:**

SPACES MERL to provide a suite of systems tools, tailored to answer the following question of interest:

*To what extent has the ASELPH Programme been effective in providing participants / students with skills that they have subsequently utilized on-the-job to positively impact South Africa's health system?*

**Activities:** Activities for the assessment will include:

Activity 1: Develop Research Plan Over the course of the first 4-6 weeks, SPACES will work to develop a research plan. The research plan will draw from information from the July 2017 scoping trip, additional discussion with USAID and ASELPH members to determine a method and timeline for the following:

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#### Activity 4: Presentation and final report

Based on the patterns and leverage points identified in system map and social network analysis, SPACES will develop a set of recommendations for the ASELPH program, MOH and other key stakeholders.

#### **DELIVERABLES**

- Report on findings and recommendations: SPACES will develop a report presenting the findings and recommendations related to our research.

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Washington, DC 20523