Facility Engagement Initiative
Final Evaluation Report, 2015-2019

Chris Lovato, Craig Mitton, Neale Smith, Graham Shaw, and Asif Khowaja

Centre for Clinical Epidemiology and Evaluation, Vancouver Coastal Health Research Institute

University of British Columbia— School of Population and Public Health

T: 604-875-4111 (ext.66937) **Email:** chris.lovato@ubc.ca ; craig.mitton@ubc.ca

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Key Messages

The Facility Engagement Initiative (FEI) is a unique large-scale effort to increase facility-based physician involvement in hospital-level health system decision making. Funding for sites, and central support to them, amounted to approximately $60 million in total.

The FEI required a mixed method evaluation. The UBC team, a contracted third-party evaluator, provided an evaluation rooted in relevant empirical and theoretical literature.

Findings

- Overall, physician respondents and to a somewhat lesser extent, Health Authority (HA) managers at the site-level, perceived the FEI had been worthwhile. Physicians in 10 case study sites also, in aggregate, consistently report positive change on a composite measure of change.
- At baseline, physician participants believed that engagement was an important issue, and also believed that – despite what some perceived as a history of rocky past relationships – health authority leaders would support greater engagement. Site-based HA managers expressed broadly similar opinions.
- 85% of eligible facilities ultimately met the criteria to be fully funded. Funded sites spent 68% of their money as of the end of 2018. The extent of funding was not correlated with the achievement of increased engagement as measured with survey instruments.
- Supports provided to the process by the Specialist Services Committee (SSC) were generally valued.
- Increased engagement was initially left open for sites to define in their own context; this contributed to early buy in. However, at the end of the first three years, physician participants still perceived there was a lack of consensus on the meaning of the concept.
- The FEI logic model emphasized increased communication among Medical Staff Association/physician society members, and between physicians and HA administration. Improvements in both of these were reported by physicians as among the most noticeable changes.
- Two quantitative measures of engagement were constructed, drawing on items from the annual Worklife Pulse survey, and an instrument developed for this evaluation (the Canadian Medical Facility Engagement Scale). Both showed slight positive change over time.
- Sessional fees comprised the major component of site spending, with roughly comparable uptake across hospitals of all sizes.
- The bulk of activities in case study sites primarily aimed to improve relationships. This is reasonable for the current state of evolution but activities need to move toward strategy

that will institutionalize and concretize changes with buy-in from physicians and HA partners.

- Early engagement of HA partners by physicians in their projects and activities seems to contribute to success. Project management support at the local level and succession planning for physician leadership will be an important means for sustaining impacts.

Executive Summary

The Facility Engagement Initiative (FEI) aims to increase engagement among specialist physicians and/or GPs with privileges in BC acute care facilities, both with their colleagues and with Health Authority (HA) management. These aims are consistent with the literature which suggests that improving collaboration and giving physicians a more meaningful voice in health system decisions will lead to improved patient care and better hospital working environments, and ultimately improved health and more effective health care spending. The initiative consists of Stage 1 infrastructure development, or preparing sites to receive and manage FEI funds, and Stage 2, wherein sites identify, prioritize and implement their preferred projects and activities meant to increase engagement.

The FEI defined engagement through the Doctors of BC Partnering with Physicians policy paper (2014), but left it to sites to further define engagement in a locally-relevant way. This contributed to physician buy-in, though it posed challenges as well.

The FEI logic model provides a visual representation of the intervention approach which served as the foundation for this evaluation. A mixed-method evaluation design with province-wide and case study site data was chosen to provide useful and credible evaluation findings.

Engagement Baseline

Data about baseline engagement was collected in a survey (referred to below as FEMS-1) and through interviews with MSA/physician society presidents and these data indicated that physicians perceived engagement as an important area for action with many seeing room for improvement in relationships between physicians and administration. As facilities began to plan and execute engagement activities, just over half agreed that HA administrators would welcome increased physician engagement. A selection of site-based HA managers was surveyed earlier in the evaluation, and responded in a broadly similar way to these questions.

Outputs

At the end of the evaluation, sixty four (64) out of 75 potentially eligible sites across all tiers (a measure of hospital size) and all health authorities had received full funding (85%). Sites reached the point of full funding at different times due both to their ability to complete the local work required and to the timely availability of support from the Specialist Services Committee (SSC). Support to facilitate site-level implementation was provided primarily through the team of Facility Engagement Liaisons, or FELs. As of February 2019, eight (8) sites remain in Stage 1 of the process (11%). Three sites were not actively involved (4%).

FEI spending in Stage 2 over the course of the evaluation period amounted to $39.7 million: $30.8 million was spent by the 64 fully funded sites, and $8.9 million by the SSC central office. As of December 31, 2018, the sites had expended $20.9 million (68%) of their received funds.

Sites differed considerably in the extent to which they had expended their funds received. Of the 64 fully-funded sites, 8 had spent less than 40% of their allocation by the close of data collection, while 15 had spent 80% or more of their budgeted funds. The rate of spending increased as sites came on board and began implementation. Overall, 2% of expended monies were disbursed in the 2015/16 fiscal year, 12% in 2016/17, 38% in 2017/18, and 47% in the second and third quarters of 2018 (June-December).

FEI funds generally supported physicians' time in attending meetings and undertaking engagement activities and projects, and hiring staff to support the MSAs' operations and administration. To be more specific, at the facility-level, MSAs/physician societies spent FEI funds upon sessional claims (47% of the total), internal operating expenses (22%), meetings, including such things as meals, business meetings, event registration, transportation, accommodation and equipment rentals (13%), salaries and related expenses (7%), office supplies and communication (7%), and professional fees/services (4%).

The largest proportion of spending was devoted to sessional claims; at the provincial level as a whole, a total of $9.8 million fell into this category over the course of the evaluation period. These sessional claims appear to enable physician involvement, and move things forward by providing compensation for time spent on the FEI. Regardless of the size of facility, the typical physician active in the FEI claimed for approximately the same number of hours.

Outcomes

Key objectives of the FEI included the short-term outcomes of (1) improved communication among physicians, (2) improved communication and strengthened relationships between physicians and health authority management, and (3) improved structures and processes for communicating between physicians and management, ultimately leading to improved involvement of physicians in HA decision making.

In relation to these objectives, qualitative data showed that physician participants felt that the FEI's largest achievements had been in improving relationships among physicians. To a lesser degree, collaborative relations between physicians and HA administrators were also seen to have increased. Further improvements attributed to the FEI included better access to educational opportunities, progress toward a healthier work environment, and increased attention to physician wellness.

Quantitatively, the evaluators operationalized engagement using the 9-question Worklife Pulse (administered to Doctors of BC members in 2016, 2017 and 2018 as part of an annual physician survey). A second survey instrument, designed to be completed by administrators as well as by physicians, and referred to as the Canadian Medical Facility Engagement Scale (CMFES), was also developed specifically for this evaluation. Both of these instruments investigate relationships between physicians and HA administration. We also used a survey at the close of the evaluation to gather perceptions of change from physicians who had registered with FEMS.

Summary data from all three instruments consistently suggest a trend toward improvement in engagement and in communication between physicians and between physicians and health authority leaders. However these differences, when adjusted for potential confounders, are not statistically significant at the provincial level. This result should not be surprising due to the relative short time frame for the evaluation. They also suggest continued need for greater participation on the part of the HAs. It may be that there will continue to be observable increases in engagement over time.

Implementation

The SSC provided two main supports to the FEI at the site-level: Facility Engagement Liaisons (FELs) and FEMS (the Facility Engagement Management System).

FELs played a key role in guiding sites through the incorporation and infrastructure development processes, confirmed by both qualitative interviews and survey data. It appeared that FEMS provided an easy and efficient way for FEI physician participants to make claims and receive payment.

FEI staff made on-going changes in response to site feedback and evaluation results. Sites which joined the FEI more recently experienced a more streamlined and clearly defined process. Opportunities for sharing stories of success and learning have increased.

Strategies used by physician societies to enhance engagement

The evaluators concluded in a review of published literature that approaches to increasing physician engagement in health system decision making could be summarized into 5 themes. All of these were used to differing degrees at different sites.

This evaluation also draws upon a model of "institutional work" which suggests that intervention to increase physician engagement requires four types of work: structural, conceptual, operational, and relational (Cloutier et al, 2016). Qualitative analysis of activities at case study sites suggests that the greatest effort was devoted to relational work; 47% of coded activities were focused upon relational work, 28% conceptual, 18% operational and 7% structural.

Factors Predicting Engagement and Facilitators and Barriers to Success and Sustainability

Five key factors were reported in interviews to be related to successful implementation and sustainability: (1) role of project manager, (2) timing of physician-HA administration contacts, (3) depth of relations between physicians and HA administration, (4) connections, coordination and integration between FEI and other programs, and (5) succession planning. Quantitative analyses of survey data did not find any variables which significantly predicted changes in physician engagement; no association was found between the rate of site-level expenditure and the achievement of increased engagement.

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1.0 The Facility Engagement Initiative (FEI)

The Facility Engagement Initiative (FEI) aims to increase engagement among specialist physicians and/or GPs with privileges in BC acute care facilities, both with their colleagues and with Health Authority (HA) management. Funding was allocated for the FEI in the 2014 Physician Master Agreement, and the broad parameters for the initiative were outlined in a Memorandum of Understanding between the Ministry of Health, the six HAs and Doctors of BC (dated April 1, 2014). The Specialist Services Committee (SSC) oversees the implementation of the FEI.

Literature suggests that giving physicians a greater and more meaningful voice in leadership and collaboration with health organization managers, to improve both patient care and their own working environments, will lead to a higher performing healthcare system (Denis et al, 2013; Spurgeon, Mazelen, Barwell, 2011). A main tenet underlying the FEI is that the most effective way to increase physician engagement and communication with HAs is to support and empower local medical staff in identifying, prioritizing and addressing their issues at the facility with the HAs, and for the HAs to work with Medical Staff Associations (MSAs) on HA priority initiatives or issues that directly impact physicians.

The FEI logic model (Appendix A) provides a visual representation of the intervention approach which served as the foundation for this evaluation. The model includes as a key output the strengthening of MSAs. The evaluation described in this report focuses on the short-term outcomes, anticipated in 1-3 years, including (1) improved communication among physicians, (2) improved communication and strengthened relationships between physicians and health authority management, and (3) improved structures and processes for communicating between physicians and management. It is expected that these outcomes will lead to increased representation, leadership and engagement of physicians in 3-5 years, resulting in overall increases in engagement and participation in HA planning directly affecting physicians in 5+ years. These timeframes cannot necessarily be applied to any individual site; for some the long-term aims can be achieved more quickly than five years, while others may take longer. The logic model anticipates that these increases in engagement, communication and participation of physicians in decision making will result in better health care and lower health care costs; however, the evaluation does not assess these pathways directly.

Operationally, the initiative has been implemented in two phases. Stage 1 involved efforts to equip sites with the infrastructure necessary to be approved for full funding and was launched in

January 2015. Sites were allocated funds as part of the startup phase, with the amount dependent upon hospital size ($75K per site for the three largest tiers, $35K for the three smallest)[1].

In Stage 2, each site received a funding allocation based upon its size. Sites used the funds they received to pursue site-specific projects and activities that addressed the engagement-related opportunities as perceived by physicians at the individual hospitals, and other care or work environment improvement opportunities. The first sites were approved for full funding by the SSC in Fall 2016. The two stages overlapped in the province as a whole; that is, some sites proceeded to Stage 2 at the same time as others continued to work through the Stage 1 process.

A key element of the support structure provided by the SSC to local sites included a Facility Engagement Liaison (FEL). For example, each site was assigned a FEL to work with them in Stage 1 to prepare the sites to request and receive their funding allocation. FELs serve as a two-way information conduit between SSC and the individual sites. FELs had access to and could share with sites a variety of templates (e.g., Society constitution and bylaws, working group terms of reference, strategic planning and prioritization worksheet, staff job descriptions, incorporation checklist). FELs play an ongoing role in Stage 2 as well.

As the FEI has evolved, additional activities to support rollout and implementation have been developed. Reporting, financial processing, and other tools have been provided, e.g., the construction, beta-testing and rollout of FEMS (Facility Engagement Management System) and SEAT (Site Engagement Activity Tracker). Communications supports include a website, tools and templates, and an e-newsletter. Regional workshops bring sites together for mutual learning and the opportunity to share experiences.

Given that the FEI is an innovative and evolving province-wide, multi-stage, multi-site program, a mixed-method evaluation design with both province-wide and case study site data was determined to be the approach that would result in the most useful and credible evaluation findings. By using both quantitative and qualitative data we were able to examine outputs, process and outcomes, including anticipated and unanticipated results. The evaluation questions addressed in this report are noted in appropriate sections throughout; full details of all questions and sub-questions are provided in Appendix B.

At the provincial level we collected data using interviews and surveys. In the 10 case study sites (described in Appendix D) we collected data using interviews, observations, surveys, and administrative data. Interviews were conducted with key stakeholders including MSA executive and working group members, health authority site-based leaders, health authority senior leaders, and FELs. Several surveys were conducted with different audiences and foci between 2016 and 2019; Appendix C lists these, along with providing information about their target audience, number of responses, and response rate where this can be calculated. Observations were conducted by research staff. All site-level economic data were extracted from FEMS. For more

[1] Tier I, <21 beds; Tier II, 21-50 beds; Tier III, 51-100 beds; Tier IV, 101-150 beds; Tier V, 151-300 beds; Tier VI, 301+ beds

detailed information regarding methods see Appendix C. As external academic evaluators we brought an "arm's length" approach to this evaluation that is rooted in, and builds upon, existing theory and research evidence.

1.1 Structure of the report

The sections following this introduction are organized as follows. Section 2 presents data on the baseline state of engagement across hospitals prior to the start of FEI Stage 2 activities. Section 3 addresses logic model outputs and Stage 2 costs. In section 4, we address the extent to which the FEI has achieved its intended short-term outcomes, using both qualitative and quantitative data, while in section 5 we look back at implementation to examine what factors might account for the achievement (or not) of outcomes, again by using both qualitative and quantitative analyses. Section 6 identifies some limitations of the evaluation. We present conclusions in section 7, and from these, proceed to propose several recommendations in section 8, targeted explicitly to each of the FEI stakeholder groups.

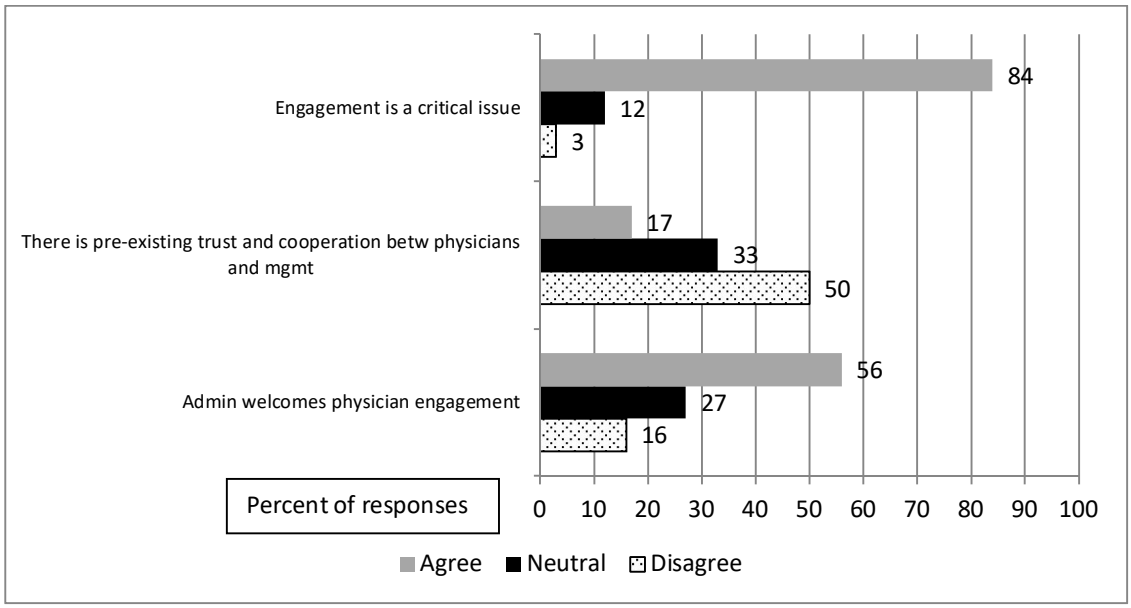
2.0 Engagement baseline

Q: What was the perceived level of engagement at facilities prior to implementation of Stage 2?

FEMS-1 survey items focusing on engagement were used to describe where participating sites were, in terms of engagement, when they began Stage 2, the fully-funded stage of the FEI. The survey was "pushed out" to physicians across the province when they first registered with FEMS. These data were supplemented with interviews with MSA/Physician Society presidents. (conducted approximately 3 months following approval of full funding). The Interim Evaluation Report (April 2018) dealt at length with Stage 1 of the FEI; only key findings are recapped and updated here.

Results from FEMS-1 indicated that physicians perceived engagement as an important area for action, thus supporting the effort to address it using a program such as the FEI. Some perceived the situation at their facility to be one of good pre-existing relationships among the physicians and administration, though greater numbers perceived the historical state of affairs to be poor. A slight majority of respondents perceived that HA administration was open to increased physician engagement. See Figure 1.

Figure 1: Physician perceptions on engagement prior to implementation of FEI Stage 2



Similar questions were asked in a survey of HA managers conducted between December 2017 and March 2018, as described in detail in the Interim Report. The sample size for this survey (n=36) is much smaller however. 28% of managers agreed or strongly agreed that pre-existing relations had been trusting and cooperative (34% were neutral; only 38% disagreed or strongly disagreed). This is a somewhat more positive response than provided by the physicians and depicted in Figure 1. Very comparable to physician responses were the proportion of managers who agreed that increasing physician engagement was a priority issue (82%); 18% were neutral, none disagreed.

3.0 Outputs

Q. What proportion of MSAs completed Stage 1 and began implementing Stage 2 (i.e., achieved incorporation and SSC sign-off on fund transfer agreement)?

Q. What did Stage 2 cost?

Moving to outputs, here we assess the extent to which sites passed through Stage 1 and into Stage 2 of the FEI process. We examine the costs involved for Stage 2 (Stage 1 costs were considered in the Interim Report). The primary data to address these questions comes from document review (SSC funding decisions) and the financial data provided for sites via FEMS and from the Doctors of BC accounting.

3.1 Successful Completion of Stage 1

As shown in Figure 2, as of December 2018, sixty-four (64) out of 75 potentially eligible sites had received full funding (85%).

Figure 2: Cumulative number of fully-funded sites

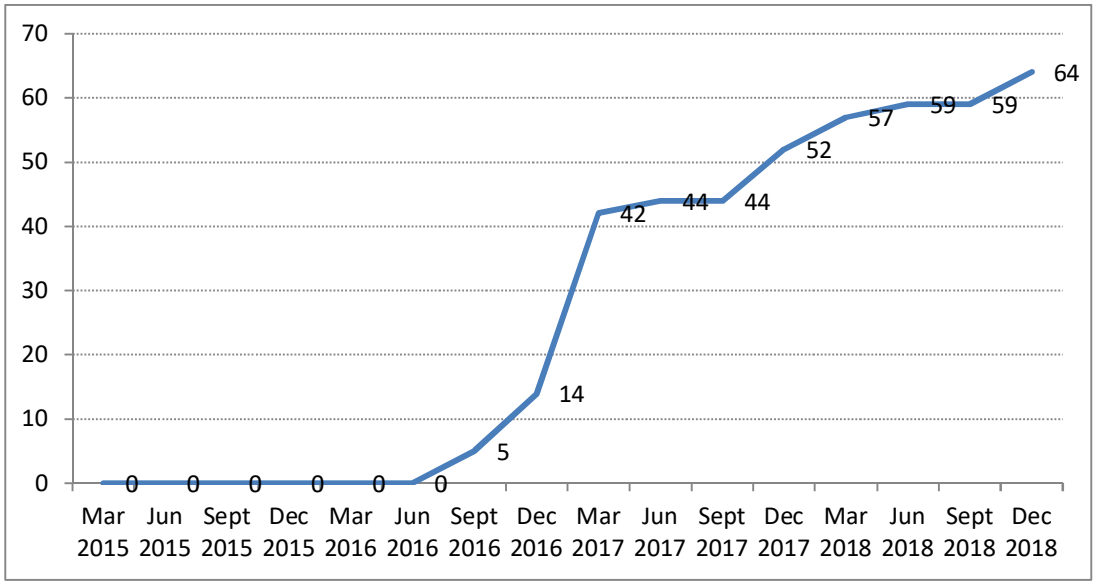


Figure 2 clearly illustrates the length of time required to complete Stage 1 of the process. As of February 2019, eight (8) sites remain in Stage 1 (11%), i.e., they are in receipt of start-up funds. Three sites were not actively involved (4%). The distribution of sites by HA and funding tier is depicted in Table 1 below.

Table 1: Fully funded, active in Stage 1 (partial), and inactive sites (as of Feb 28-2019), by Health Authority and tier

	Health Authority						
Tier	FHA	IHA	NHA	PHSA	VCH	Island	Total
VI	3 Full	1Full	--	1 Full	2 Full	2 Full	9
V	4 Full	2 Full	1 Full	1 Full	2 Full	--	10
IV	1 Full	1 Full	--	1 Full	--	2 Full	5
III	1 Full	2 Full	--	1 Full	--	2 Full 1 Partial	7
II	1 Full	2 Full 1Partial	4 Full 1 Partial 1 Inactive	--	2 Full	2 Full	14
I	1 Partial	12 Full 1 partial	8 Full 2 Partial 1 Inactive	--	1 Full 1 Inactive	2 Full 1 Partial	30
Total	11	22	18	4	8	12	75

3.2 Stage 2 Costs

The FEI in total was funded for approximately $60 million. About $20 million was associated with Stage 1 and described in the Interim Report. Stage 2 spending over the course of the evaluation period amounted to $39.7 million. This includes $30.8 million for the 64 fully funded sites (described below), and SSC central spending of $8.9 million (described in detail in Appendix E).

The $30.8 million received by the 64 fully-funded sites represents 78% of the total $39.7 million. As of December 31, 2018, the sites had expended 68% ($20.9 million) of their received funds. The largest facilities (tiers 5-6) had spent 65% of this total outlay ($13.6 million), while 16% ($3.3 million) was accounted for by mid-size facilities (i.e., tiers 3-4). The smallest sites in tiers 1-2 accounted for 19% ($4.0 million).

Spending varied substantially among health authorities (Table 2). This variation in part reflects differences in the number of facilities – where IHA includes 20 fully-funded FEI sites, the PHSA includes only 4. Thus, a higher number of FEI sites in a given health authority substantially contributed to the total spending.

Table 2: Stage 2 FEI sites-spending within each health authority, to December 2018

Health Authority	Number of full funded sites	Total spending (millions)	% of FEI spend accounted for by sites in each HA
IHA	20	$ 5.4	26%
FHA	10	$ 4.4	21%
Island Health	10	$ 4.0	19%
VCH	7	$ 3.7	18%
PHSA	4	$ 1.8	8%
NHA	13	$ 1.7	8%
Total	64	$20.9	100%

The extent to which funds remained unspent varied markedly across sites. To demonstrate this range, we note that as of December 2018, of the 64 fully-funded sites, eight (13%) had spent less than 40% of their allocation, while 15 (23%) had spent 80% or more of their budgeted funds. As might be expected, sites which have been fully funded for a longer period of time have spent a greater proportion of their available monies: while sites approved by the SSC for full funding prior to January 1, 2017 had spent 76% of their allocations, those approved during 2017 had spent 63%, and those approved in the 2018 calendar year had spent 54%.[2]

[2] This is calculated using date on which full funding was approved by the SSC. There was often some time lag between this date and when sites actually received these funds; the reasons for this are unclear. It may reflect sites being less ready to receive funds than claimed, or it may reflect limits in the ability to disburse funds to sites in a timely manner.

We can further see possible size and time effects by looking at the lowest and highest spending sites (Table 3).

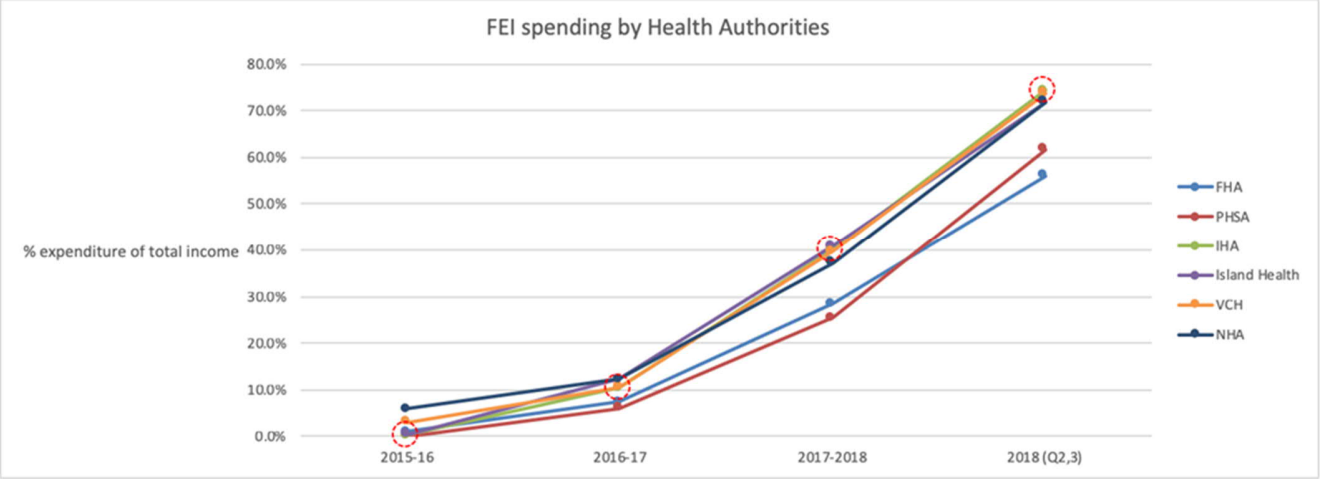
Table 3: Percent of budget spent in lowest and highest spending sites, by tier and year of funding

Sites spending <50% of budget				
# sites*	Funded Year		Tier	
17	2016	1 (6%)	I-II	10 (59%)
	2017	13 (76%)	III-IV	5 (29%)
	2018	3 (18%)	V-VI	2 (12%)
		17 (100%)		17 (100%)
Sites spending >80% of budget				
10	2016	5 (50%)	I-II	1 (10%)
	2017	5 (50%)	III-IV	4 (40%)
	2018	0	V-VI	5 (50%)
		10 (100%)		10 100%)

*based on 58 sites whose full funding was approved prior to June 1, 2018

Overall, 2% of expended monies were disbursed in the 2015/16 fiscal year, 12% in 2016/17, 38% in 2017/18, and 47% in the second and third quarters of 2018 (June-December)[3]. This acceleration in spending holds across all of the HAs, as shown in Figure 3 below. This is reasonable since the number of approved fully funded sites increased over this period.

Figure 3: FEI spending by sites within each health authority by fiscal year



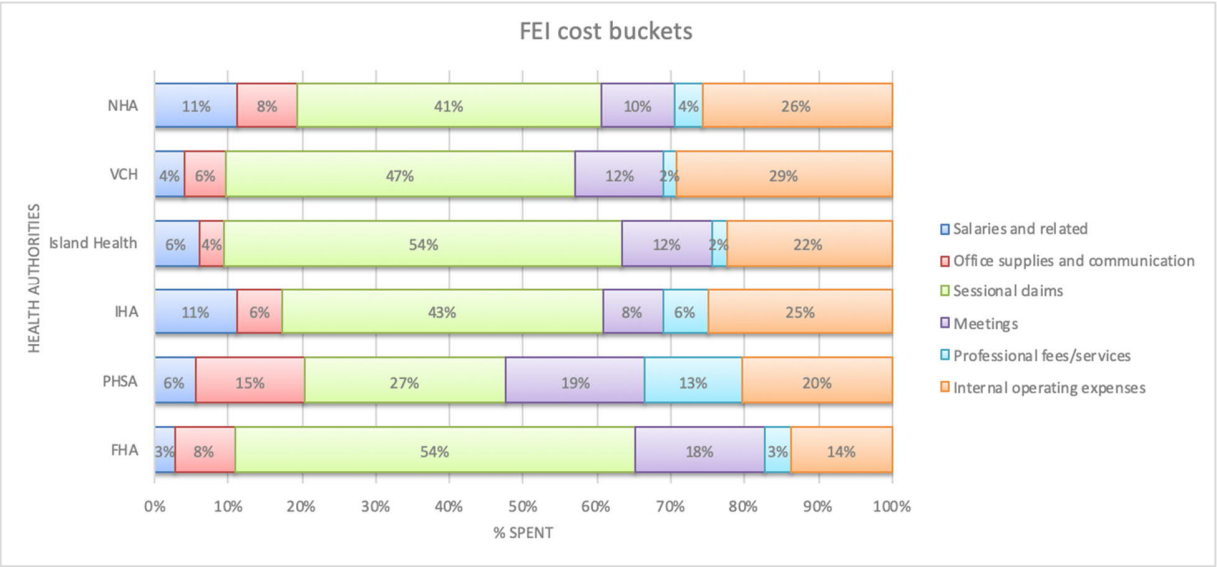
It should be noted that this spending accounts only for funds available to MSAs/physician societies. An important additional element is HA in-kind and direct financial support to work promulgated through the FEI (for instance, if a hospital invests in software needed to support a physician-led engagement project prioritized by the MSA); there is unfortunately no effective

[3] FY= April 1-March 31

mechanism at this time to capture those expenditures and incorporate them into the economic analyses.

At the facility-level, FEI implementation costs can be clustered into six 'buckets'. In descending order of proportion, these are sessional claims (47% of the total), internal operating expenses (22%), meetings, including such things as meals, business meetings, event registration, transportation, accommodation and equipment rentals (13%), salaries and related expenses (7%), office supplies and communication (7%), and professional fees/services (4%).

Figure 4: FEI cost buckets by sites within each Health Authority



As this indicates, the largest proportion of spending was devoted to sessional claims; at the provincial level as a whole, a total of $9.8 million fell into this category over the course of the evaluation period, with some health authorities spending as low as 27% (PHSA) and others as high as 54% (FHA) in this category. Physician sessional payments were widely welcomed, not so much for the dollar value but as symbolic recognition of the worth of physicians' time. They also allowed physicians to put dedicated time towards activities or projects that otherwise would be done 'off the side of the desk'.

> "They're not coming because they're making a lucrative business by coming to meetings. They make more in their office. It's just that recognition that their time is valued …. So it's not about the money … it doesn't have to be exorbitant but I think that it speaks volumes." (HA manager, C16)

Table 4 below draws upon FEMS data to describe how many physicians have made one or more claims for sessional payment over the course of the FEI (by tier); this is a possible proxy measure for the extent to which MSA members have been engaged with the initiative, one of the primary engagement foci.

Table 4: Physicians claiming sessional payments

Tier	Average $ of sessional claims per reporting facility	Average #claimants per reporting facility*	Median # of claimants per reporting facility	Range (no. of claimants) per facility	Average $ claimed per physician **	Estimated mean MSA size[4]	Estimated percent engagement (col. 3/col. 7)
VI	$355,121	110	98	6-196	$3,228	680	16.2
V	$268,682	87	76	22-208	$3,088	270	32.2
IV	$161,759	34	27	14-68	$4,758	149	22.8
III	$107,155	34	40	5-56	$3,152	109	31.2
II	$77,146	21	21	8-36	$3,674	65	32.3
I	$35,661	10	9	1-21	$3,566	20	50.0

*Total number of facilities=53

**Note that MSA executive members are likely to claim for higher amounts of time than physicians who are involved solely at the Working Group or individual event/activity level

These data suggest that, regardless of the size of facility, the typical physician active in the FEI devotes (or at least submits claims for) approximately the same number of hours (assuming that hourly sessional rates are equivalent across all facilities).

It should be noted that physicians continue to volunteer time towards engagement and related activities, despite their new ability to be paid via FEI. We asked a sample of interviewees across some case study sites to estimate the portion of their time that went unremunerated; on average, this was suggested to be about 20% (median, 15%, with a range of 0-50%, N=11). In other words, FEI sessional payments are in fact an under-estimation of the resources which are required to deliver the outcomes so far achieved (though the degree of under-estimation cannot be precisely calculated from available information).

4.0. Outcomes

Q. To what extent have short-term outcomes, identified in the logic model, been achieved?

Q. What changes were attributed to the FEI by facilities?

Q. Has the level of baseline physician engagement increased?

The primary outcome question in the evaluation assessed whether intended short-term outcomes identified in the logic model were achieved. Short-term outcomes included: (1) improved communication among physicians, (2) improved communication and strengthened relations

[4] It is hard to determine how many members MSAs have. This figure is estimated from the 2017 Worklife Pulse survey results. We calculated the average number of responses for sites in each tier, and scaled up from an overall response rate of 25% approximately. Almost no tier I sites have reportable WLP results, which suggests that they fall below a threshold of 5 or fewer responses; so here we assume 5 responses to be a 25% portion of the total MSA membership.

between physicians and management, and (3) improvements in structures and processes for communication between physicians and HA administrators.

We also examined data to determine if there were positive changes in long-term outcomes, that is, "Has the engagement needle moved?" To address these questions, the evaluation drew upon province-wide FEMS-2 survey data, supplemented by interviews with FELs, and with physicians and managers in case study sites. Data from the Worklife Pulse surveys (province-wide) and the Canadian Medical Facility Engagement Scale (CMFES) (case study sites) provide some quantitative measures of possible change in engagement over time.

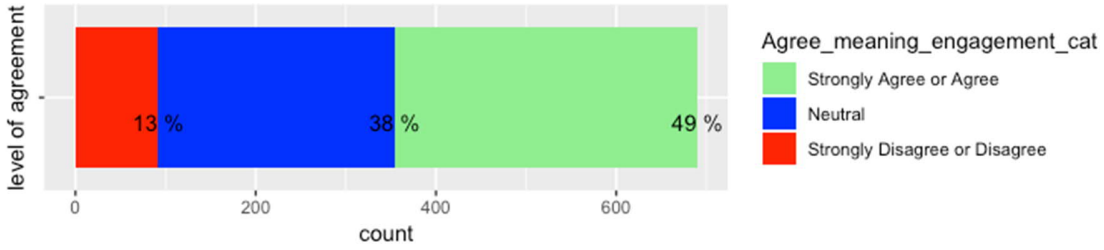
4.1 Defining "Engagement"

We begin this section with a discussion about the concept of engagement because whether or not the FEI has succeeded in increasing physician engagement depends upon how engagement is defined and measured. There is currently no universally agreed-upon definition of "engagement" in the literature, and it is not always clear what physicians are being asked to engage in or with. For example, physicians may report high levels of engagement with their work or with colleagues, while at the same time reporting low engagement with managers and their medical center (Whitlock & Stark, 2014).

Doctors of BC defines physician engagement as, "The active and positive contribution of physicians within their normal working roles to maintain and enhance the performance of the organization, which itself recognizes this commitment by supporting and encouraging high-quality care" (Doctors of BC, 2014). The FEI's individual sites were encouraged to further define engagement in ways that resonated with their local context. Using an empowerment approach was appropriate, given the important role that context and history play in shaping physician-administration relationships. While this approach has many benefits, the lack of clarity on the definition of engagement has been an ongoing challenge for many sites. In a number of cases, the lack of specific guidance led to uncertainty as to what actions should be undertaken to increase engagement. Some individuals or sub-groups defined engagement narrowly and in ways that did not address broader interests, and in some instances, there was confusion about what was and was not an eligible funding expense.

This definitional issue is reflected in FEMS-2 survey data (collected at the end of the evaluation), where slightly less than one-half of respondents (49%) answering a question about the meaning of engagement agreed that their MSA/physician society members had a shared understanding about its meaning (see Figure 5).

Figure 5: Perceived agreement on meaning of engagement ("We have reached a high level of agreement about what physicians mean when they speak of physician engagement")



As reflected in interview data, facilities appeared to define engagement as: (1) engagement among physicians, including across Departments, and (2) engagement between physicians and HA management; sometimes distinguishing between local and higher-level HA leadership.

> "When I think of engagement, there's one way of thinking of it, that's what's the level of morale among the troops kind of engagement, and a different engagement would be to what extent are physicians as a group engaged, connected to the hospital site so decisions are made in a joint fashion in the best way possible…" (physician, E2_4)

Sites placed different emphases upon each of the components of this definition.

The understanding of engagement as being both among physicians and with HA management is consistent with the short-term outcomes described in the FEI logic model related to communication and relationship building between physicians and administrators. It also can involve the introduction of structures and processes for communication and information exchange between physicians and HAs.

It is important to recognize that engagement can occur at different "depths", which may be appropriate depending upon the context and nature of issues. The International Association of Public Participation (IAP2) has recognized this point in its participation framework, which identifies a "spectrum" of participatory levels (Vogel et al, 2014): information, consultation, involvement, collaboration and empowerment. Some sites have recently expressed interest in employing or adapting such a framework within their facilities. This could represent an important future step in defining engagement for the FEI initiative.

In this report we used both qualitative and quantitative definitions of engagement. Qualitatively, we drew upon key informant interviews to determine the ways in which participants expressed their perceptions of engagement at their sites. Quantitatively, we operationalized engagement using the 9-question Worklife Pulse (administered in 2016, 2017 and 2018 as part of an annual survey, which is sent to all members of Doctors of BC), and an additional instrument developed for this evaluation, referred to as the CMFES. We designed the CMFES to be completed by both

physicians *and* administrators. It was administered in 2018 and 2019 in 7 of 10 case study sites agreeing to participate.

The Worklife Pulse tool includes 9 items from a survey developed by Accreditation Canada in 2006. While the items are reported individually, a published validation study (Lavigne et al, 2012) supports treating these items as a single factor. We used the combined items as an indicator of engagement levels. The CMFES instrument is a short form (12 items) derived from a larger instrument that has been used in Quebec (57 items). An analysis using BC data shows that the factor structure of this instrument is maintained in the short form. An advantage of the CMFES over the Worklife Pulse is that it includes the manager as well as physician perspective, and was administered with the ability to track individual responses over time. The findings were used as an outcome measure and as a means to confirm the validity of changes observed on the Worklife Pulse.

4.2 Short-term Outcomes

In this section, we address the achievement of short-term outcomes identified in the logic model. Physicians clearly identified changes in these areas. As evidence, an open-ended question from the FEMS-2 survey found that the two most noticeable changes, from the physician perspective, were in improved relations among physicians, and improved cooperation and collaboration between physicians and HAs. (See Table 5; an expanded version of this table is included in Appendix F.)

Table 5: Reports of improvements attributed to the FEI

	Number of comments reflecting the theme of Most Noticeable change (out of N=479)
Improvements in relations and collaboration among physicians	140 (29%)
Improved cooperation and collaboration between physicians and HAs	79 (16.5%)

Below, we address these two outcomes in detail, illustrating with comments drawn from the FEMS-2 survey, as well as from the larger qualitative data set, and also with some individual items drawn from the Worklife Pulse and CMFES surveys. We also address the third short-term outcome, related to the establishment of structures and processes for communication.

4.2.1 Improved communication among physicians

Several comments from the FEMS-2 survey, as well as from other interviews, illustrate how communication among physicians has improved. This has led as well to better relationships and

better ability among physicians to collectively present a common voice around issues of importance to them.

> "Improving physician culture in our facility (and our region) by encouraging collaboration, collegiality, and connectedness…. FEI has made a very positive impact to physician life at our facility." (FEMS 2 - survey)

> "Personally, it's allowed me to meet people in the institution that I would otherwise not have and as a result there's more, when I see them in the corridors, how are you, whereas before I would never have known who they were and said hello to them – with this has come a sense of belonging that is improved." (physician, E-27)

> "There's more recognition and interaction between the different departmental members. There's some of us who've worked at [site] for over 20 years and there are many of us who would not recognize some of the other physicians. We've had no interaction with them …What this initiative has done is to allow members from different departments to get to know each other better, to actually get to know who they are." (physician, E22)

4.2.2 Improved communication and strengthened relations between physicians and management

Physicians also provided many comments which indicated that they saw improved communication with the HA, and better relationships between physicians and managers, as results of the FEI. For instance, FEI activities were seen to be "bringing people together (physicians and administrators) to talk more than they otherwise would." (FEMS-2 survey).

> "It seems there is more involvement by the physicians to make change in the hospital by working with management. It also seems the management is more supportive and wanting physician involvement/help/assistance." (FEMS-2 survey)

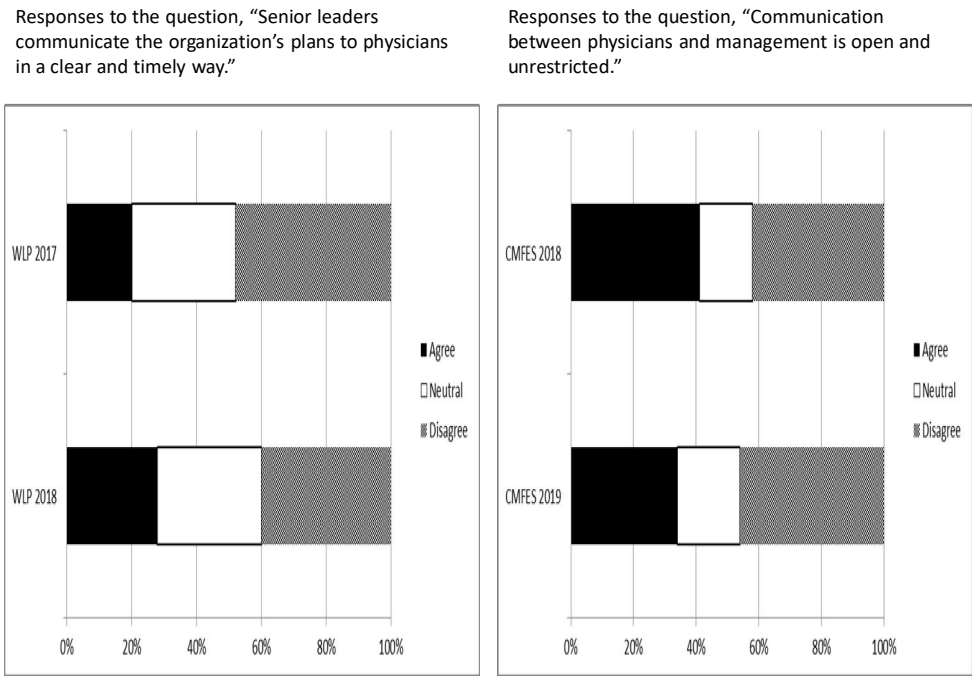
> "Admin is starting to see physicians as collaborators who add value rather than employees to be managed and controlled." (FEMS-2 survey)

Several sites noted that relationships had even moved beyond communication, towards collaboration, in order to best achieve working group goals and to fit the spirit of the MoU.

There are also items from different surveys which speak to this outcome. The Worklife Pulse survey includes a question on whether or not physicians agree that, "Senior leaders communicate the organization's plans to physicians in a clear and timely way." This is a measure of one-way communication; the lowest level on the IAP2 spectrum, but nonetheless relevant to this outcome. Across all facilities, there was an increase from 2017 to 2018 in the proportion of Doctors of BC members agreeing with this item (see Figure 6).

The CMFES also contained a question which addresses physician-administration communication, “Communication between physicians and management is open and unrestricted.” In this case, the direction of change was the opposite, with a smaller proportion of respondents agreeing with this proposition in 2019 than in 2018 (see Figure 6). However, note that these are two survey questions are worded differently, and answered by different samples, at different points in time.

Figure 6: Change in time on survey items related to physician-communication, Worklife Pulse 2017-2018 and CMFES, 2018-2019.



4.2.3 Improvements in structures and processes for communication between physicians and HA administrators

Though fewer in number, there were also comments in the FEMS-2 survey and in the interview data which reflect a physician perspective that improved structures and processes for communication had been put in place through the FEI. For instance, the establishment of regular meetings between physicians and management was noted in multiple sites.

> There are now "meetings where administrators and physicians meet across the table and discuss decisions and goals, rather than these decisions being made in silos. Relationship building has also been positive" (FEMS-2 survey)

Some quality improvement efforts, which involve physicians and managers working together to make changes in hospital procedures or policies, also provide a potential structure through which relationship building occurs.

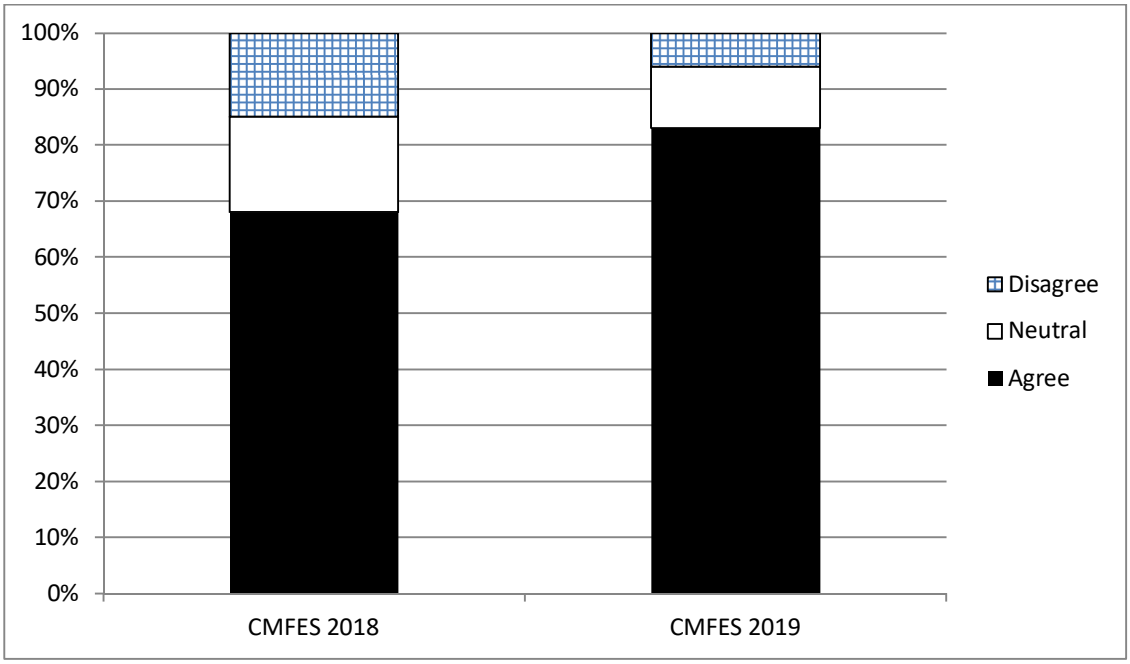
> "Projects can be – they can be useful in their own right. And even if they have nothing to do with engagement they can lead to engagement. So the projects would always have [Health Authority] in some way involved because you can't have a project in the hospital without [it] …. So it immediately leads to relationships and relationships are necessary for engagement." (MSA chair, G18)

There were some respondents, however, who saw less progress on this outcome.

> "We're not included in decision-making processes, despite all the mandated, collaborative approaches and all the meetings that we attend -- the HA just hasn't found a good mechanism to integrate the physician voice into the process at this time" (physician, E2_5)

One item from the CMFES, on participation in committee work, can be seen to speak to structural aspects of physician-administration relationships. In this case, there is an increasing proportion of 'agree' responses reported in 2019, compared to 2018 (see Figure 7).

Figure 7: Responses to the question, "I participate on committees in order to improve medical services at this hospital", 2018-2019.



It may be too early to make a conclusive determination as to whether there have been improvements in structures and processes. We found that 39 of 326 site-level activities described

in SEAT to involve attempts to change or establish structures. It will be important to assess if this proportion increases going forward.

4.3 Changes in long-term outcomes

We also attempted to see whether 'engagement' overall had been improved. Measures drawn from three different survey instruments – Worklife Pulse, CMFES, and FEMS-2 – were used to operationalize the concept for this purpose. The extent to which these measures show any change should be interpreted cautiously. Respondents in a number of different sites were well aware that it takes time to achieve culture change; they want to be sure that the SSC does not have unrealistic expectations about what was likely to be achievable during the time period covered by this evaluation.

> "Things were in a dormant state for so long, it's going to take time for some of these things to develop, some of the positive gains. So the people that are at a high level looking at whether or not this is value added money that we're doing here have to understand that it's kind of like bringing a patient back from the dead. You just need to give it some time to develop" (MSA chair, G6).

4.3.1 Provincial level changes in engagement as measured by the Worklife Pulse survey

The engagement measure based upon Worklife Pulse scores includes data from 39 sites; scores for most small sites are suppressed from reporting due to small numbers of responses. Of these 39, between 2017 and 2018, fourteen (14) facilities recorded a decreased aggregate Worklife Pulse score, while 25 reported improved scores. An improved score means that, across all respondents at a site, the average response to the sum of responses of all nine questions has increased; in practice, this is likely to mean that there are fewer 'disagree' responses and a greater number of 'neutral' or 'agree' responses. It may mean improvement across all nine questions, or larger movement on some questions combined with steady or even lower responses to others. Consideration of individual questions is needed in order to determine what might most be driving any observed patterns of change; such analyses have not been conducted for this report.

Table 6 below shows improvement in summary engagement scores between the 2017 and 2018 administrations of the Worklife Pulse survey items. Summary engagement scores represent the average response to all 9 items combined, and so range from a possible minimum of 9 (strongly disagree) to a possible maximum of 45 (strongly agree). Additionally, these scores can be reported on a 0-1 scale, where 0 represents a situation in which all respondents strongly disagreed with all items, and 1 represents a situation in which there was strong agreement with all items; these can be read as percentages of 'total agreement' or of change over time.

Table 6: Changes in Worklife Pulse (WLP) mean engagement scores, 2017 to 2018

	2017 mean engagement score WLP*	Rescaled (0-1) **	2018 mean engagement score WLP	Rescaled (0-1)	Mean difference	Rescaled (0-1)
All FEI eligible respondents without missing data on any of the nine questions	24.73	0.44	25.5	0.46	0.27	0.02
Fraser	24.72	0.44	26.51	0.49	1.79	0.05
Interior	23.09	0.39	24.99	0.44	1.90	0.05
Island	24.62	0.43	23.38	0.40	-1.24	-0.03
Northern	27.56	0.52	28.02	0.53	0.46	0.01
PHSA	25.08	0.45	25.75	0.47	0.67	0.02
Vancouver Coastal	25.4	0.46	25.16	0.45	-0.24	-0.01

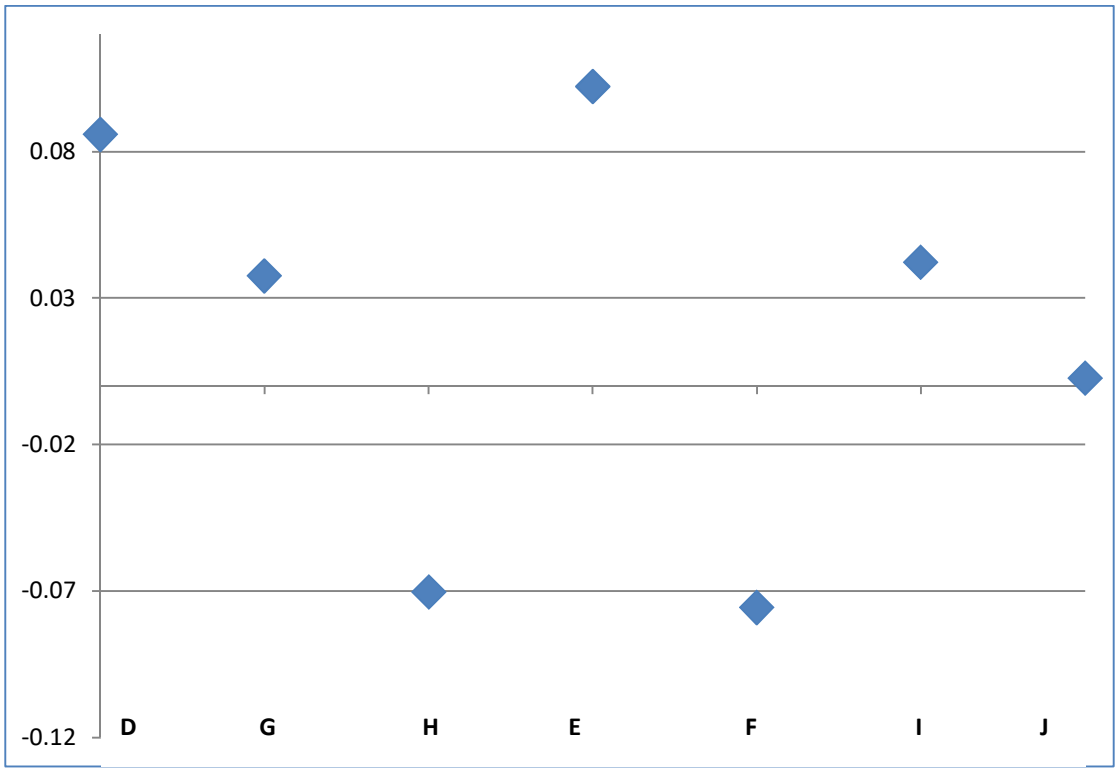
*Minimum possible score =9, maximum possible score =45
**Rescaled, from a minimum of 0 to maximum of 1

Table 6 thus shows a slight increase of 2% overall in aggregate Worklife Pulse scores between 2017 and 2018. At the health authority level, change ranged from an increase of 5% to a decrease of 3%. The extent of change was in the same range when we consider hospitals by tier, with change calculated from a 5% decrease in tier IV sites, to a 4% increase in tier III. Size has no obvious relationship to the direction of change.

4.3.2 Changes in engagement as measured by CMFES

The short form engagement survey, or CMFES, was administered at two points in time to seven case study sites. As indicated in Figure 8, on a 0-1 scale, between 2018 and 2019 five of the sites showed an increased score, and two a decreased score; whether or not change was in a positive direction does not appear to be related to the size of the facility. (See Appendix D for additional details.)

Figure 8: Changes in CMFES aggregate scores in case study sites, smallest to largest, 2018-2019 (on a 0-1 scale)



This data can be read as showing a change ranging from +10% to -8% across sites. Additional data over time would be useful in order to tell if these changes should be considered large in magnitude or not.

4.3.3 Physician perceptions of overall improvement (FEMS-2)

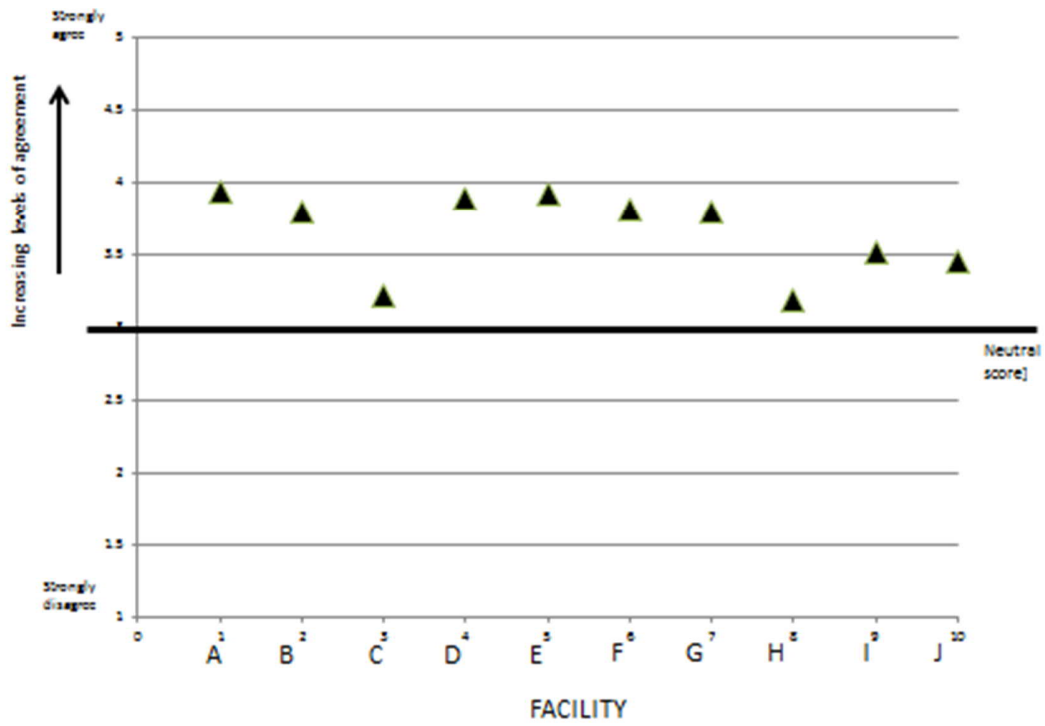
Data from 11 questions in the FEMS-2 survey can also be combined to provide a composite measure of perceived change over the course of the FEI. Each of these questions is answered on a 5-point scale, from "strongly disagree" to "strongly agree". Included in this composite measure are ratings of agreement that:

- trust and cooperation had improved,
- administration was more welcoming of physician engagement,
- physician administrator relations had improved,
- communication between physicians and the Health Authority were improved with respect to HA plans,

- communication between physicians and the Health Authority was improved with respect to physician proposals
- administration has become more active in providing support.
- the Physician Society had established a shared vision,
- physicians agreed what they meant when they spoke of engagement,
- the MSA was more effective in mobilizing plans,
- physicians felt that they had the needed skills and knowledge to improve engagement,
- the workplace had become healthier,

In Figure 9, we present the summary scores of the 11 items above for each case study site; the data suggest that, to varying degrees, all sites overall report 'agree' on a 5-point Likert-scale. These results suggest that physicians perceive both that their MSA/physician societies are increasing in capacity, and that health authority leaders are welcoming increased physician engagement.

Figure 9: FEMS-2 composite score for 10 case study sites*



*1=strongly disagree, 3 = neutral, 5=strongly agree; thus scores above 3 represent some degree of overall agreement that things are better since the beginning of the FEI

****

In summary, the results related to outcomes point to some modest changes in relation to the short-term outcomes identified in the FEI logic model. Communication and relations among physicians appear to be improving due to FEI activities, as do (to a perhaps lesser extent) relations among physicians and HA local site managers. Some new structures and processes for communication between physicians and administration have been built, and others revitalized, though this is not perceived by all to have happened to a satisfactory degree. The longer-term goal, increased physician engagement – as measured here by survey summary indices – shows a slight increase, though with only two points in a time-series the figures should be interpreted with great caution. It is likely that more variation is visible in the individual items which make up the summary scores used here to measure engagement; closer analysis of these may provide more information about areas of success and areas to which greater attention might be directed.

Given the ambitious task of this Initiative to change culture across multiple organizations of varying size and history, these results are what might reasonably be expected after only a three-year period.

5.0. Implementation

> Q. What SSC supports are being provided to facilities in Stage 2 and are facilities satisfied?
>
> Q. What strategies did facilities implement to increase physician engagement and strengthen communication between physicians and health authority management?
>
> Q. What were the facilitators and barriers to successfully implementing facility-based strategies to increase engagement of physicians?

These evaluation questions look at the activities which sites implemented to increase engagement, with consideration of the role of SSC supports. We addressed these questions with qualitative coding and assessment of SEAT data in case study sites, supplemented by interviews with FELs, and physicians and managers, as well as some FEMS-1 survey data.

5.1 SSC supports

FELs and FEMS are large categories in SSC central office FEI spending, thus we have focused on each of these supports in this section. (Financial details of SSC spending are more fully provided in Appendix E.)

Stage 1 involved intensive work, particularly by the FELs, in guiding sites through the incorporation and infrastructure development processes (as described more fully in the Interim Report). The key contribution of the FELs was a prominent theme in the qualitative interviews.

> "Yeah, our facilitator has been fantastic. Without question we would not have been able to negotiate the process as quickly as we have without her support and guidance. She's been – yeah, an invaluable resource. From the beginning, you know, helped us chair our first few meetings to sort of identify what our goals are, what our action items are, timelines and so forth*"* (MSA/physician society Executive Interview G1).

This perspective is supported by FEMS-1 data as well. When asked whether or not the FEL "played a vital role in helping achieve the funding agreement", 75% of respondents agreed, while 14% were neutral, and 11% disagreed (N=193).

The FEMS was a second significant component of support to sites. This electronic application was meant to deliver a: (1) payment system for physician sessional claims, (2) means of collecting evaluation data, and (3) budget allocation tool for MSAs/physician societies.

On the first point, while uptake was variable, by the end of the evaluation period it appeared that physicians who had registered for FEMS found it an easy and efficient way to make claims and receive payment. While the UBC team had anticipated FEMS would provide data relevant to the evaluation questions, the overall results of this were disappointing. Finally, the FEMS back-end applications proved to be somewhat problematic in operation, as indicated in both qualitative interviews and documentary materials. We note, however, that problems may already have been addressed through on-going adjustments to the system that do not show up in evaluation data.

FEI staff made on-going changes to the Stage 1 process in response to site feedback and evaluation results. Thus, many of the concerns identified in the Interim Report have been addressed, and the process which is experienced by more recent sites to join the FEI is much streamlined and more clearly defined than in its original form (which had often been described in terms such as 'building the airplane while flying'). Time trends in the FEMS-1 data may provide some quantitative evidence for this as well, with later enrollees more apt to agree that the site possessed the knowledge and skills needed to carry out its plans and projects[5].

As possible evidence of this, Table 7 compares the responses of the first 100 and last 100 FEMS enrollees to a question on site-level readiness. These are non-overlapping groups. It suggests that those who began their personal involvement after the FEI had been underway for a greater time felt that the sites were starting in a stronger position; this is what we would hope to see if the Stage 1 infrastructure development work was succeeding as intended by the program's logic model.

[5] Though it might reflect differences among the sites themselves

Table 7: Perception of early and late physician enrollees in FEMS as to the presence of needed skills and knowledge

At this facility, we have all of the skills and knowledge that we need to make the FEI a success.		
	Early respondents	Later respondents
Agree or strongly agree	50%	65%
Neutral	24%	25%
Disagree or strongly disagree	26%	10%

As the interim report noted, sites expressed considerable interest in sharing learnings and experiences among themselves. Such opportunities have increased since that time, and we are seeing the emergence of regional clusters in which sites that are geographically proximate meet in informal or formal ways to exchange ideas and sometimes to develop shared priorities for actions.

> "Bringing the sites together to work on something they all shared in common, yeah, I think that's been a bit of a new piece" (FEL, F2_1).

> "The initiative is evolving that we're trying to figure out how does this look regionally? How do we work regionally on the issues or priority areas that are not just defined to a certain hospital?" (FEL, F2_3)

> "Where I'm seeing the FEL support changes [in Stage 2] is now with a lot of my sites, it's kind of at that, 'what's next' point. So what are the great projects? What is everybody doing? And how do we start linking regionally to help support the sites not duplicate projects?" (FEL, F2_7)

5.2 Site level engagement strategies

The MoU allowed considerable latitude in how sites could access funds and initiate activities. In the early stages of the evaluation, the UBC team conducted a scoping review of the literature to investigate approaches that were reported to be effective in enhancing physician engagement with the health system. The review concluded that while the evidence-base as a whole was relatively scant, the recommended approaches could be summarized in 5 themes (Shaw et al, n.d.). Examples of how FEI facilities enacted these approaches are described under each theme heading below.

5.2.1 Approaches to improving engagement.

Theme 1. Systematically analyze the context using participatory methods.

> The most prominent examples of this type of systematic analysis in the FEI were the use of surveys. Within facilities, surveys were used by physician groups to gather information

in preparation for system improvements. An example includes an initiative to inform planning for more integrated maternity care. Alternative methods in this category included convening community meetings, which one smaller facility used "to solicit dialogue on the ideal type of rural maternity care". One case study site used participatory action research approaches to synthesize and agree upon suggested priorities for action.

Theme 2. Work collaboratively toward locally defined, shared targets and build in processes to monitor progress.

This theme is best reflected in FEI activities that aimed to unite the physician body through shared interests. Many of the activities using this approach were quality improvement activities with limited scope to increase engagement. An example of a more broadly engaging activity in this category is the push to increase physician wellness. The monitoring aspect in terms of measuring progress in these projects appears to be still developing.

Theme 3. Expand physicians' role and capacity to include leadership toward shared organizational goals.

This theme is well represented in educational and mentoring activities that aim at developing leadership skills and attitudes. For instance, sites could and did fund physicians to attend leadership development conferences, or ran their own leadership-focused courses and events.

Theme 4. Promote appropriate rewards and incentives for work that builds engagement.

In addition to the availability of physician compensation as a core component of the FEI, several facilities initiated non-financial rewards and recognition. For example, one physician society formalized peer acknowledgement as "recognition of physician leadership, quality improvement and dedication to improving the care of patients." Other sites incorporated recognition of new, and departing, colleagues into MSA AGMs or other events.

Theme 5. Invest in opportunities for formal and informal communication and interaction.

This theme is well represented in activities initiated under the FEI. Examples include networking events or the promotion of a welcoming physician lounge which attracts regular physician presence and opportunities to informally meet colleagues. An example that deliberately invites relationship building between health authority leadership and physicians is an initiative called "coffee one on ones" where motivated physicians are invited to schedule discussions over coffee with health authority leaders to get to know each other and share ideas.

5.2.2 Types of Institutional work

This evaluation also draws upon Cloutier et al's (2016) model of "institutional work". This model suggests that efforts to implement organization change, such as FEI's intervention to increase physician engagement, require four types of work: structural, conceptual, operational, and relational. In Cloutier et al's view, relational work "is an important enabler of all the other forms of work" (p. 18), though all types of work likely interact with one another and are mutually reinforcing over time. The types of work are defined in the box below.

Relational work: efforts to build connections, trust and collaboration within the medical profession and with health system managers
Conceptual work: efforts to establish and communicate ideas and beliefs consistent with intended changes
Structural work: efforts to establish formalized roles, rules and policies that support intended changes
Operational work: efforts to implement concrete initiatives and actions that advance or cement in place desired changes

We reviewed activities undertaken in the 10 case study sites (SEAT data as of February 7, 2019), and coded each as predominantly focused upon up to two types of work described above; these were additionally coded as to whether the primary focus was work among physicians, or work involving physician-administration collaboration. Thus, eight codes were possible, and some activities are intentionally counted twice. For example, informal breakfasts with leaders were arranged at one site to provide opportunities to build relationships and understanding between leaders and physicians. In addition to the relational aspect, a conceptual aspect is also apparent as the different participants learned more about each other's values and the different constraints on what may be possible. This activity was coded as both relational and conceptual. Each site was given the opportunity to review and validate this coding. Given the substantially similar pattern found across case study sites, we believe there is no reason to think that non-case study sites are likely to differ substantially from the patterns presented here.

The table below depicts the number of physician-focused and administration-focused activities at each case study site. Generally speaking, larger sites seemed to carry out a greater total number of discrete activities. (See Table 8; an expanded version of this table is provided in Appendix C.)

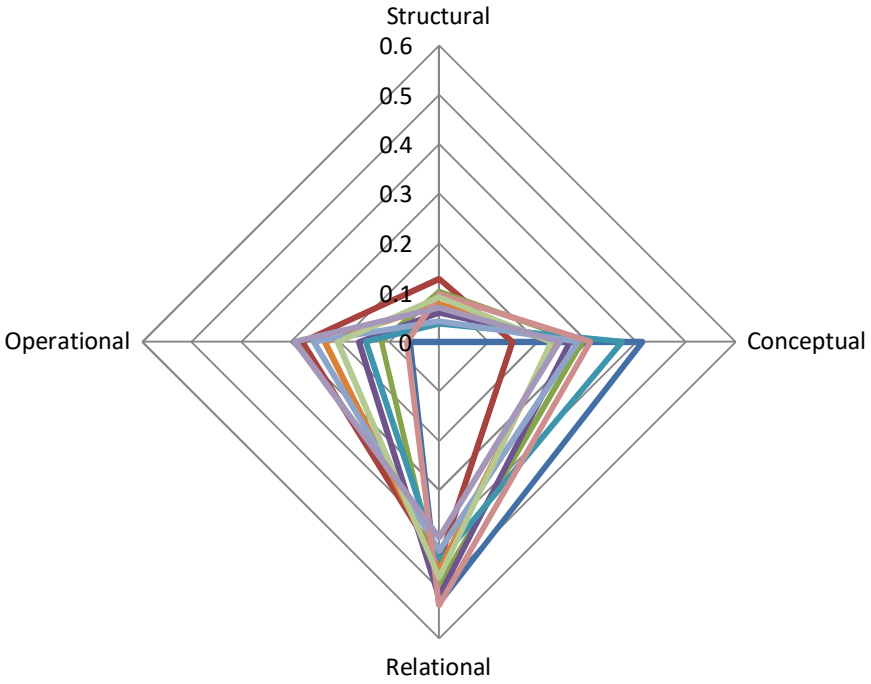
Table 8: Number of discrete activities, and coded focus, by case study site

	Case study sites (pseudonymously identified as A to J)									
	D	**G**	**H**	**B**	**E**	**F**	**I**	**A**	**C**	**J**
TIER	I	II	II	III	IV	V	V	VI	VI	VI
#Activities	11	9	30	19	26	43	44	41	58	38
Physician-Focused Activities*										
	7	10	29	14	29	40	48	40	70	41
HA-focused activities*										
	9	3	18	13	15	28	21	31	16	21
TOTAL Coded activities*	16	13	47	27	44	68	69	71	86	62

*Activities can be counted up to two times in this coding.

The greatest effort overall was devoted to relational work; using raw totals, we find that 47% of coded activities were focused upon relational work, 28% conceptual, 18% operational and 7% structural (again noting that some activities are intentionally counted twice). This pattern is for the most part consistent across all the case study sites. Figure 10 below shows, for each site, what proportion of activities address each type of institutional work; by calculating a percent of total activities, we adjust out the difference in total number of activities per site. That is, for each facility, the scores on the four types of work will add to a total of 1.0. The similarities in plot for each site indicate that comparable mixes of activities are being pursued in each case. Some differences in patterns of activity between sites emerge when disaggregating physician-focused from HA-inclusive activities, which may be worth exploring in more depth.

Figure 10: Patterns of institutional work at 10 case study sites (total aggregate percent)



This coding weights activities equally, whether they had a budget of $500 or $50,000. A different picture may (or may not) emerge if the activities are weighted by budget. This requires integrating information from SEAT with that in FEMS, which unfortunately could not be completed at this time due to inconsistencies in naming conventions across the two datasets.

It is important to note that sites themselves were not using this framework in planning their own activities; while some FEI materials did speak to this model, it is unlikely that all site-level physician or management participants were familiar with these categories or the theory behind them. Nonetheless, across these sites, we believe the identified activities can be usefully fit into the frame of institutional work as we have shown here.

5.3 Priority setting

A sub-study of priority setting in FEI sites was undertaken in summer 2018 (Bhutani, 2018). This study revealed that sites varied considerably in their rationale and criteria for selecting activities. Physician societies were found to use both formal and informal priority setting processes for deciding which activities they would undertake, with formal being defined as including the use of structured scoring criteria to assess proposals. Overall, 50% of 44 sites reviewed at that time had a priority setting process in place, and 2/3 of these were formalized in nature. The remaining 50% of sites were either in progress of developing processes or had no process upcoming or in place. There was more structure and formal process noted among sites in higher tiers (IV-VI) compared to lower tiers (I-III).

5.4 Qualitative factors predicting engagement and facilitators and barriers to success and sustainability

Here, we consider factors that might be associated with the extent of sites' successes in increasing physician engagement and physician-administration collaboration, which augur well for sustainability. To address these questions, we qualitatively identified common themes emerging from interviews with physicians, managers and FELs.

Five factors appear to be related to successful implementation and sustainability, including: (1) the role of project managers, (2) timing of physician/HA administration contacts, (3) depth of relations between physicians and HA administration, (4) connections, coordination and integration between FEI and other programs, and (5) succession planning. Table 9 provides sample quotes illustrating each of these themes.

Table 9: Five factors related to successful implementation and sustainability

Theme	Sample Quote(s)
Role of Project Managers	"I would definitely say they are a key ingredient and I think that that's really what makes some sites more successful than others. I think it's that combination of hands-on leadership by the physician group and a skilled project manager. I think it's when that's lacking or when both are lacking that I see sites really struggling to get this off the ground". (FEL, F2_1)
Timing of Physician/HA Contact	"We have some fundamental principles that we try to follow. And that is to involve the management of the hospital at the earliest possible moment that a – some sort of a project or initiative has been contemplated. So the operation management knows these things even when they're a twinkle in our eye if you like, so that there are no surprises." (MSA chair, G41)
	"We did meet with them early. … I think we met with them early and I think that is the correct thing to do. It's to work out as much as you can with the administration what our priorities are, rather than docs saying, these are our priorities. Both can have their -- so we can have one priority." (MSA chair, G18)
	"I'm not too sure if [physicians] understand the operational environment, the bureaucratic environment, that health authorities operate in, or management operates in. And I think it's just a matter of aligning the expectations after they get that information, or they understand, you know, what is the roadmap to do X, Y, or Z? …. And therefore, without understanding how to get resources, how to

	advocate, I think it creates frustration." (HA manager, C5)
	"Before this work really got underway … there was nothing that really pulled it cohesively together as a whole…. I think that has significantly improved by the Medical Staff Association being organized and seeing the bigger picture…what that gives us is a deeper appreciation on both sides, both administratively and on the medical staff of the exact numbers of things that are going on to improve things. And then make decisions on, well, actually we can't focus on 50 things. We need to focus on six." (HA manager, C27)
Depth of Physician/HA Relationship	"The last two years have been all about creating our [site] physician community so we can speak with a unified voice. We need to turn our attention to engaging with [site] leadership. Our physician voice needs to be at the table so that we can influence decisions that matter to us, our patients … there needs to be a shift in leadership decision-making [from doing to] to 'doing with'."
	"My take on the administrators here? They try, but they're very limited and they're micromanaged…. Our own hospital administrator …. she knows health care. But I'm sure she has frustration too because she has to – she battles the same big shapeless monster when it comes to trying to accomplish something". (MSA chair, G23)
Links between FEI and Other Programs	"The bulk of our members of our medical staff are family doctors. …. So we actually, right from the beginning, we started liaising with – particularly with divisions of family practice and particularly on one project, which was very successful." (MSA chair, G38)
	"Although a lot of family physicians are technically members of the medical staff association, they have been less interested in looking at facility engagement funding because, they tend to do that type of work through the division."(MSA chair, G37)
	"It's been a bit confusing to me, the way both the Divisions of Family Practice and the physicians' engagement group interact…. I think that there's, there's important work that can be done through these different bodies. But without clarification on how the different roles work, it's very difficult to, to actually utilize them." (HA manager, C9)
Succession Planning	"There's a real burnout component to all this, like there's only so many meetings you can go to and particularly when you're dealing with issues with the HA. … So, to hand over these things to other physicians to take on, is really important, and we've been trying to sort

	of look at succession planning, for the leads of these groups, also for the President of Medical Staff positions -- we need to find a way to create better succession." (physician, E2_5)
	"One of those things that, again, of course was so important was to hand…. over the reins to somebody else." (physician, E25)

Some further elaboration upon each of these five themes follows

5.4.1 Role of Project Manager

In the start-up phase, as noted above, FELs played a key role; in Stage 2, local Project Managers (as well as other forms of administrative support) appeared to be critical components of sites' ability to implement desired projects and activities.

Absence or gaps in this role presented challenges: "things got done, but I think we could have been way more effective if we had appointed a project manager early on" (MSA chair, G40). "One of the things that, in hindsight, would have been great, would be to have had a project manager person right from the get-go" (MSA chair, G15).

This was flagged by many as an important aspect to sustainability. It should be noted that some of the smaller and more remote sites face difficulties in finding suitable candidates with the skills needed to take on these roles – a reflection that size matters when it comes to how the FEI rolls out at sites across the province.

5.4.2 Timing of Physician-HA administration contacts

Several sites made substantial efforts to engage early with the local site-based Health Authority management. Benefits included increasing mutual understanding about the parameters within which physicians and management work (as fixed constraints, but also with some potential opportunities for change), educating physicians about HA business process, making them aware of operational budget impacts, and enabling better mutual alignment and prioritization.

That noted, other sites indicated that their preferred approach was to work initially among the physician members, to increase participation, build support, gain buy-in and reach consensus upon common preferred direction, before attempting to actively engage with management. It is unclear if this was based upon a diagnosis of site context and conditions, or a preferred philosophy held by physician leaders and/or FELs.

HAs largely began participating in the FEI late in the game, and many participants from the management side felt that their role was unclear and ill-defined at the outset. Managers suggested that their early involvement would have a number of benefits. For instance, they argued (and some physicians made the same point) that one of the challenges to implementing FEI activities was that many physicians did not understand the nature of how HAs operate and decisions are made.

The FEI affects and may require involvement from numerous clinical professionals and support staff, not just physicians, and this is essential if it is to contribute to system-wide changes. Specific proposed FEI activities sometimes would have impacts on other care providers, such as nursing or other staff and management is constrained in its ability to redeploy resources by such things as union contracts.

> "You have lots of other people involved – like ambulatory care is doctors and admin, but it's also nursing, and allied health, and it's the cleaners, and its security and, there's a lot of pieces that have to move. So, it becomes a little bit more bogged down" (physician, E23).

It was felt that early engagement would also increase the chances that physicians could be made aware of HA priorities and seek areas of alignment. This would be important in order to prioritize actions that could feasible be tackled.

However, participating in FEI-related work also placed some additional burdens upon managers; in several sites, for example, it was mentioned that managers now attended more meetings that were held outside of their office hours, either early in the morning or in the evening.

5.4.3 Depth of Relations between physicians and HA administration

Several sites noted that relationships had to move beyond communication, towards collaboration, in order to best achieve working group goals and to fit the spirit of the MoU. "This relationship was lacking in certain ways. We needed to move from a consultative relationship to a collaborative relationship" (MSA chair, G6). It is interesting to note how this language mirrors the IAP2 framework categories.

Health Authority managers at the individual sites were largely in agreement that they had the discretion to respond to physicians as they felt appropriate; HAs did not give detailed guidance or direction to site managers about how they ought to participate in the FEI. However, it was recognized that on many issues, site-based managers had limited ability to make decisions and so the physician voice needed to be heard in the higher-level HA boardrooms; many felt that the FEI had not (yet) made that kind of inroads:

> "We had hoped the FEI would allow us access to other higher senior members of [Health Authority] and that wasn't happening…. Most of us went into this working group or the executives misguidedly thinking, wow, great, now we're going to be able to talk to people at high levels of administration. And/or be invited to relevant committees at higher levels, okay? That hasn't happened." (MSA chair, G52).

5.4.4 Connections, coordination and integration between FEI and other programs

In several FEI sites, MSAs have explored ways to work with Divisions of Family Practice (DFPs) – as well as other initiatives emerging from Joint Clinical Committees, such as the

Physician Quality Improvement program. This seems particularly pronounced in smaller sites, where hospital medical staff may largely consist of family physicians who also are connected to their community's DFP and wear many hats, depending upon which meeting they are attending at any given time. This may have both positive and negative effects for FEI participation, which likely vary due to contextual factors.

SEAT data indicate that a number of sites have undertaken projects in which DFPs are explicit partners. As another example of possible linkage, in several sites, project managers also work part-time for the local DFP.

5.4.5 Succession Planning

Another link to sustainability for the future was identified as careful succession planning, addressed early on: "your executive might be new or they might be – have been there for three months – or three years already but let's get a formal plan together and then the idea of how we can pass this on to the next generation" (FEL, F2_2).

5.4.6 Barriers to Participation

The CMFES cycle II survey (2019) also included an open-ended question about barriers that kept respondents from participating in FEI-related activities. This provides insight about those who exhibit limited engagement. 121 participants responded. The primary theme identified in their comments was lack of faith that this initiative would make a difference (35 responses): for instance, "Committees I've been involved with in the past seem to have little impact on the overall management of the hospital/clinic/organization- seems like a waste of time". A second theme was lack of time (32 responses). Sixteen respondents reported that the scheduling of meetings and events did not suit them and 15 reported dissatisfaction with "inadequate remuneration."

5.5 Quantitative factors predicting engagement

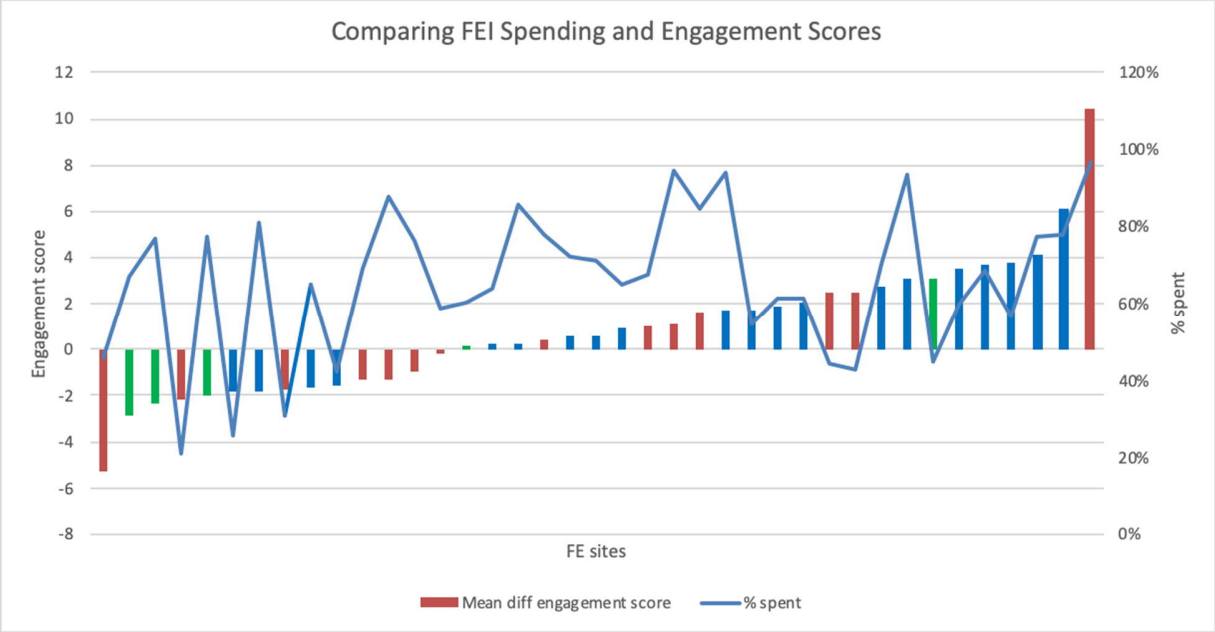
Factors such as baseline level of MSA activity, facility size, physician age, practice type, payment type, practice setting and rate of spend could play an important role in predicting physician engagement. We conducted preliminary work to test the feasibility of using statistical regression model(s) to assess the degree to which increased engagement (operationalized as changes in aggregate Worklife Pulse survey scores) is explained by site-level variables. We recommend that this approach be used to evaluate long-term outcomes. Briefly, in our initial analysis, after accounting for the variance between facilities and adjusting for the other variables in the model, there was not a significant difference in summary engagement scores. However, we are encouraged because the differences that were seen were in the desired direction.

One possible factor that might predict engagement is the extent to which sites spent the money they received through the FEI. In looking at this data, however, it does not appear that the proportion of funds expended is directly related to the achievement of increased engagement as

measured in this fashion. See Figure 11. In this graph, FEI sites (n=39) are arrayed on the horizontal axis. For each site, the change in FEI engagement score between 2017 and 2018 is represented by a bar; this change can be negative or positive; greater positive change is seen as one moves right. The line shows the proportion of each site's funding expended, as of December 2018. If the rate of spend predicted changes in engagement, we would expect both these to rise roughly in parallel; clearly, they do not.

This is not necessarily problematic, as there is no clear reason to expect it would be so; note for instance that a number of sites explicitly emphasized 'quick wins', or changes that could be seen quickly and would not necessarily demand significant spend to accomplish.

Figure 11: FEI spending (% of allocation) and change in Worklife Pulse overall score (2017-18), by site



A similar (lack of) pattern is seen when comparing level of spending against a self-reported measure of progress towards the goal of increased physician engagement (FEMS data); see Appendix F for details. This confirms that FEI results appear to be largely independent of the pace at which sites expend their funds.

6.0. Limitations

We note in this section some limitations to the evaluation which should be considered in the interpretation of results:

- Most importantly, the evaluation cannot attribute a cause-effect relationship between the FEI and any changes in engagement, due to the possible presence of confounding contextual factors, such as other provincial or regional programs which had intended or incidental effects upon physician engagement.

- The key outcome, physician engagement, has proven difficult to operationalize and measure in a robust fashion. There is no widely agreed upon definition in the literature. Our quantitative measures derived from the Worklife Pulse and CMFES surveys may also reflect changes that are unrelated to the FEI. It should also be noted that qualitative claims regarding changes in engagement likely reflect different understandings among informants as to what the concept means.
- The quality of available data is variable; in particular, FEMS and SEAT data is typically entered by project managers at individual sites, and the data entered have been inconsistent. Procedures are needed to ensure that the same types of activities are comprehensively included and similarly described across sites.
- While the evaluation made deliberate efforts to expand data collection among HA managers, a disproportionate amount of data derives from physician respondents, thus the views of other stakeholders may be somewhat underrepresented. Importantly, it is unclear whether or not HA respondents would define success in the same way as do physician participants.
- Very little information is available about non-participating sites, and non-participating individuals within sites. Thus, findings may over-weight the views of those who have most favourable views about the initiative, and may have failed to identify some important factors that could be related to success, or lack thereof.

7.0. Conclusions

The FEI is an ambitious, province-wide effort to increase physician engagement in health system decisions at the facility level – to our knowledge a unique and unprecedented approach. In accordance with the MOU: (1) the SSC developed payment and financial support mechanisms to enable facility-based physicians to participate in engagement processes, (2) funding was provided to support facility-based physicians in implementing engagement focused projects, and (3) many HAs engaged with medical staff on regional and local issues. There has been widespread participation by facilities in the FEI and the infrastructure is in place for its continuation.

In this initial iteration (2015-2019), the FEI accounted for approximately a $60M spend; total Stage 2 spending was $39.8 million, of which 22% ($8.9 million) was used by the SSC's central FEI office to establish and maintain the infrastructure for FEI. Sessional payments for physician time constitute a major component of the FEI spend, and appear to enable physician involvement, and move things forward by providing compensation for time spent on the FEI, though in many ways the value of payment is as symbolic recognition. Because this occurs within the context of a largely FFS model of physician remuneration, there may be some substitution effect, which involves physicians being paid for work they would formerly have

undertaken voluntarily; it is not feasible with the data available to quantify the extent to which the process has generated 'new' time or 'better' work.

Many fully-funded sites had unexpended funds at the end of the evaluation period; that is, they had not spent all of the annual funding approved for them by the SSC. This is due in part to the necessary and perhaps unexpected lengthy process in Stage 1 of building the foundations necessary for success. Capacity limitations at the SSC central office (e.g., fully staffing the FEL team) also meant that some sites had not completed Stage 1 by the end of the evaluation period.

FEI administrative processes have evolved and become more straightforward and well-defined. Though facility participants expressed frustration regarding changes in funding processes that occurred over time, they also largely understood and accepted that things were unlikely to be otherwise given that this was a new initiative.

FELs were essential in Stage 1 and represent a valued expenditure. They continue to be highly valued in Stage 2. They are a key component of the intervention approach. The recruitment of a skilled project manager and local administrative support at the facility site level also appear to be a critical element to success.

Based on both qualitative and quantitative data, there is evidence that in three years the FEI achieved encouraging results in achieving short term outcomes by: 1) increasing communication amongst physicians and medical staff, 2) increasing communication and strengthening relationships between physicians and HA administrators, and (3) putting into place some processes and structures to improve communication and information exchange between physicians and HA operational leaders. There is also qualitative evidence that some facilities perceived changes in engagement.

Good work is being done and positive outcomes have been achieved by many of the sites' individual projects and activities, some of which appear to increasing engagement. These early outcomes are important markers of progress toward physician engagement. However, whether "physician engagement" has increased remains an unanswered question. Analysis of provincial-level data from the Worklife Pulse surveys suggests there is a positive trend in engagement level, however the increase is modest and is not statistically significant. This result is not surprising and is in keeping with current theory and research in organizational culture change and physician engagement. We anticipate that in accordance with the logic model and what is known about physician engagement there will be continue to be observable increases in engagement over time. Elements of operational work and structural work (such as accountability, formalization) may have to be developed more upfront in the next iteration of the FEI in order to get a more positive relationship between spending and outcomes.

In Stage 2, sites largely devoted their efforts toward activities which could be characterized as relational work with less effort directed towards activities that focused on conceptual, structural and operational forms of work. This was the case for both physician-centric activities and those

in which connections with the HA management had a primary place. This is a reasonable approach and common at the beginning of an engagement initiative. However, in order to achieve significant progress and sustain gains towards changing organizational culture there must be a balance between conceptual, structural and operational forms of work. Evaluation results suggest that conceptual work in particular was lacking and should be emphasized. We noted that many QI projects were funded through the FEI initiative. Those projects that were used as a vehicle for engagement and conceptually linked to a broad vision of engagement for the facility are more likely to result in organizational change related to physician engagement.

We conducted a rapid review of the literature to identify effective approaches to increasing physician engagement (Shaw et al, n.d.). Based on that review, we concluded that the recommended approaches could be summarized in five themes that range from analyzing the context using systematic and participatory local analyses to using appropriate rewards and incentives. Implementation and observational data suggest that all five approaches are represented to differing degrees at different sites and are reflected in the supports provided by the SSC.

Qualitative data suggests that facilities operate differently based on their size. For example, in small sites physicians (and administrators) are likely to already know one another well, making the nature of relationship building quite different in comparison to large sites where many physicians may well never have met many of their medical or administration colleagues. As another example, in smaller sites many of the physicians who comprise the medical staff are family doctors who may also be members of their Division of Family Practice. In many cases the same people are involved in multiple initiatives with discrete pools of funding, different aims and reporting requirements which can be unnecessarily burdensome but may also present synergies across projects.

In sum, the FEI may be seen to date as a 'readiness for change' intervention, where its results have helped increase (in likelihood) the receptivity of Health Authorities and hospitals for further change. Based on these findings and in consideration of the literature on engagement, we make the following additional observations about success and potential areas for improvement:

- The fact that the FEI supported local sites in interpreting "engagement" according to their local needs and context has been highly valued ("one size doesn't fit all"). However, this approach later resulted in tensions and challenges when the SSC made efforts to clarify what was eligible for funding, and to direct sites towards activities that reflected the intent of the MoU. This process might be eased by collaboratively developing a core set of basic principles that define "engagement", using caution about developing any hard-and-fast rules about what can or cannot be supported.
- Some interest has been registered in using the IAP2 framework as a way of guiding discussions and directing efforts. This framework has been widely used and seems to be found helpful, though "there is minimal empirical evidence to support the use of

[this model and others like it] in implementation" (Norris et al, 2017). A program plan including "how" and "why" it is expected to work along with guiding principles for facilities needs to be established. This will help to clarify assumptions, expectations, enhance the chances of success, and ensure that the approach is generalizable.

- There has been a strong interest by FEI physician and administration participants in sharing best practices and lessons learned from the inception of FEI. In the last year of the evaluation in particular, we noted the emergence of some efforts at connections among geographically adjacent facilities, and Doctors of BC though the FELs are putting increased effort into facilitating these linkages.
- Overall, it appears that physician participants were supportive of the program and what it aims to accomplish. HA administrators at the site level also appeared to be supportive, though there were a greater number of negative assessments offered among this group of respondents. It should also be noted that while the FEI is designed for ground level work at the facility-level, many of the important decisions – and many of the places where physician engagement is most desired – are more influenced by senior levels of HA management.

8.0. Recommendations

In light of the results of this evaluation, it is recommended that stakeholders consider the following key questions going forward.

1. Is the FEI "good value" for money? Is the general approach the best use of the resources earmarked for increasing physician engagement? Some progress towards the short-term logic model goals of increasing physician engagement has been achieved, primarily in building physician-physician relations. Do those gains merit the opportunity cost? Are there other, more cost-effective, approaches for potentially increasing physician engagement to which these funds might be applied?
2. Are all stakeholders in agreement that the current allocation of resources earmarked for increasing physician engagement represent the most feasible and strategic approach? Are there other (or additional) intervention components that should be considered? Almost one-half of site funding was used for physician sessional payments. The remaining amount covered site operating and project expenses. We know that:
    a. Physicians and managers generally agree the payments enabled greater engagement, there may be some substitution effects (replacing time formerly volunteered), and sessional payments do not fully compensate physicians for time away from clinical practice.
    b. Support from FELs appears to be a key component of the approach.

c. A skilled manager and local administrative support at facility sites seems to be critical.
d. Sites largely devoted their efforts toward relational work with less effort directed towards activities that focused on conceptual, structural and operational work. Yet we know that in order to achieve progress and sustain gains related to organizational culture there must be a balance between conceptual, structural and operational forms of work.

The evaluation findings suggest that, taken as a whole, the multiple components of the FEI, have had some positive effect. It cannot be concluded, however, that the intervention components are the best possible approach.

3. As the FEI continues, attention needs to be paid to the integrity of the intervention – a greater shared understanding of what engagement means and what activities best contribute to this. There may be gains to be had from low cost 'quick wins', and stakeholders should consider what time frames are realistic for desired changes, and how much money is needed to achieve these.

Additional recommendations are divided here by target audience.

8.1 Ministry of Health

- Evidence from this evaluation suggests that the FEI is associated with changes that will lead to greater engagement by physicians and this appears to be facilitated by physician remuneration. It is reasonable to explore ways to continue and improve the initiative. As the ultimate funder, how the overall spend brings about change should be monitored and re-assessed at periodic appropriate intervals.
- Several topics appear repeatedly among those addressed by sites during the FEI's run to date (e.g., wellness, leadership, physical environments that support interaction). The MOH could take a leadership role in discussions around whether there is value in elevating these to the level of a province-wide strategic response which would address them in a systematic way across all Health Authorities.

8.2 Health Authorities

- Intentionally reach out to MSAs about their plans and mandate, and identify opportunities for meaningful physician input and collaboration.
- Continue to work with sites in innovative ways, especially in regional clusters, to enable engagement at more senior levels of management, and to create processes here for hearing and responding to physician concerns. These may be different than the processes used for increasing site-level physician engagement, which so far have been the main focus of FEI efforts.
- Work with MSAs to identify areas for improving physician representation in, and input into, HA structures (e.g., clinical governance).

8.3 MSAs/physician societies

- Attention to leadership development and succession planning is well warranted.
- Sites should move beyond the largely relational work which has been carried out to date, to spend more time in conceptual work, in operational work to test approaches which might align well with the emerging vision generated by conceptual work, as well as in making "improvements in structures and processes for communication and information exchange between physicians and HA operational leaders" as specified in the logic model. And while conceptual work can be addressed locally, it may also need to be addressed collectively, for instance through better specification of desirable changes and outcomes, perhaps included in the MOU.
- Evidence at this stage suggests that facility level of spending is not related to achievement of facility level outcomes; this suggests that sites may want to focus upon quality rather than quantity of their activities.

8.4 Specialist Services Committee

- Ongoing operational support for MSAs/physician societies is required in order for these groups to succeed; they provide dedicated time by people with skills in which physicians aren't typically trained.
- The emergent and increased understanding of what engagement means in this context should be used to further articulate the intervention approach, and more clearly define what is fundable and what should be prioritized. The existing logic model appears to be physician-centric and lacks clear conceptualization of what success might mean to other FEI stakeholders; therefore, it seems timely to revisit the logic model, explicitly including HAs in this process.
- Assess changes in outcomes over time in relation to specific activities that were undertaken at the site level and compare these in relation to outcomes and cost.
- Cross-site sharing should be encouraged and further enhanced.
- Explore possibilities to coordinate and/or integrate various initiatives which have separate pools of funding available (e.g., FEI, Divisions of Family Practice, Physician Quality Improvement, etc.).

8.5 Evaluators

- An internal evaluation led by the SSC focusing on process should be conducted, while an external outcomes and economic evaluation would best be carried out by an external third party.
- Establish a formal advisory evaluation committee with representation from MSAs, health authorities with support from the FE team and the external evaluator.
- Review methods and data sources to identify the methods that are most credible and feasible and should be continued.

- Measure engagement on a regular basis through use of the short form survey and the Doctors of BC Worklife Pulse survey.
- The next round of evaluation should be clearly oriented around the intended medium-term outcomes which have been identified in the program logic.

9.0. References

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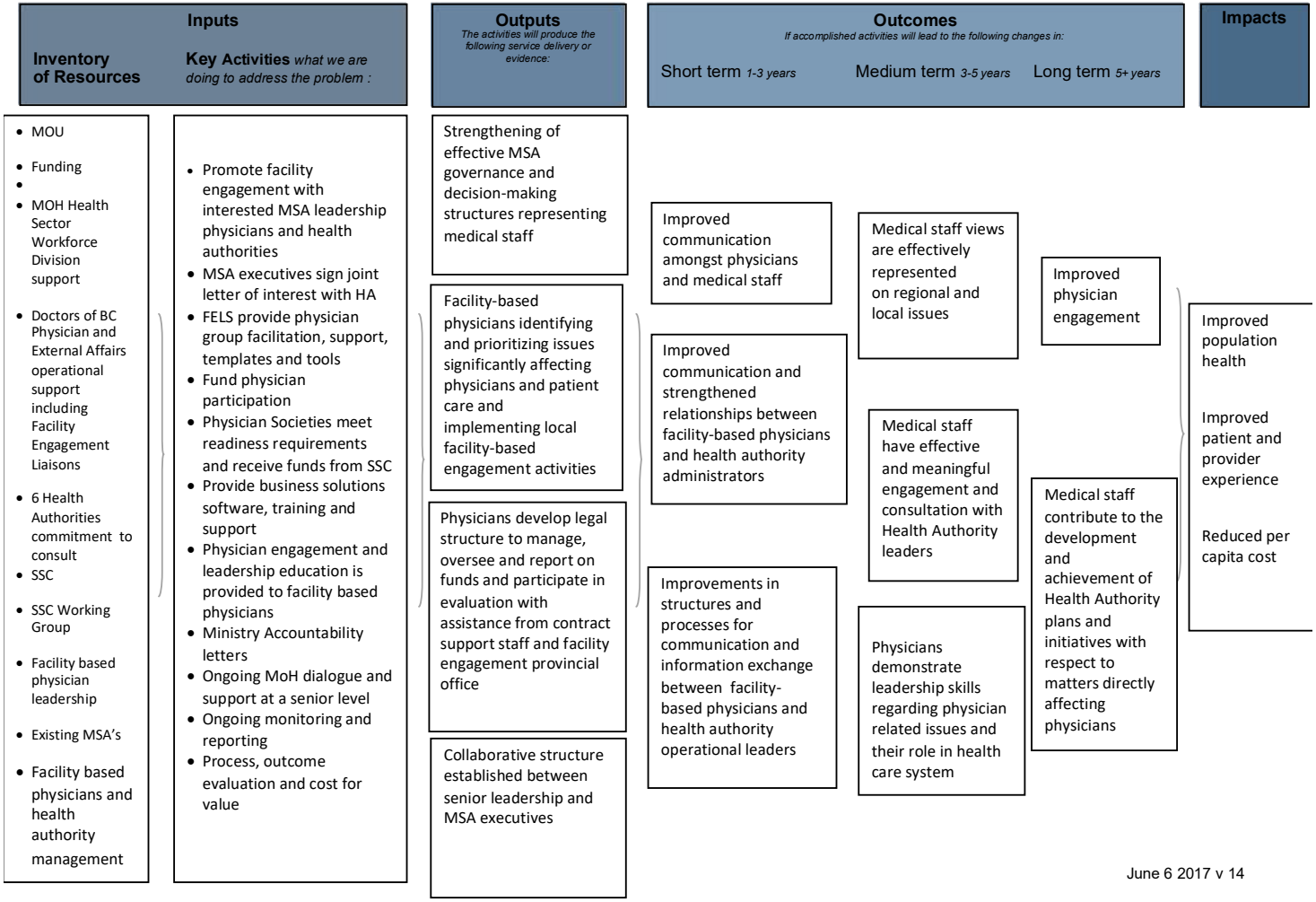
10.0. Appendices

A. Logic Model
B. Evaluation Questions
C. Qualitative and quantitative data sources
D. Comparative summary table of case study sites
E. Doctors of BC central office funding details
F. Full descriptive results of FEMS-2 survey

Appendix A: FEI Logic Model

Facility Engagement Initiative: A Living Logic Model



Appendix B: Full Version of Evaluation Questions

Note: the questions below were those developed by the evaluation team, in consultation with the SSC, Doctors and BC and an Evaluation Advisory Committee, at the being of the evaluation. Given that the FEI is an initiative in evolution over this period, some of these questions became redundant, irrelevant, or inappropriate over time. The questions reported in the main text reflect the evaluators' best judgment as to how to assess the FEI processes and outcomes at the close of the evaluation period; the full text of these questions is included in order to show the context.

Evaluation Questions for Stage 1:

Q1: What proportion of MSAs reached the stage of incorporation and SSC sign-off on fund transfer agreement? [i.e., the intended endpoint of Stage 1]

Q2a: What did they do to get there? Description of internal processes used by MSAs and by Health Authorities to build support and prepare for participation in FEI (including different patterns visible when aggregating across sites)

Q2: What did they do to get there? Description of external supports provided by Doctors of BC (including different patterns visible when aggregating across sites)

Q3: What worked well and what didn't, under what conditions?

- Assessment of internal actions and external supports (e.g., How effective were supports provided by Doctors of BC in facilitating the infrastructure development process? To what degree were sites satisfied with these supports?)
- Identification of facilitators and barriers for individual sites in moving from interest to incorporation

Q4: What did it cost to get there?

Q5: Where did they start from?

- Describe the provincial and regional context which led the partners (Doctors of BC, MOH, Health Authorities) to conclude that physician engagement at hospital sites was a problem, and why the FEI was perceived to be an appropriate response.
- Describe the baseline situation in regard to physician engagement and satisfaction in participating sites and note any potentially meaningful patterns of variation across sites.

Evaluation Questions for Stage 2:

Q6: What proportion of funded sites was able to successfully complete Stage Two, i.e., to…

- identify options for engagement strategies
- prioritize these
- and implement the chosen ones to completion?

Q7a: What strategies were chosen to be implemented at each site, and why?

Q7b: What was not chosen to be implemented, and why?

Q8: Are there identifiable patterns to the mix of strategies used by local sites? Are there identifiable factors which affect the types of strategies and activities considered to be locally needed and appropriate?

Q9a: How were strategies implemented in practice? Process description; i.e., what was done?

Q9b: How were strategies implemented in practice? Fidelity; i.e., to what degree were the original plans carried out as intended?

Q9c: How were strategies implemented in practice? Were strategies implemented in a way consistent with the principles underlying the FEI?

Q9d: How were strategies implemented in practice? Q9d: Coherence with literature: i.e., to what extent have sites chosen and implemented actions that accord with the literature on what leads to successfully increased physician engagement?

Q10: To what extent have each of the partners [i.e., Doctors of BC, Health Authorities, BC Ministry of Health] been able to carry out the obligations to which they committed themselves under the Memorandum of Understanding?

Q11: From the perspective of all key stakeholders, what worked well and what didn't, under what conditions? What are the facilitators and barriers to successful implementation of strategies to increase the engagement of facility-based physicians in BC?

Q11a: What are the pivotal moments which enable achievement of identifiable change in physician engagement? How are these moments brought about?

Q12a: How do different sites prioritize the different outcomes identified in the Logic Model in their own contexts?

Q12b: To what extent are intended outcomes (as identified in the Logic Model and in individual strategy goals/objectives) achieved?

- Increased participation by physicians in facility decision making that impacts their work?
- Increased trust?
- Increased ownership?
- Increased communication among facility-based physicians?
- Increased cohesiveness and unity among medical staff?
- Increased communication between physicians and administrators?
- Better relationships between physicians and administrators?
- Changes in working environment?
- Changes in patient care practices?
- Increased physician satisfaction?
- [Allow for inclusion of any unique project-specific objectives]

Q12c: Do lessons from the implementation of the FEIP suggest or lead to changes in the Logic Model?

Q12d: In addition to intended outcomes, what unintended outcomes are observed within the FEIP as a whole?

Q13: What are the prospects for sustainability of the achievements?

Q14: What did it cost?

Appendix C: Methods

Qualitative methods provide information in textual format, which we analyze so as to identify prominent common themes. They are suited to obtaining knowledge about how Initiative participants understand the work in which they are involved. While multiple interviews in the case study sites provide a range of perspectives, for other sites our information is most often limited to the perspective of a single respondent, who may or may not share the views of others at that site.

Table C1: Qualitative Methods used in the Evaluation

	Number	Date collected	Major topics addressed	Reach
MSA Presidents (or designate) (Guide G) *Also includes hired project staff	53 interviews (61 participants)	June 2017-February 2019	Perceived state of relations between physicians and administrators, pre-FEI; experience with stage 1 startup and SSC supports	Provincial
Other Physicians/Health Providers (Guide E)	30 interviews (32 participants); 2 focus groups	December 2017-March 2018; February-March 2019	Definition of engagement; activities undertaken and impact; experience with stage 1 startup and SSC supports	Case Study
HA managers and staff (Guide C)	48 interviews (54 participants)	January-March 2018; February-March 2019	Perceived state of relations between physicians and administrators, pre-FEI; barriers to physician engagement; HA role in supporting the FEI at the site	Provincial Case Study
HA Senior Level contacts (Guide D)	8 interviews	August-October 2018	Regional-level perspective on FEI across sites within HAs	Provincial

FELs (Guide F)	16 interviews	Fall 2016; March 2018; March 2019	Skills; 'value add' of facilitation; easy and hard parts of process for sites; cross-site sharing of learning	Provincial
Observation	Approx. 25 events	Summer 2017-February 2019	Understanding: how site-level processes operate; relationships in practice, organizational efficiency, clarity, openness	Case Study

Quantitative methods provide numeric data, typically from a relatively large number of respondents. Surveys were primarily distributed on-line, though in some case hard copy replies were returned. Response rates across each instrument tend to lie in the 20-25% range (though a denominator cannot always be calculated), which is not atypical of this form of data collection. Note that it is quite possible for a single respondent to have provided data to more than one of these collections. Data are analyzed using descriptive and analytical statistics. Some of these instruments included open-ended items, which were analyzed using qualitative techniques as described above.

Table C2: Quantitative methods used in the evaluation

	# of responses	**Response Rate**	**Date collected**	**Major topics addressed**	
Canadian Medical Facility Engagement Survey (CMFES) Cycle I Cycle II	469 335		January-May 2018 January-March 2019	Physician and manager perceptions of engagement; relative influence of different groups in decision making	Case Study (MSA members, and site-based health authority managers)

Worklife Pulse Survey 2016 2017 2018	 2485 2998 2657	 19% 26%	 February 2016 Summer 2018 Summer 2018	9 questions which measure physician satisfaction and perception of worklife extracted from annual Doctors of BC membership survey	Provincial (Only members of Doctors of BC—estimated to be about 90% of all licensed physicians in the province; includes GPs and Specialists)
FEMS link-out survey 1	474		August 2017-February 2019	Historic state of physician-management relationships; experience with Stage 1 start up and supports	Provincial (all physicians registered with FEMS. Note that not all sites use FEMS.)
HA manager survey	36		December 2017-March 2018	Relative influence of different groups in decision making; historic state of physician-management relationships; experience with Stage 1 start up and supports	Provincial (Site-based HA managers at facilities where the FEI was fully-funded at the time of the survey)
FEMS link-out survey 2	901	24%	February 2019	Reports of perceived changes attributed by participants to the FEI	Provincial (All physicians registered with FEMS. Note that not all sites use FEMS.)
SEAT data	1186	n/a	Developed in July	Activity descriptions and	Case Study

	(Activities) representing 57 sites		2017 first entries Jan 2018 reporting on activity back to 2016	milestones as reported by sites	[while available province-side, only case study data used in the evaluation]

Appendix D: Case Study Sites

There are 2 case study sites in each of the VCH, Fraser, Interior and Northern regions, and one each from Island Health and PHSA.

Table D1: Description of case study sites

Site	Tier	MSA baseline level of activity	% of allocation spent as of Dec 31, 2018	MSA size	No of physicians making FEMS claims	FEMS-2 survey composite score* (points above neutral; higher = better)
A	VI	None	72	n/a	69	+10.3
B	III	None	38	n/a	56	+8.8
C	VI	Low	64	830	43	+2.4
D	I	High	97	19	15	+9.7
E	IV	Medium	86	155	35	+9.0
F	V	Medium	56	149	39	+8.8
G	II	Low	30	54	19	+2.0
H	II	None	78	n/a	30	+10.2
I	V	High	95	250	74	+5.6
J	VI	Medium	78	1500	196	+4.9

*Based on a scale where 11=strongly agree with all items, and 55= strongly disagree with all items. 33=neutral. This measure is based on points by which each site exceeds 33… higher totals = greater agreement on the index measure.

Tables D2 and D3 provide information for each site on summary measures of engagement scores, as operationalized using the 9 questions of the Worklife Pulse survey (Table D2) and nine items from the Canadian Medical Facility Engagement Survey (Table D3). We report raw scale scores, and for each, we also rescaled the data from 0-1, where 0 would represent a situation in which all respondents strongly disagreed with all items, and 1 represent a situation where all respondents strongly agreed with all items. The rescaled scores can be read then as percentages.

Table D2: Mean engagement scores, Worklife Pulse, 2017-2018

Case study Facilities	2017 mean engagement score*	Rescaled (0-1)	2018 mean engagement score*	Rescaled (0-1)	Mean difference	Mean difference (Rescaled, 0-1)	Comments: changes on WP items from 2016-2018
A	26.12	0.48	26.67	0.49	0.55	0.02	This site had somewhat higher scores than the HA average in both the 2016 and 2017 surveys. Responses in 2018 were largely comparable to those of the previous year.
B	28.22	0.53	24.74	0.44	- 3.48	-0.10	This site had somewhat lower 'agree' scores than its HA average in the 2016 survey; in 2017 these shifted to somewhat higher scores, with the exception of the item on access to resources and equipment. While this improved in 2018, responses on many of the questions shifted towards greater disagreement with 5 of the 9 items having the 'disagree' percentage increase by more than 20 points.
C	26.14	0.48	26.34	0.48	0.20	0.01	This site had scores comparable to its HA average in 2016, while several items improved in 2017 to %agree responses

							above the HA average. Responses across all 3 years appear largely stable.
D	15.77	0.19	26.2	0.48	10.43	0.29	In 2017, site scores in %agree were below the HA average. Most scores shifted towards a greater positive response in 2018, with the exception of Q8, transparency of decision-making.
E	27.67	0.52	33.8	0.69	6.13	0.17	This site had somewhat lower scores than the HA average in the 2016 survey, but somewhat higher ones in 2017. Proportion of agree responses generally rose in 2017, then declined somewhat in 2018.
F	23.61	0.41	23.83	0.41	0.22	0.01	This site had somewhat lower 'agree' scores than the HA average in the 2016 survey, shifting to somewhat more positive responses overall in 2017. 2018 responses shifted even further towards greater agreement with 7 of the 9 items (percentage increases ranging from 6% to 23%); the first two items saw a shift toward neutral.
G	26.08	0.47	29.83	0.58	3.75	0.10	n/a
H	No data		No data		No data		Some of the items (e.g., Q1, Q2 and Q9) show a large shift towards agree responses between 2017 and 2018, others show more stability or with a shift upward to the neutral category. In 2017, local responses tend to be less positive than those for the Health Region as a

							whole.
I	27.39	0.51	28.45	0.54	1.06	0.03	Across 2016 and 2017, site scores (%agree) were relatively close to its HA average. Some of the items here have been relatively stable across all three years of the survey. Items 6 and 7 saw a fairly large decline in approval from 2017 to 2018.
J	24.9	0.44	25.33	0.45	0.43	0.01	This site had somewhat higher 'agree' scores than its HA average in the 2016 survey, while in the 2017 survey most of the scores were fairly close to the regional average. Across all three years, scores were fairly stable, with some decline noted for Qs6-8, which relate to views of the senior leadership.

*on a scale from minimum of 9 to maximum of 45

Table D3: Mean engagement scores, CMFES, 2017-2018

Case study Facilities	CMFES 2018* (Raw score)	Rescaled (0-1)	CMFES 2019* (Raw score)	Rescaled (0-1)	Mean difference CMFES	Mean Difference- - Rescaled (0-1)
A	No data		No data			
B	No data		No data			
C	No Data		No Data			
D	43.44	0.64	48.08	0.72	4.64 t = -2.1179, df = 26, p-value =	0.09

					0.04391	
E	44.83	0.66	50.35	0.77	5.52 t = -2.4514, df = 47.683, p-value = 0.01795	0.10
F	48.23	0.73	44.15	0.65	-4.08	-0.08
G	47.97	0.72	50.00	0.76	2.03	0.04
H	41.6	0.60	37.8	0.53	-3.8	-0.07
I	41.20	0.60	43.48	0.64	2.28	0.04
J	39.55	0.57	39.69	0.57	0.14	0.00

*On a scale with a minimum of 9 and a maximum of 63

Table D4 depicts the distribution of activities coded to the different types of institutional work; it is an expanded version of the table provided in the main text.

Table D4: Types of Work, coded by case study site [Expanded]

	D	**G**	**H**	**B**	**E**	**F**	**I**	**A**	**C**	**J**
TIER	I	II	II	III	IV	V	V	VI	VI	VI
#Activities	11	9	30	19	26	43	44	41	58	38
Physician-Focused										
Structural	0	1	5	0	3	0	6	1	5	0
Conceptual	3	3	2	5	7	13	14	13	18	12
Operational	1	3	12	2	9	8	7	13	24	4
Relational	3	3	10	7	10	19	21	13	23	25
SUB-	7	10	29	14	29	40	48	40	70	41

TOTAL										
HA-focused										
Structural	0	0	1	1	1	4	1	2	1	6
Conceptual	4	0	5	5	3	5	6	7	3	7
Operational	0	0	1	2	0	3	1	5	1	0
Relational	5	3	11	5	11	16	13	17	11	8
SUB-TOTAL	9	3	18	13	15	28	21	31	16	21
TOTAL Coded activities*	**16**	**13**	**47**	**27**	**44**	**68**	**69**	**71**	**86**	**62**

*Activities can be counted up to two times in this coding.

Appendix E: Special Services Committee central office spending

The SSC has played a pivotal role in supporting the FEI initiative with an estimated cost of $8,916,805. Of this total, the bulk rest in two categories: $6,271,453 (70%) was spent on internal administration, and $1,626,786 (18%) on the information technology (IT) business solution project, i.e., FEMS (Table E1).

Table E1: FEI support-related costs incurred by the SSC

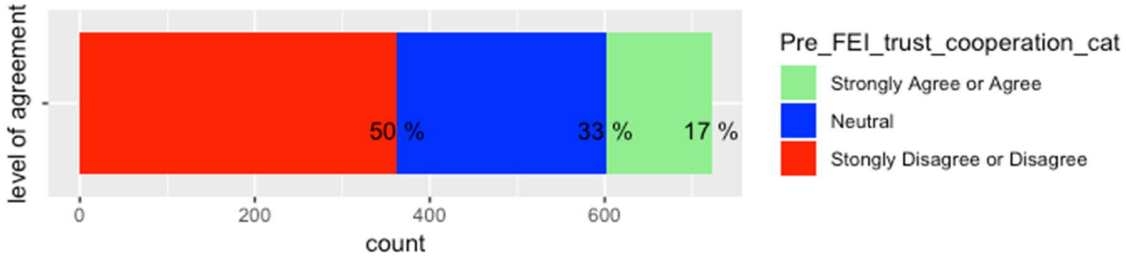
Budget 2014 - 2019, in CAD$	Spending	% Spending
Administration	$6,271,453	70.3%
IT business solution project	$1,626,786	18.2%
Evaluation	$404,412	4.5%
Regional engagement	$156,560	1.8%
Education training of physician and health authority leaders	$153,088	1.7%
Knowledge sharing	$111,117	1.2%
SSC PQI Supports to MSA's	$91,661	1.0%
FE working group	$69,666	0.8%
Facility engagement service company	$32,062	0.4%
Total	**$8,916,805**	**100%**

Appendix F: Additional results from the final FEMS survey (FEMS_2)

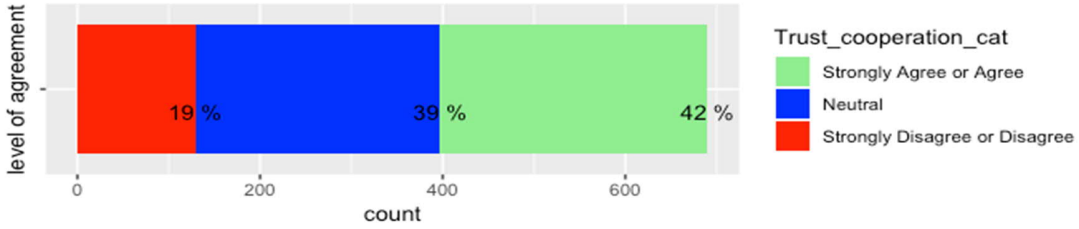
In a final survey invitation to all FEMS users (n = 3750), respondents were asked to compare the current situation at their facility to the situation prior to the FEI. There were 900 total responses for a response rate of 24%. The following descriptive analysis reports on 690 responses without errors or missing values. All questions are based on a five-point scale, where 1=strongly agree and 5= strongly disagree; responses have been collapsed into three categories for reporting here: agree, neutral and disagree.

Matched Questions: Four questions were asked at first registration with FEMS (FEMS_1) and then at the end of the evaluation (FEMS_2). These are intended to allow a form of comparison between initial responses and final responses.

Q.1, FEMS_1: Before the FEI, there was already a high level of trust and cooperation between physicians and facility management (n=722).

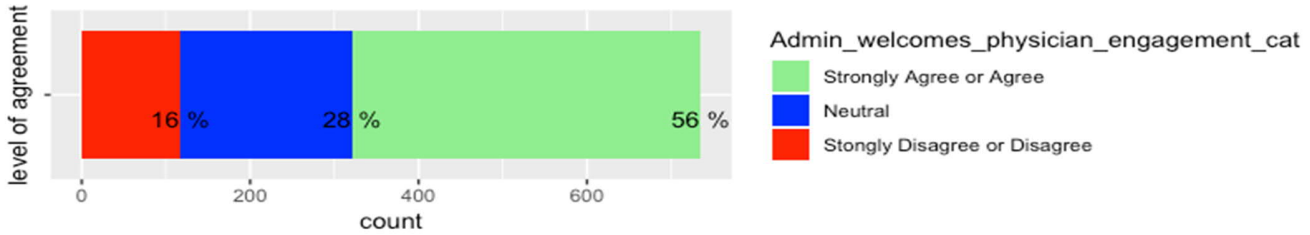


Q.1, FEMS_2: There is now a high level of trust and cooperation between physicians and facility management (n=690)

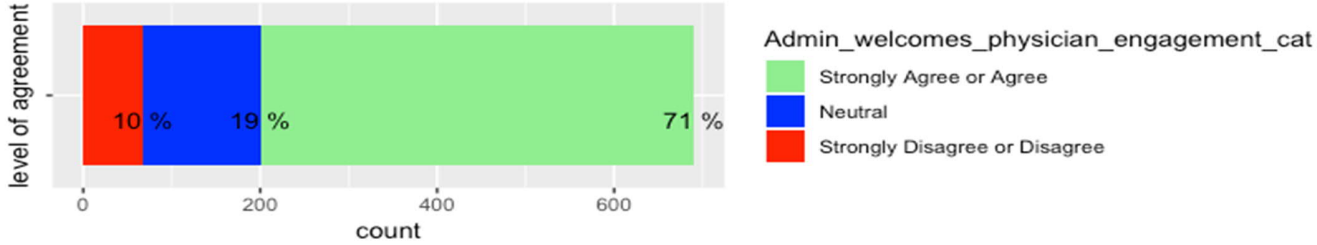


Q.3 The administration at this facility welcomes more physician engagement

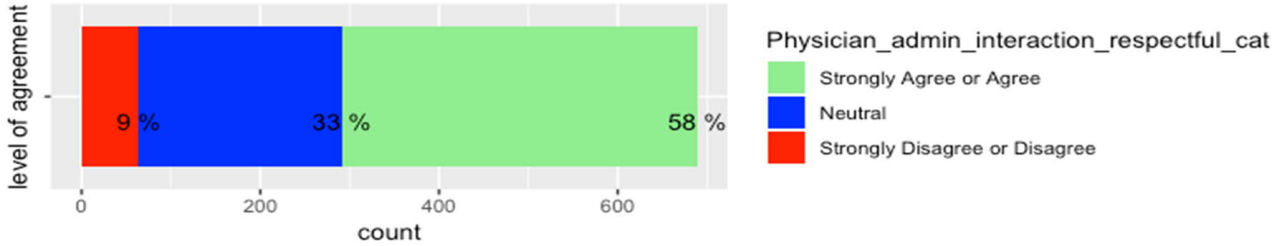
FEMS 1:



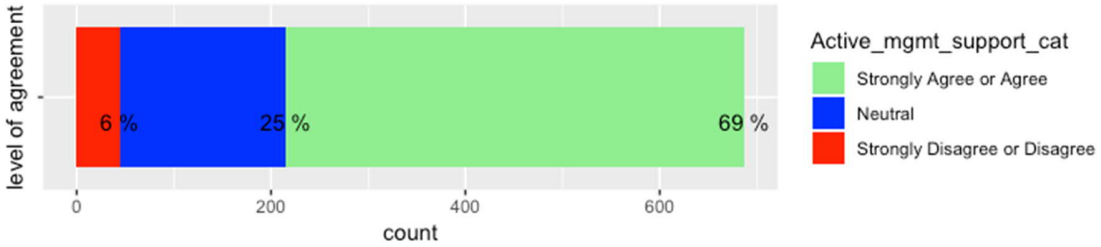
FEMS 2:



Q.7 Interactions between medical staff and administrators at this facility have become more respectful and positive.



Q 12. Management at this facility actively support FEI activities.

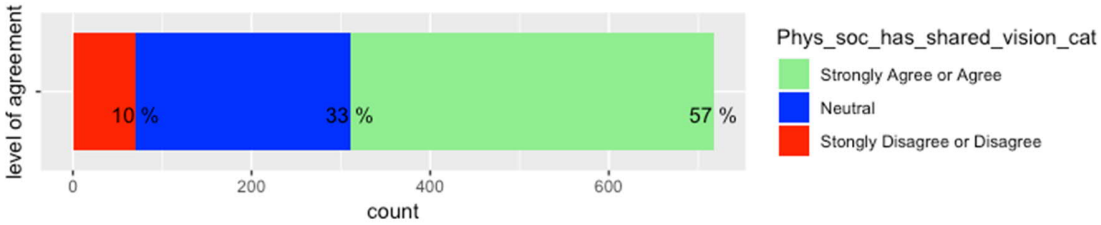


Progress here (Q1, Q3 above) and reported change in Q7 and Q12 speak to movement toward the logic model short term outcome: Improved communication and strengthened relationships between facility-based physicians and health authority administrators.

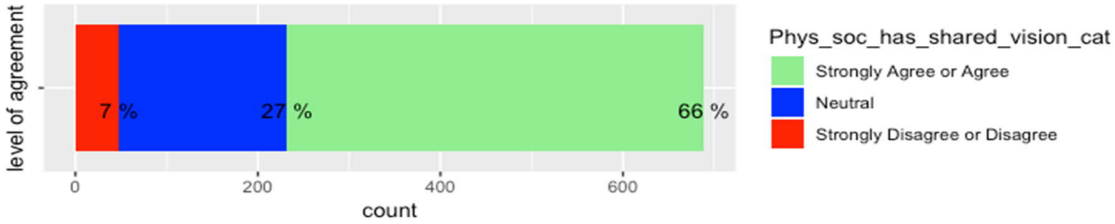
Clarity of vision and target

Q.4 Our MSA/physician society has established a shared vision of what we would like to achieve.

FEMS 1



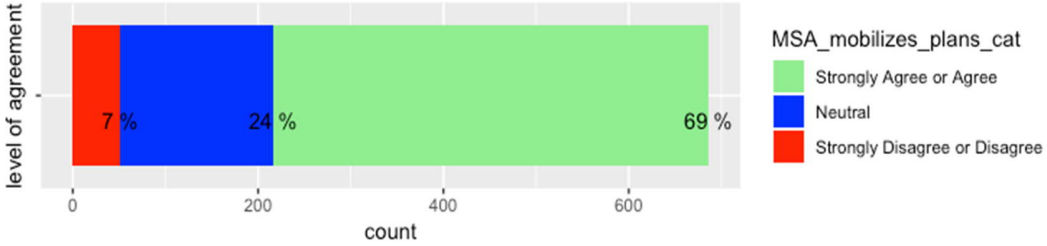
FEMS 2



The indicated improvement here speaks to logic model output: Facility based physicians identifying and prioritizing issues significantly affecting physicians and patient care

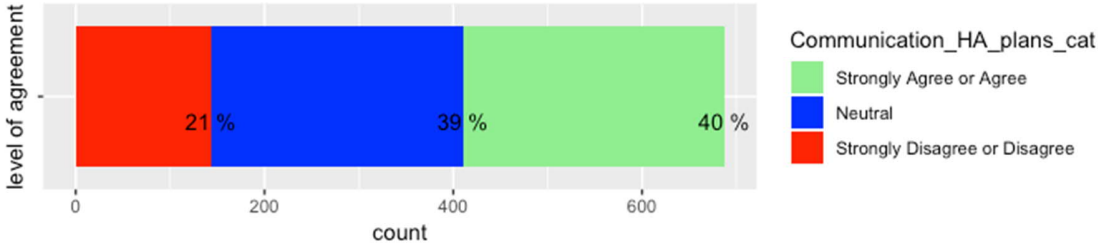
Mobilizing plans

Q.8 Our MSA/physician society has become effective at mobilizing plans and proposals into action.

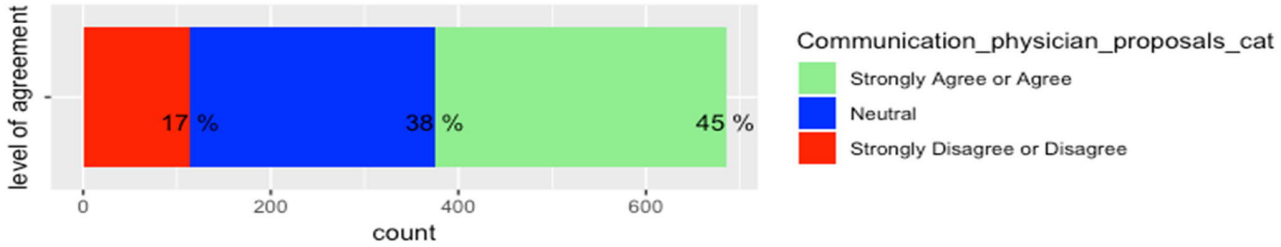


Communication

Q.10 There are clearer lines of 2-way communication to ensure that physicians are informed of health authority policy or plans that affect them.

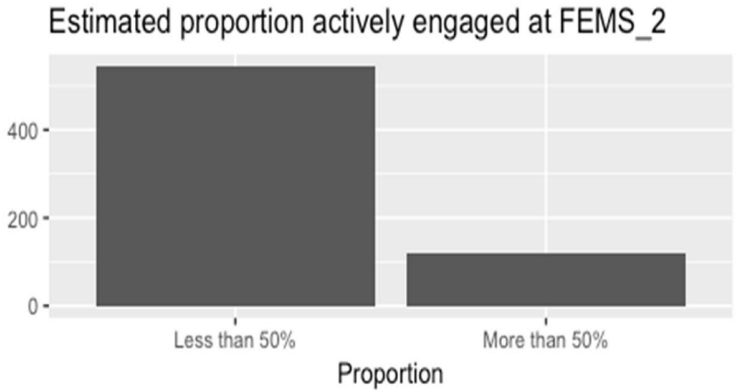


Q. 11 There are clearer lines of 2- way communication to ensure that proposals generated by physicians are considered by health authority senior leadership.



Q10 and 11 speak to the short term outcome of Improved lines of communication established between facility based physicians and health authority operational leaders

FEMS_2 What proportion of the physicians at this facility would you estimate are actively engaged in decision making and priority setting affecting working conditions and facility performance?



The FEMS-2 survey also asked respondents to report on what they considered to be the most effective activity at their site, what they felt was the biggest achievement of the FEI and what they considered to be the most notable change. Responses are summarized in Table * below. (This is a more complete presentation of data referred to in the discussion of short-term outcomes in the main text.

Table *

	Most Noticeable Change (n=479)	Biggest Achievement (n=387)	Most effective activity (n=453)
	Number of comments reflecting these prominent themes		
Improvements in relations and collaboration among physicians	140 (29%)	116 (30%)	154 (34%) (meetings/events)
Physician voice: better physician input to process improvement or change	77 (16%)	50 (13%)	
Improved cooperation collaboration between physicians and HAs	79 (16.5%)	44 (11%)	13 (3%) (meetings/events)
Quality Improvement	18 (4%)	45 (12%)	92 (20%) (activities/projects)
Education activities (access and participation)	14 (3%)	20 (5%)	80 (18%) (learning opportunities)
Physician wellness	8 (1.5%)	16 (3.5%)	28 (6%)
Planning or working toward a shared vision			28 (6%) (meetings/events)
Compensation or recognition for participation	19 (4%)	21 (5%)	23 (5%)
Improved morale/working environment	14 (3%)	34 (9%)	
Physician Lounge/ coffee / food	13 (3%)	14 (3.5%)	25 (5.5%) (meetings/events)
Column percentages accounted for by these themes	(80%)	(92.5%)	(97%)

The graph below provides further evidence about the lack of relationship between spending and achievement of outcomes, described earlier in the main text. Here, facilities (n=45) are plotted on the vertical axis. The horizontal axis ranges from 0-100%. For each site, two measures are plotted: green squares represent the degree of progress reported by respondents (from FEMS data), and red triangles represent the proportion of site funds expended as of December 2018. Most sites report between 50 and 80% 'achievement' of desired progress. If spending predicted success, we would expect these measures to track somewhat in parallel; clearly, they do not.