

# The HTM Roadmap

## ***A Guide to Achieving AAMI's Strategic Plan and Advancing HTM***

What does the road ahead look like for healthcare technology management (HTM) professionals?

It is somewhat long, will likely have twists and turns, it has an exciting destination worth pursuing. That destination is a place in which HTM professionals are equal partners in any healthcare delivery organization, are recognized (and valued) by the C-suite, play leading roles in the procurement and use of medical devices and health technology, and are celebrated as part of a multidisciplinary team that supports patient safety.

To help reach that destination and elevate the HTM profession, AAMI's Board of Directors approved a new Strategic Plan in 2017 that focuses extensively on HTM. At that time, the Board advocated for the creation of a new HTM Vice President position at AAMI. In 2018, Danielle McGahey was hired to fill that position.

### **Overview**

As part of her onboarding process, Danielle interviewed 56 HTM professionals in the summer of 2018 and asked six standard questions. The professionals interviewed were diverse in nature representing small and large, in-house HTM programs and independent service organizations (ISOs), and included manufacturers, consultants, and educators. The people interviewed ranged from front-line staff to senior managers. The six standard questions were as follows:

1. If you were the new VP of HTM, what would be your priority during your first 6 months on the job?
2. What are the three biggest challenges HTM is facing right now?
3. The pipeline is a major concern for the HTM field right now. What creative solutions have you implemented to respond to this challenge? What factors are contributing to this challenge? What is a small and large-scale solution you think would help address it?
4. Do you have an idea on how to better promote HTM (so the general population knows what HTM is)?
5. What educational opportunities are lacking in the field right now and how can AAMI help?
6. How can HTM be more visible to the c-suite?

### **Field Feedback**

#### ***Question 1: If you were the new VP of HTM, what would be your priority in the first 6 months?***

Answers to this question varied from analyzing the member base to better defining HTM. The most common answer was to do what Danielle did: interview professionals in the field. Regarding better defining HTM, it was suggested that AAMI needs to define the direction thought leaders perceive the field should be and figure out how we should get there while securing a strong future for HTM.

Other suggestions included evaluating all AAMI's HTM committees and determining how they tie back to the strategic plan, inventorying all HTM products already in existence, analyzing AAMI's website and

making it more user friendly, and understanding all the internal AAMI departments, what they are working on, and how they fit into the HTM strategy. Since there is so much going on, it is important that the VP take the time to understand everything and have clear goals set.

Also, interviewees said AAMI could play a stronger role in helping the field address pressing issues and hot topics with the FDA, the Joint Commission, and the Centers for Medicare & Medicaid Services (CMS). The field is often reacting to regulatory changes rather than being pro-active by proposing solutions before regulation is considered. A good example is the alternative equipment maintenance (AEM) program. AEMs are not a new topic yet there is still so much confusion in the HTM field around this. AAMI also does not have a voice within CMS on HTM-related issues. An example of this concerns e-safety. NFPA-99 now says that it is not needed routinely. However, Florida and California still have archaic laws around e-safety and the HTM departments in those states are spending time doing work that is not viewed as beneficial. AAMI could survey all states to learn the different regulations so these issues are more transparent to the field and can be addressed by a national organization.

***Question 2: What are the three biggest challenges HTM is facing right now?***

The top eight HTM challenges are listed in order:

1. Pipeline of new individuals entering the field (42) – 75% percent of those interviewed
2. Cybersecurity/IT challenges (18)
3. Identity (17)
4. Education (16)
5. Standards/standardization of industry practices/benchmarking (15)
6. Recognition (13)
7. Change in healthcare technology (12)
8. Right to Repair (9)

Other topics that surfaced during interviews but had less than 5 respondents were AEMs, AAMI's perceived lack of strategy and vision for HTM, AAMI's inability to execute on initiatives on occasion, a lack of focus on the military, consultants who AAMI depend on but who are no longer working in hospitals, certification, the difference between technicians and engineers, and radio frequency identification.

***Question 3: The pipeline is a major concern for the HTM field right now. What creative solutions have you implemented to respond to this challenge? What factors are contributing to this challenge? What is a small and large-scale solution you think would help address it?***

When speaking to interviewees about the pipeline challenge, the most common statement that followed peoples' initial frustration of not being able to hire good candidates was, "No one knows who we are or what we do." It's a telling statement, and one that has been shared for decades: How can we recruit people into a field that they do not know exists? If people working in our field cannot eloquently describe what we do, how can we begin to explain it to others let alone promote it?

The HTM field has seen a major shift in what it does as a service in the last decade. HTM won't thrive if it's known basically as a fix-it shop in the basement. Leaders and services that get noticed within a healthcare organization are ones that bring forward solutions to issues, can be relied upon and never say "that's not my job", are customer facing and act with a multidisciplinary approach, and bring

innovative solutions forward that impact systems and the overall environment of care. Many HTM leaders see this big picture, some technicians don't.

Unfortunately, the identity crisis is prevalent today as some "old school" HTM shops aren't inclined to be customer facing with the C-suite and do not pursue ongoing education. This creates a challenge when we think about developing tomorrow's leaders. It's critical that young employees are mentored by the more seasoned managers and given the opportunity for growth and training via webinars, conferences, etc. We need to foster these ambitious rising stars, or we could lose them to IT or other markets where the pay is higher and the progression for advancement is faster.

As we grapple with the pipeline issue, we also need to be clear about the types of candidates we are seeking and that our needs vary. We must remember that "entry level" means different things for different work streams: technicians, clinical engineers, or managers. This also will impact the types of training AAMI will provide.

With respect to creative solutions that have been used to address the pipeline issue, one HTM leader shared a story of how Northwest Airlines was acquired by Delta and all Northwest employees were being laid off. This individual worked with the local community college to stand back up a Biomed Tech program and then offered all students internships at their local hospital system.

Another HTM leader created a device integration team within his HTM department to stop losing employees to IT. This helped cover the integration gap between the device and the EMR. The team interfaces directly with the c-suite and Project Management Office (PMO).

***Question 4: Do you have an idea on how to better promote HTM (so the general population knows what HTM is)?***

When asking the interviewees how we can better promote ourselves as a field, the most common response was outreach to high school students, working with STEM programs, and getting HTM in high exposure, public ways (TV, etc). It was also suggested that we review, update, and refine with a two-sentence elevator speech for the field. One suggestion was "*We make healthcare work.*" We also need to think about how we connect with individuals who are not on social media, while also doing a better job appealing to millennials.

It was also mentioned that many HTM professionals are introverts and modest, and do not always see the need to brag about their work.

***Question 5: What educational opportunities are lacking in the field right now and how can AAMI help?***

Those interviewed said there is a major gap in healthcare business and leadership training. Since we want HTM to be viewed as a professional service line comprised of leaders, we need to be talking the same language as healthcare leaders. Many HTM professionals brought up terms such as "bundled payments" and questioned if most HTM professionals could describe these terms and how they impact healthcare. We need to get our current HTM managers and future leaders thinking about their decisions and how they relate to patient safety and the hospital's business. What is the difference between profit and revenue? If an HMO has a 4% profit margin, what is the difference between revenue and how does that impact the bottom line? This education will teach HTM managers how to speak to the c-suite and

think of HTM of a value-based service and not a break-fix shop. HTM managers and leaders need to learn to communicate differently based upon their audience and how to present effectively in public.

Cybersecurity education was also frequently mentioned in interviews. HTMs should know how to configure a patient monitor onto the network. There also needs to be better education around the MDS2 form and what all the questions mean and why they are important.

***Question 6: How can HTM be more visible to the c-suite?***

Most respondents emphasized that HTM needs to do a better job of showing value of what HTM brings to the institution. The HTM field also needs to professionalize itself so it looks and acts like those services who are noticed by the C-Suite. HTM professionals must dress appropriately and for success – should not be in jeans. The C-suite worries about the bottom line and the biggest advocates are nursing and the clinical departments. Respondents said that HTM departments should establish strong relationships with nursing and the clinical service lines. As one respondent noted, if you win over the CNO, there is really nothing your HTM department cannot accomplish. When departments are reporting out to the C-suite they should not be focusing on just preventive maintenance (PMs) inspections. Topics to focus on include:

- Removing service contracts
- The quality of repairs that were done inhouse
- Providing technology planning
- Having an upgrade plan for monitors, bed, lights, etc – not only imagining
- Being engaged with and leading on cybersecurity/IT projects
- Showing solutions that avoided the canceling of patient cases. Use Device Performance data in a proactive manner to aid in improved capital planning as well as for device performance/safety issues (e.g., pump failures)
- Managing device recalls – everyone receives these (Nursing, Supply Chain, CFO, CEO, HTM, etc.) yet nobody owns them.
- Incident review – ask to be a part of this discipline! Use the above-mentioned device performance data
- Rounding and visibility. Leaders must leave their offices.
- Establishing one or two quality improvement projects (e.g., alarm management) that provide high visibility and creates a multi-disciplinary approach

***Other Issues Raised During the Interviews***

**Right to Repair**

At present, there is a distrust between many HTM professionals and some manufacturers. Due to the changes in hospital reimbursements, hospitals cannot afford to buy as much new equipment as they once did. During this same time, HTM departments have experienced an increase in parts, software, training, and service prices to maintain the devices. This is causing a lot of friction in the industry. It has been suggested that AAMI resurrect the supportability efforts—bringing together a group of HTM and manufacturing professionals to help reach a middle ground. The conversation should be monitored carefully.

Other concerns are the inability to get manufacturers to provide service manuals. This is causing HTM departments concern when manuals are needed quickly to fix downed equipment affecting patient care.

Other concerns are that laser company's claim that they must service their own lasers because the "FDA mandates it." The FDA has never made this type of statement.

#### Mediating Differing Groups

Another suggestion for a long-term goal is to help be a catalyst for getting HTM stakeholders to play nice with one another and work together. As described, there are two battles that exist in the field: 1) in-house HTM programs against the ISOs and 2) the in-house HTM programs and the ISO against the original equipment manufacturers (OEMs). Some HTM leaders from large, in-house programs feel there is always a fight to not get outsourced and then there is another battle with the OEMs to obtain manuals and parts, so equipment can be fixed. These battles may always exist because of conflicting priorities, but AAMI can play a role in seeking common ground.

#### Cybersecurity/IT

Clinical technology and IT continue to converge at a rapid pace and our profession has not adapted to it. That's why IT had gained more recognition in healthcare. HTM education programs need to adapt to teach student since there are few devices that are not networked these days.

#### Change of Technology in Healthcare

Technology is continually changing and becoming smaller. With the advent of telehealth, virtual reality (VR) and the use of iPhones for diagnosis, HTM needs to rethink how we are supporting these devices and their role in safe patient care. If we do not step up to this challenge and are prepared for it, someone else will and our field will become extinct. Many existing devices can self-test now. Are we still doing PMs because it makes us feel more comfortable or because they are really needed?

#### Standards/Benchmarking/Consistent Practices

Some in the HTM field believe there is lacking meaningful, impactful, and helpful standards that tie back to the FDA. There is also not standardized data or business practices across the field. What laws do we have to abide by? Some respondents said the EQ Standards are weak documents and the HTM standards feel like a "*grand compromise*." There is consensus that standardization to HTM practices us needed and we need to do a better job of sharing best practices.

# Roadmap Action Items

Based on interviews, other discussions, and experience with AAMI members and staff, what follows are the action items to move forward:

## Overview/Guiding Principles

- 1) The HTM plans below reinforces and builds upon HTM goals, objectives, and strategies contained in AAMI's Strategic Plan.
- 2) The HTM VP will serve as the orchestra leader for everything HTM-related at AAMI across departments—education, certification, standards, membership, communications, etc.—to ensure that our plans are whole, consistent, and build off each other.
- 3) All major initiatives (promoting the field, ISO outreach, HTM association initiatives, etc) will have a clear plan including goals, tactics, and metrics associated with them.
- 4) Meeting with—and communicating with—varying committees and groups (ISOs, educators, HTM associations, etc) will be a top priority and occur on a regular basis as noted in this roadmap.
- 5) Recurring tasks performed annually will be maintained in a spreadsheet for succession planning purposes and to ensure a smooth transition from one year to the next.
- 6) Clear roles and responsibilities will be set for the HTM VP (Danielle), the deputy director of the foundation who is assisting (Jim) and the office coordinator (Rhonda).
- 7) An annual review will occur to assess the effectiveness of HTM initiatives to ensure success, and to update this roadmap as appropriate.
- 8) The overwhelming majority of HTM work should tie back to one of three major committees (TMC, HTLC, or WSTF.)
- 9) There will be clear metrics established in major areas to measure success. Metrics cited in AAMI's Strategic Plan must be in line with metrics noted in this roadmap.
- 10) We must always be mindful of resources. With limited resources, we need to focus on projects that have high value to a significant number of individuals and create resources that others can help disseminate.

As the action items below indicate, a lot of work needs to be undertaken within the HTM enterprise at AAMI. Some are major projects; others are tweaks or re-evaluations of existing programs. This report is meant to serve as a staff guide of action items to accomplish. It is NOT meant to set the strategic direction for AAMI's HTM enterprise. That is addressed in AAMI's Strategic Plan.

While this roadmap covers a lot of territory, these issues are among the top priorities in the first year.

- Reinvigorating several HTM committees at AAMI to give them new direction and support.
- Reorganizing HTM resources on the AAMI website to make them more accessible.
- Creating tools for the education community to highlight HTM as a known and desirable profession.
- Developing promotional material to spotlight the value of HTM.
- Engaging with outside organizations, such as the Department of Labor, to more effectively showcase the appeal of a career in HTM.

- Developing additional resources that provide guidance for the biggest challenges facing HTM.

The roadmap has its roots in the overall Strategic Plan for AAMI, which states as one fundamental objective, “Strengthen the healthcare technology management profession.” The alignment with the Strategic Plan underscores the intent of having the organization move forward in an organized and cohesive fashion.

## Committees

This report includes action items about several HTM committees within AAMI that serve as important means to advance HTM-related issues. They are the:

- Technology Management Council (TMC)
- Healthcare Technology Leadership Committee (HTLC)
- Wireless Strategy Task Force (WSTF)

In addition, AAMI is a partner in the new Health Technology Alliance (HTA), a coalition between AAMI, American College of Clinical Engineering (ACCE), and the Healthcare Information Management and Systems Society (HIMSS).

Other committees within AAMI play an important role in HTM issues including the AAMI Exchange Planning Committee, the American Credentials Institute (ACI) Board, the *BI&T* Editorial Board, relevant standards committees, and the AAMI Foundation.

### **The Technology Management Council (TMC)**

The TMC plays a pivotal role in all HTM matters, addressing the pipeline issue, producing educational resources, helping to standardize the field, promoting HTM, and creating benefits for HTM members of AAMI (mentoring, access to the Joint Commission, supportability online resources, guides, etc). Still, many ideas surfaced during the interviewing process to help strengthen the committee and participation of TMC members, leading to these actions:

Review, revise and strengthen the TMC's mission, key areas of focus, membership terms, size, and make-up.	TMEC - Fall 2018
Create two TMC positions for members under the age of 35.	TMEC - Fall 2018
Create clear expectations for TMC members. Participation on committees, speaking at HTM events, high school outreach, etc.	TMEC - Fall 2018
Hold quarterly meetings (3 by phone, and 1 in person)	Starting in fall 2018
Create a standing subcommittee for educators – The TMC Educators Group (Encouraging more HTM education programs, curriculum development, ABET issues, etc)	Fall 2018
Create a standing subcommittee for ISOs – The AAMI ISO Group (more on this later)	Fall 2018
Reinvigorate a standing subcommittee to promote the HTM field	Fall 2018
Make determinations about necessary subcommittees	Fall 2018

Issue a monthly newsletter to committee members, providing updates about activities from the previous month and upcoming activities and requests. (activated through AAMI Connect)	1 <sup>st</sup> week of each month
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### **The Healthcare Technology Leadership Committee (HTLC)**

Historically, the HTLC has been less active but efforts need to be made to make this committee more vibrant. The HTLC seeks to provide leadership resources to groom future HTM leaders and provide resources to existing HTM leaders. To strengthen this committee, the following will occur:

Review, revise and strengthen the HTLC's mission, key areas of focus, leadership structure, membership terms, size, and make-up. Consider a vice-chair position.	HTLC leaders - Fall 2018
Create two positions for someone under the age of 35, including two spots for the recipient of the Young Professional Award winner.	HTLC leaders - Fall 2018
Create clear expectations for HTLC members. Participation on committees, speaking at HTM events, high school outreach, etc.	HTLC leaders - Fall 2018
Hold quarterly meetings (3 by phone, and 1 in person)	Fall 2018
Identify two major HTLC projects for 2019 (considerations: leadership training, succession planning, and creation of a standard "state of the department" document for new/mid-level managers to use when communicating with the C-suite)	Fall 2018
Provide structure to what is known as the Manny Meeting by creating a mission, leadership structure, focus, and stronger connection to the HTLC. Have HTLC projects identified by the Manny meeting, and have completed HTLC projects discussed at the Manny Meeting. The Manny Meeting should have clear outcomes and deliverables.	Early 2019
Issue a monthly newsletter to committee members, providing updates about activities from the previous month and upcoming activities and requests. (activated through AAMI Connect)	1 <sup>st</sup> week of each month

### **Three notes of importance regarding both the HTLC and TMC:**

- 1) It's important the HTLC and TMC members are kept abreast about the activities of the other group to ensure that they don't duplicate each other's work. To that end, the HTM VP will provide a brief update at each meeting letting each group know what the other is doing.
- 2) It's also critical that the revised missions of the two groups be distinct. As envisioned, the HTLC would handle leadership-related issues such as grooming future leaders, leadership training, and succession planning; while the TMC is the overarching group for all HTM-related matters.
- 3) Staff also needs to make a concerted effort to ensure diversity (age, gender, race) on all committees to reflect diverse points of view.

### **The Wireless Strategy Task Force (WSTF)**

The WSTF is a group created to stay abreast of wireless-related issues and develop resources for the membership particularly the HTM community.

Review, revise and strengthen the WSTF's mission, key areas of focus, membership terms, size, and make-up.	WSTF leaders – Fall 2018
Create two WSTF positions for someone under the age of 35	WSTF leaders – Fall 2018
Create clear expectations for WSTF members.	WSTF leaders – Fall 2018
Come up with educational offerings and webinar ideas for the field.	2019
Provide better education to the WSTF about HTM and ensure there is adequate mix of HTM professionals represented on the committee. Many members are industry based.	2018/early 2019
Identify two to three major WSTF projects/deliverables for 2019	Fall 2018
Hold quarterly meetings (3 by phone and 1 in person)	Starting in fall 2018
Issue a monthly newsletter to committee members, providing updates about activities from the previous month and upcoming activities and requests. (activated through AAMI Connect)	1 <sup>st</sup> week of each month

### **Major HTM Issues**

#### **Attracting Professionals to the Field**

As reinforced by the interviews and AAMI's Strategic Plan, attracting professionals to the field is critically important to employers of all sizes and types. This will take a major concerted effort by multiple stakeholders, well beyond the TMC, HTLC, and AAMI staff.

The following actions will occur in the next twelve months (fall of 2018 through fall of 2019):

The weekly IamHTM campaign continues	Sept. 2018
A subcommittee of the TMC (and outgrowth of the Future Forum) be re-energized and focused. The subcommittee could consider, among other things: creation of a national coalition of groups to promote HTM, develop a PR/fundraising campaign to engage others, review HTM developed materials, pursue an HTM scout badge, labs for STEM programs to use, etc	Fall 2018
The IamHTM website be revamped. The elevator speech and other materials already developed are reviewed and revised as necessary.	2019
Metrics are developed to measure success	Early 2019

The Ken Maddock proposal (a high school panel) be created and convened) <ul style="list-style-type: none"> <li>- Panel will begin in 2019</li> <li>- Joint effort with Trimedx (Charlette, NC) - 2020</li> </ul>	Early 2019
A short PowerPoint (3 slides max) and video be created to enable others to promote the field. (Presentation may have suggestions for a demonstration/lab). The goal is to empower others to present, and standardized and strengthen the message.	Early 2019
Expectation created by TMC and HTLC members to present	Fall 2018 (as part of the committee missions/expectations)
Connect with the American School Counselor Association and determine best role	2019

#### Priorities for 2019

Develop a game plan to reach out to STEM programs, robotics clubs, vocational/technical high schools and Girls and Boys Scouts	2019
Relaunching the student essay contest	2019
Engage the Department of Labor in revamping the “medical equipment repairer” job description	2019 - 2020
Consider creation of a Machine Doctor to appeal to children	2019 -2020
Create an organizational alignment back to education outside of HTM. HTM needs a chapter in MBA, MPH, MHA text books so hospital leaders in training have heard of HTM	2019 -2020
Create communications tools for high school guidance counselors and teachers about the field. Consider engaging videos (toolbox challenge vs. ice bucket challenge, highlight controversy, when a disaster happens – highlight HTM’s role in the news (a YouTube channel?)	2019
Better understand the best way to communicate with millennials and Generation Z. What is their preferred source to receive information?	2019
Partner with ISOs and other major employers to pilot a public relations program to showcase the value of HTM.	2019
Consider a formal relationship with SWE, NESBE, BMES, IEEE-EMBS. Start local AAMI chapters at colleges.	2019 - 2020
Make determinations of giveaways and enhanced interactive tools to engage younger individuals at AAMI’s booth and online (for example, interactive quizzes.).	2019
Creating a formal High School Outreach Program through AAMI with regional/state champions.	2019 (Regions) 2020 (State)

## **Promoting BMET Education Programs**

AAMI's role here needs to be twofold: 1) Encouraging schools to develop BMET education programs and encouraging higher standards within those programs; and 2) Helping employers find individuals to fill existing jobs in the shorter-term.

### **Education Programs**

With guidance from the Educators Group, update the online list of BMET schools on the AAMI website	2019
With guidance from the Educators Group, identify top prospects and techniques to promote the development of BMET education programs	2019
Increase educator engagement with AAMI through quarterly calls where educators can share best practices and success stories (and failures)	2019
Turn core competency document into an AAMI standard to give it more prominence/stature (work underway)	2020 (Patrick Bernat)
Evaluate the role of ABET and the value to AAMI and HTM	2019
Educators help develop a business plan for starting an HTM program.	2019

### **Placing Students**

Evaluate current offerings (AAMI's online Career Center and Job Fair) and discuss with educators and recruiters what additional support (if any) would be helpful.	2019
Create a presentation to be given to undergraduate programs to help educate undergraduates about their career options. (Work with educators' group)	2019
Consider development of an internship program, or an Internship Handbook for employers	2019 -2020
Connecting students with jobs. AAMI should gather the resumes of all graduating students (from the educators participating in the educators group, and send them to the recruiters that participated in the AAMI exchange that year.)	Intern

## **Promoting the Value of HTM**

Related to the pipeline issue and consistent with AAMI's Strategic Plan, AAMI needs to play a more assertive role in promoting the value of HTM to the C-suite and other interested parties. Priorities in this area will be to:

Review and revise if necessary brochures and promotional material already developed to address this issue and ensure all materials are conveying consistent information	1 <sup>st</sup> Quarter 2019
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Engage the HTLC members and others in a plan to get published in journals read by the C-suite (AHA, ACHE, HFMA, etc), Beckers	2019
Explore podcast opportunities	2019
Create a standard “State of the Department Document” that new/mid-level managers could use to use and communicate to the C-Suite (See potential project for HTLC)	2019
Partner with the Biomedical Engineering Society (BMES) and IEEE- Engineering in Medicine and Biology Society (EMBS) to promote HTM to their 18,000 combined members.	2019-2020
Consider development of a webinar or education session on “how to convey the value of your HTM department to senior management” – using meaningful data, etc. Develop a standardized template to help departments. Also develop and publish case studies of exemplary departments in AAMI Publications to share best practices and lessons learned.	2019-2020

### **Creation of a Comprehensive Education Program**

This section addresses four primary AAMI goals related to education. It's important that AAMI:

- 1) Work with BMET education programs and employers to provide entry-level education.
- 2) Provide a menu of educational programs to help HTM professionals throughout their career.
- 3) Respond quickly to emerging issues and provide relevant course study.
- 4) Offer education in a cutting-edge and interactive way through up-to-date technology or bringing education to the field.

To supplement BMET education programs, which are lacking in many areas of the country, AAMI University should step in. This provides an opportunity for AAMI to make a meaningful difference and become known to young professionals and create lifelong members.

#### *Entry-Level Programming*

AAMI should consider partnering with a college (so financial aid can be given) and provide the course (book) work at the student's fingertips. AAMI could partner with a few hospitals in states where labs and internships can be completed. For instance, Colorado doesn't have any college with a biomedical technology program. AAMI should develop the internship work (a.k.a. "labs) that must be completed by the student at the hospital where they perform their internship. This way all HTM students are getting the same hands on experience and HTM departments are not using them to file papers or answer phones.

AAMI should also look to partner with the locations that have training labs such as GE Training School in WI; Kaiser Permanente Lab in CA; Partner's Healthcare Lab in MA; Trimedx Lab in NC; Military Training School in TX; Philips Lab in MA; and RSTI in OH.

We could consider partnerships with these programs to provide summer camps for high school students.

## *Lifelong Learning*

AAMI should also create a menu of courses for HTM professionals already in the field. The courses should focus on sharpening the skills of HTM professionals regardless of position. We want to create thought leaders at all levels of an HTM department.

Many HTM programs are small and do not have a Clinical Engineer on staff so the BMETs end up doing these tasks. We need to teach all HTM professionals how to present evidenced based data that all levels of the hospital can relate to. AAMI could also package this content so it all available on demand and HTM professionals can take the recorded courses in their spare time. There needs to be competency testing at the end of all courses.

There also needs to be an education plan that accompanies all CMS, Joint Commission, and FDA changes; as well as courses related to new or revised AAMI Standards and products such as the AEM and Acquisition Guides. There should be planned webinars that review the general premise of the regulation change or product and then allow attendees to ask questions.

On Sept. 6, AAMI's HTM VP met with AAMI's COO and SVP of Education and Program Coordinator to map out specific HTM educational needs within three groups—early, mid-career, and management. The following chart was produced. The items in bold were rated as priorities:

EARLY CAREER	MID to LATE CAREER	MANAGEMENT
<b>Networking-Basic (HTM-IT course)</b>	<b>Networking-Advanced (cyber, HTM-IT course)</b>	<b>Leadership Academy</b>
<b>Soft skills</b>	<b>Soft Skills</b>	Soft Skills
<b>Biomed 101</b>	<b>AEM</b>	<b>Communication with the C-suite</b>
CBET Study Course	<b>Leadership Training</b>	Capital planning
Pre-CBET Certification	Reading construction documents	Reading construction documents
Interaction with Customers	<b>Running a recall program</b>	<b>Running a recall program</b>
<b>Series: Future of Healthcare Technology (blockchain, virtual reality, artificial intelligence, telehealth)</b>	<b>Series: Future of Healthcare Technology (blockchain, virtual reality, artificial intelligence, telehealth)</b>	<b>Series: Future of Healthcare Technology (blockchain, virtual reality, artificial intelligence, telehealth)</b>
	CE-IT Certification	CE-IT Certification
	<b>Acquisition Guide Training</b>	<b>Acquisition Guide Training</b>
	Interacting with customers	<b>Leadership Certificate</b>
	Project Management	Emergency Management/Disaster Planning
	CBET Study Course	CMMS data for quality/data analytics

Other courses to keep on the radar screen for future consideration include risk management, finance, (give bottom line overview), Excel (teach staff how to make graphs to present to leadership), and equipment planning.

Based on the chart above, the following were deemed priorities and here's the next step with each.

Engage HTM VP and HTM committees to help enhance sessions on these topics at the AAMI Exchange in 2019	Fall/Winter 2018-19
Develop a plan to tackle the networking basics and advanced work (HTM-IT Course, cybersecurity, etc)	2019
Consider opportunities for a pilot program on soft skills – a day-long, interactive session, possibly with an HTM association	2019
Launch Biomed 101 (Determine status from VP of Innovation)	2019-2020
Evaluate next steps regarding AEM (SVP of Education to determine Baretich/Painter project and potential conflict with their other partner, and/or other opportunities in AEM arena)	Fall 2018/2019
Assign Jim Piepenbrink to evaluate and develop recall training	2019
Explore best means to develop leadership training (AAMI Exchange/webinar/association partnership, etc) and pilot	2019
Schedule acquisition guide webinars upon release of guide	2019
Work closely with faculty producing 2019 leadership training to strengthen program, potentially expand it, etc	2019
Develop outline for a major forward-looking series on healthcare technology (blockchain, virtual reality, artificial intelligence, telehealth), recall management, and QI better practices.	2019-2020
Launch leadership certificate	2019

### *Certification*

During the interviewing process, several HTM thought leaders suggested enhancements to the certification including the following. These are being shared with the AAMI Certification Institute (ACI):

- 1) AAMI should consider a CE/IT certification, given the continuing changes in the field and increasing number of HTM professionals who are seeking out the Network+ certifications. One idea is to call it a certified medical device integration specialist.
- 2) AAMI should consider certification of HTM departments to help promote standardization and field progression. The department certification could follow the levels guide.
- 3) AAMI should do a lot more to promote the value of certification. Through this campaign, we need to showcase employers who require and/or reward certification to encourage others to follow suite. One approach is to encourage (through discounting and good public relations) a large ISO to get onboard and have all of their BMETs and managers certified. This will start the catalyst.
- 4) AAMI should work more with the industry to ensure more CEUs are available to HTM professionals holding a certification so it is easier to maintain. Right now, TechNation is the only

group providing CEUs. AAMI will reach out to 24x7 and others to see if these organization can start providing certificates as well.

- 5) AAMI should investigate making the journal process automated. All other professional certifications are done this way.
- 6) AAMI should offer more certification opportunities by partnering with local HTM societies, ISO, and OEMs to offer testing on site. If certification cannot handle this work load, we should look at adding resources.

Many interviewees suggested that there be a requirement that all BMETs become licensed. The thought process is that all clinicians that use the medical equipment the HTM community supports are required to be licensed but the people who maintain the equipment are not. We have a lot of work to tackle before pursuing such an effort, but it should remain on AAMI's radar screen.

Other certifications suggested include a certified medical device cyber security specialist, database program manager, and vendor manager.

### **An Increased Focus on Standardization**

AAMI's Strategic Plan calls for increased development of standards for HTM-related services. As such, in 2018, a new director's position was created in the Standards Department was developed to focus exclusively on such.

To add increased focus to these new initiatives, the AAMI Medical Equipment Management Committee (EQ Committee) was restructured and expanded in 2018. A business plan was also developed to focus on HTM standards.

It will be critically important for the HTM VP and the HTM Standards Director to remain in regular contact with each other and each other's committees to identify new standards and provide updates on initiatives.

### **Other Issues**

Over the course of the next year, the HTM VP should evaluate other projects and priorities including the following:

- Expanding the HTM community to relevant partners. (See tactics noted under Goal 1, Objective 3.)
- Engaging manufacturers, ISOs, and health systems to provide access to equipment for training (Goal 1, Objective 4.)
- Whether AAMI should continue its role with IHE.
- Determine whether there are supportability/serviceability-related issues that should be tackled by the TMC.

## **HTM-Related Member Benefits**

A primary reason that individuals and institutions join AAMI is because of HTM-related education received through AAMI publications and other benefits and services. While AAMI relies heavily on corporate members for funding the association, HTM individuals and institutions play an important role in keeping the membership diverse—which is core to AAMI’s mission—bringing diverse interests together to reach consensus on important issues.

AAMI’s HTM VP will have regular meetings with the Communications, Education, and Membership teams on relevant HTM-related articles, webinars, Annual Exchange programs, certification, and other membership resources that should be developed. These will include programs managed by the Membership Department but have strong appeal to HTM such as the AAMI Connect online discussion groups, the mentorship program, online Career Center and Job Fair at the AAMI Conference, and fellowship program.

In addition, the following programs are offered through HTM and will be built into the annual calendar as regular events:

- “Bright Ideas” column and winner
- HTM Appreciation Week
- “Ask the Joint Commission” column
- Student essay contest
- Special events at the AAMI Annual Exchange (HTM Roundtable, etc)
- Online resources (templates, etc.)
- Career resources (maintaining and updating)
- IamHTM website

In particular, these four benefits should take priority in the next twelve months:

Review and significant upgrade of an online repository of information on AEMs, personnel policies and procedures, templates, manual guidance, etc	2019-2020
Evaluate the 2017-18 broad assessment of AAMI’s career resources and determine next steps.	Winter 2018
Launch of the new Fellowship program, with Membership in the lead (Fellowship applies to all AAMI members but there is a special interest with HTM in its launch)	Early 2019
Quarterly HTM Webinars on relevant HTM Topics	2019

## **Relationships**

As a small organization with a lean staff, AAMI relies heavily on volunteers and collaborating organizations to help advance HTM-related issues. AAMI is well-positioned to create quality resources

to advance the field, but needs the volunteers and partnering organizations to disseminate the resources and messages important to HTM.

Below are action items to cultivate and strengthen relationships:

<b>Independent Service Organizations (ISOs)</b>	
Conduct quarterly meetings with the ISO group (including face-to-face at the AAMI Exchange)	Beginning in fall 2018
Identify topics of importance and where applicable work to advance issues	Beginning in fall 2018
Working with the Membership team, develop a “business case” to expand ISO’s role and membership level within AAMI	Fall 2018
<b>Large Hospitals Systems</b>	
Hold face-to-face meeting at AAMI Exchange to discuss their needs and how and if AAMI can address	Summer 2019
<b>Military</b>	
Identify and determine best ways to cultivate relationship with military to work on mutual issues of interest and to disseminate information	Fall 2018
Promote membership	2019
Hold face-to-face meeting at AAMI Exchange to discuss their needs and how and if AAMI can address	2019
<b>VA</b>	
Determine best ways to strengthen already strong bond with the VA	2019
<b>HTM Associations</b>	
Encourage HTM Association Leaders to use the HTM Community in AAMI Connect to discuss ideas.	Fall 2018
Conduct quarterly meetings with HTM Association leaders (including face-to-face at AAMI Conference)	Fall 2018
Working with the Membership team, determine best membership model to engage HTM associations within AAMI	Fall 2018
Form a team to help start up associations in areas of the country that do not have societies. These societies will not be run by AAMI and will be handed off once they are off the ground.	2019 - 2020
AAMI can put together a speaker list and AAMI can create a repository of resource documents for HTM Societies.	2019
Work with Associations to bring AAMI Education and Certification to them.	2019 and beyond

In addition to the above-mentioned organizations, AAMI’s HTM VP should always keep be mindful of partnering with other organizations (ACCE, ASHE, ACHE, CHIME, HIMSS) when appropriate to advance HTM-related issues.

## **Communications/Participation**

Engaging in regular communication with AAMI's committee members, membership, and the HTM field is critical to the success of AAMI and the HTM program.

To that end, the following will be undertaken:

<b>Website</b>	
All content on AAMI's website will be reviewed, revised, and upgraded to ensure easy access to current, timely, and relevant information. Also ensure all documents are providing consistent information. This includes the IamHTM website, student website, and HTM resource areas.	2019
<b>Committees</b>	
A monthly e-mail will be sent on the first week of each month to the TMC, HTLC, and WSTF to notify of activities from the prior month, the upcoming month, and make specific requests of members. Parts of the e-mail will be shared with all committees, other parts will be unique to that committee's work.	Beginning in 2018
<b>Sub-Groups (ISOs, HTM associations, educators, etc)</b>	
Relevant information from the monthly committee updates will be sent to the sub-groups on a monthly basis.	Beginning in 2018
<b>AAMI Members at Large</b>	
AAMI's HTM VP will discuss creating regular communications vehicles within AAMI's communications department (these could include, for example, a regular HTM column within AAMI News, an "HTM Corner" area in AN Weekly, enhanced features in Tech News Net, etc)	Fall 2018
Create a series of three to five PowerPoint presentations that could be delivered by committee members and others at events, schools, and employers.	2019 - 2020