EMBRACE CHANGE

When Planning Medical Equipment

How equipment planners—backed by Attainia's powerful medical equipment planning platform—can manage change to a positive clinical and financial outcome during healthcare construction and renovation projects.

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Change Is Not a Dirty Word

The concept of change can bring about angst in any hospital construction, expansion or renovation project. And it's no wonder – research shows that change represents an 11% impact to a construction project's budget, on average. As for changes specific to medical equipment: that typically accounts for a full 4% of the project change.

To an equipment planner who is driving toward two specific goals— completing projects on budget and on time—change may represent a significant threat:

- Change costs money.
- Change causes delays.

But while change—usually manifested in construction projects as change orders—often brings about a negative reaction within equipment planning teams, there is a critical point to consider: not all change is avoidable, and not all change is bad. Construction projects are inherently organic, dynamic endeavors that must manage both expected and unexpected changes throughout their duration. In healthcare projects: hospital business needs change; budgets change; physician preferences change; regulations change. New discounts become available. New technology launches. Time also plays a significant factor; projects that span several years will be more susceptible to change compared to projects that complete in less time.

Regardless of the nature of the change, the goal for equipment planners and project management team members remains the same: to manage change as effectively as possible to mitigate costs and project delays. And sometimes, effective change management can even lead to cost savings to the project's medical equipment budget.

Average equipment-related change orders that impact the cost of the equipment is typically equivalent to 4%–5% of the total number of equipment items. Of these changes:

88%
are initiated by the owner (hospital/IDN/health system)

8%
are due to programmatic changes

4%
are due to contractor-initiated changes

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Based on industry averages, a healthcare construction budget of $70M is typically susceptible to $7.7M in costs associated with change orders.

Skilled equipment planners—supported by Attainia's powerful tools—can embrace change and manage it to a positive outcome.

Read on to find out how.

Source: Analysis completed by OneEQ medical equipment planning consultants, August 2020

Causes of Change Orders

Change occurring throughout a hospital construction or renovation project can have wide-ranging implications to the medical equipment being planned, as well as the equipment budget. Here are the typical sources of change.

Owner or Equipment Vendor-Initiated Changes

Owner changes typically account for 88% of all equipment related change requests, and are typically initiated because of clinical staff requests. Many are based on vendor technology changes, user preference, or budget reductions. While largely unavoidable, these can be identified early, in the design or validation phase of planning, and can be managed to bring about positive change within the project.

Examples include:

- *A physician requests a specific piece of equipment based on their use preference*

- *The scope of work changes – for instance, converting additional rooms to ICU patient rooms, which would require increasing the number of ICU beds*

- *An upgrade to the equipment model or software becomes available*

- *Equipment is discontinued or recalled*

- *Equipment goes on backorder*

- *There is a delay with delivery or installation*

- *An organization's contract with the supplier changes*

- *An organization's equipment standards change*

The goal of the equipment planning team is to identify these types of changes (when possible) early in the project, at the validation stage, when the impact of the change can be contained to simply updating the equipment list—and to bring visibility of the change to all stakeholders. When any change occurs, a variety of stakeholders will need to approve the change, understand the financial and design implications, and ensure all team members downstream are aware of the change.

Programmatic and Construction Changes

Programmatic changes are modifications to the project scope, such as a reduction in the number of operating room suites or a change in clinical service offerings. These changes typically account for 8% of the total equipment-related change requests.

If there is a design change to the structure being planned, equipment may need to be reimagined to accommodate those changes. For instance, if a door is moved, the equipment that was configured around that door may need to be changed to work within the new design.

Other external factors, like new regulations being announced, also can drive construction changes that impact equipment. In California, for example, a structure might be reviewed for compliance with seismic regulations. This could impact the physical design of a building—which could trickle down to impact the equipment.

While typically unavoidable, changes driven by construction modifications need to be managed very closely by equipment planning teams, as these types of major changes can quickly trigger changes to the labor and schedules associated with the equipment. Again, it is critical that planning teams effectively communicate the change and implications to all stakeholders (including the design team, clinical team, contractors, program managers, finance team, subcontractors, and vendors).

Contractor-Initiated Changes to the Construction Project or Schedule

Contractor changes involve structural changes that impact the placement of medical equipment. State or local regulations may dictate structural changes. Contractor-initiated changes typically account for approximately 4% of the total equipment-related change requests.

# Common Causes of Change that Impact Equipment Planning

- Lack of coordination between the owner, general contractor, equipment planner and architect/MEP teams

- Specification sheets are not accurate

- Vendor specifications are out of date

- Field changes are not communicated to the equipment planner

- Schedule changes are not communicated to the equipment planner

- Equipment changes and updates are not communicated to the general contractor

- The general contractor is not using the latest equipment drawings

- The general contractor is looking at old specification sheets

- Subcontractors are not reviewing vendor equipment drawings

- Subcontractors are working from old drawings

- Equipment delivery schedule is not synced with construction schedule

- Client clinical user requests an equipment change due to preference

- Equipment is discontinued, or new equipment is introduced into market

- Equipment requires software updates to new versions that are not client-security approved

- Changes to regulations (i.e. OSHPD or state inspections)

- Acts of God, for instance: weather, accidents or pandemics

- A long project duration, which makes the project susceptible to the change in inventory, clinical needs, and equipment technology that occurs naturally over time

- An equipment planner is unaware of an organization's standards and specifies off-standard equipment

- Errors are introduced by the equipment planner, such as forgetting a piece of equipment or mistyping data (if a project is managed in a spreadsheet, vs. in an equipment planning platform like Attainia)

Shifting Priorities—and Implementing Change—Due to a Pandemic

The 2020 Coronavirus pandemic posed an unexpected question to many hospital executives and equipment planners: How can we shift our project plans to be more supportive of care during a pandemic?

Many organizations have answered this question by introducing change to their project plans. Some have chosen to equip single-patient rooms in a way that the rooms could rapidly make a transition to two-patient rooms if needed to rapidly increase capacity. Others have reduced the scale of other areas, like the physical therapy department, to reallocate that budget to a pandemic-supportive care investment.

In this case, embracing change—even with additional costs incurred—allowed these hospitals to be better equipped to respond to a pandemic and provide the best patient care possible.
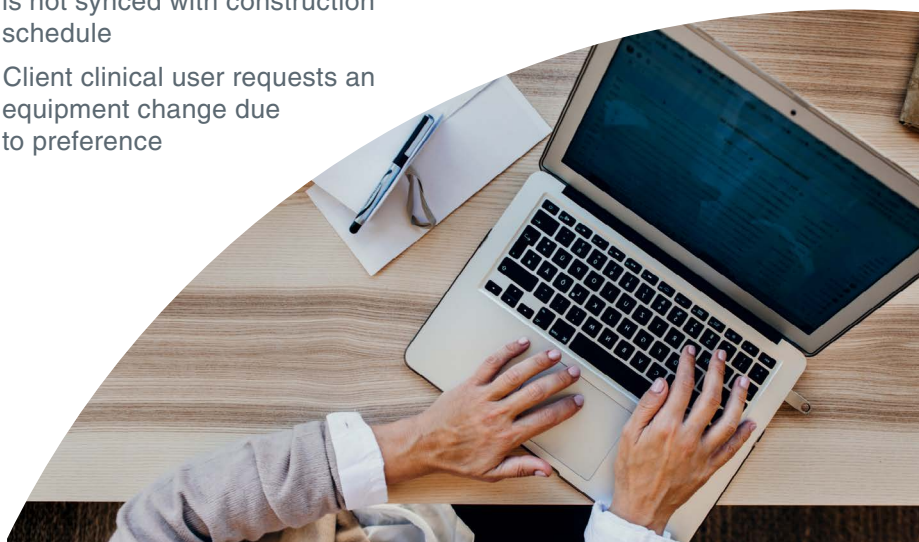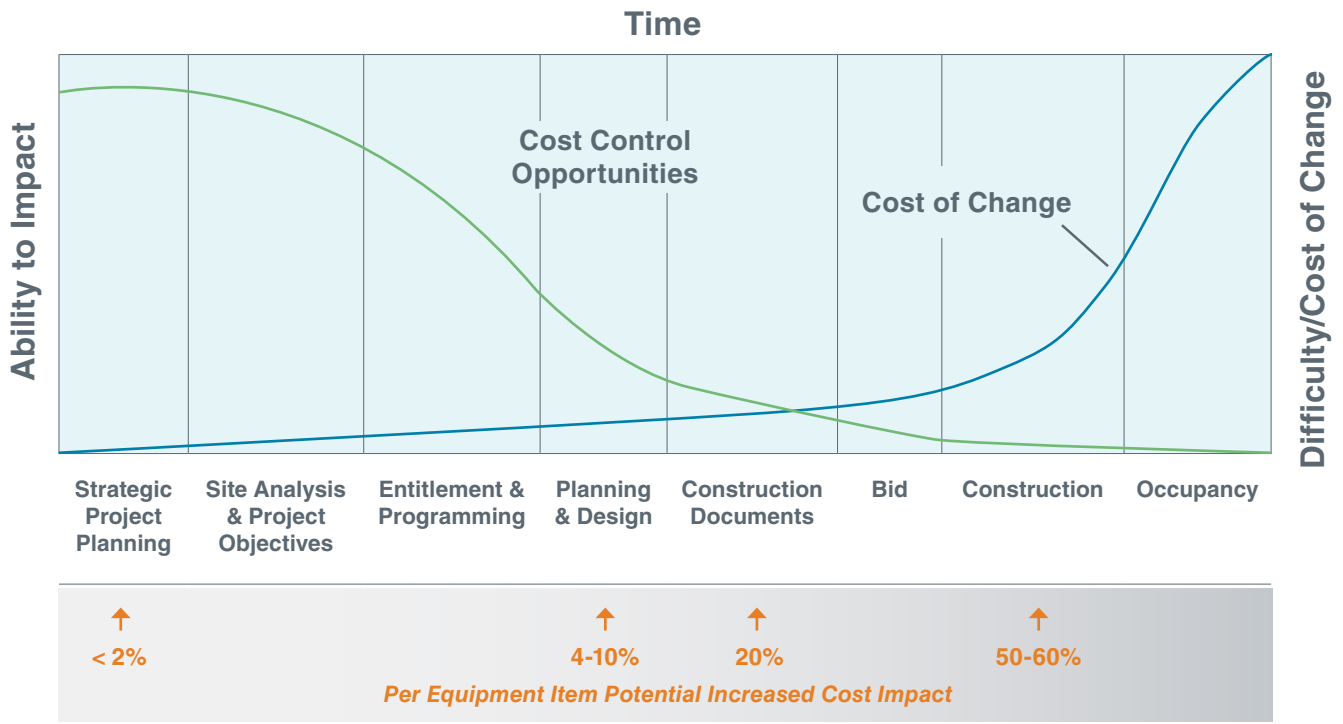
Cost Associated with Equipment Changes Add up Quickly

When a change order associated with medical equipment occurs, it can be difficult to assess the true cost of the change as the implications can be far and wide within a project. Sources of additional—and potentially avoidable—costs include:

- *Construction costs associated with any structural changes needed to accommodate equipment changes—such as a door needs to be removed to bring in a large piece of equipment.*

- *Labor costs to re-work a task that has already been completed. The cost of labor may also be higher if overtime is incurred.*

- *Equipment return fees, including shipping, freight and penalties, if you need to send back any already-purchased equipment.*

- *Materials, which may increase in cost as the project progresses due to inflation.*

- *Loss of revenue if delays in the schedule push back a project completion date.*

- *The cost and time associated with design changes, including updating drawings and coordinating labor, and equipment warehousing.*

- *Patient safety and satisfaction. If off-standard equipment is specified, purchased and installed, this introduces a risk for errors and delays in patient care due to clinical staff being unfamiliar with the equipment. Also, if off-standard equipment needs service, it may take the biomedical team longer to service the equipment or order parts they have not stocked, potentially increasing patient wait times.*

Mitigate Costs by Identifying Changes Early

Time

Ability to Impact

Difficulty/Cost of Change

Cost Control Opportunities

Cost of Change

| Strategic Project Planning | Site Analysis & Project Objectives | Entitlement & Programming | Planning & Design | Construction Documents | Bid | Construction | Occupancy |

↑ < 2%   ↑ 4-10%   ↑ 20%   ↑ 50-60%

Per Equipment Item Potential Increased Cost Impact

Identifying changes as early in the project as possible gives equipment planners the best possible chance to mitigate costs. The further into the project a team gets, the cost of change increases exponentially, as physical structures may need to be altered and purchased equipment may need to be moved or returned.

On a typical project, a project team should aim to identify 80% to 90% of potential changes during the project's design phases, which would mean the remaining 10% to 20% of changes would occur during the implementation and construction phases (procurement through installation). Changes implemented during the design phases would

typically have less of a financial impact to the project, as compared to those implemented during the construction phase.

All changes—regardless of the project stage— need to be tracked and managed by the equipment planner. 35% to 40% of equipment changes require consultative engagement by the equipment planners to determine viability/cost/schedule impact—and these changes represent the largest opportunity to generate a positive outcome to a project.

Source: Analysis completed by OneEQ equipment planning consultants, August 2020

The Importance of Process

Successfully managing change and mitigating risk to the project budget and/or timeline involves implementation of an effective change management process. It is vital that all of the project participants agree to and support the process. The key components of this process should minimally contain the following:

- A methodology to capture early detection of the change
- Change order request documentation
- An integrated system for change order communication
- A clear change order impact assessment process
- An effective change order tracking and control system
- A change dispute resolution process
- Expedient decision making and timely approval
- Equipment specifications and cost data transparency
- Approvals documented in writing (no verbal approvals)
- Accurate contingency dollars in the project budget

The Power of Data and Collaboration:
Attainia's Platform Delivers the Right Tools for Successful Change Management

PLAN·IT

Attainia's equipment planning platform, PLAN-IT, is the backbone that empowers planners to manage change— as well as equipment planning projects as a whole—accurately and efficiently. Featuring industry-leading tools including an integrated equipment catalog and virtual collaboration, PLAN-IT puts the power of real-time data at the planner's fingertips— whenever, and wherever, they need it.

Base Source of Truth for Project Details

Equipment planners use the Attainia platform as the central repository for all project details. When an equipment change happens, that change is documented in Attainia for future reference—describing when and why the change occurred.

Attainia's platform can integrate with many additional software systems— including change management tools, CMMS systems and more—but serves as the single source of truth for the medical equipment within a project. Hosting project data in a central repository where changes can be flagged helps significantly reduce errors that can be introduced when project details change—and need to be updated and communicated across the project.

Industry-Leading Medical Equipment Catalog

Attainia's integrated catalog of more than 71,000 products puts accurate and up-to-date equipment details in the hands of the equipment planner to leverage anytime, anywhere. This includes product specification sheets, list price and organization pricing (if applicable), the ability to capture allowances, and more.

The catalog also allows equipment planners to "window shop" by researching different options for equipment within a category. A comparison matrix tool allows planners to quickly compare models, features and specifications of similar equipment. This tool can aid equipment planners in guiding clinical staff to make "right-sized" choices for equipment, as opposed to requesting the newest or highest level model if it is not necessarily needed—which can provide for significant cost savings in some scenarios.

The catalog presents significant time-saving opportunities for equipment planners—bypassing the need for an equipment planner to spend hours researching and tracking down product information. And, importantly, the catalog greatly reduces the chance of introducing errors to the project by referencing inaccurate or out-of-date product documents.
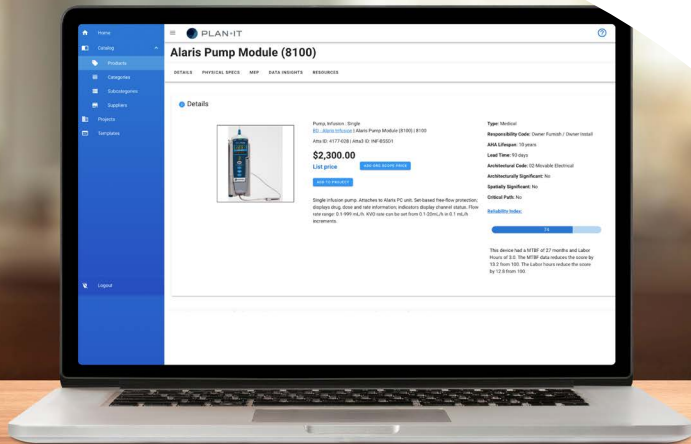
Room Templates

Customizable department and room templates available in PLAN-IT allow equipment planners to jump-start their planning with pre-built equipment lists—and avoid making mistakes like simply forgetting a piece of equipment, only to catch the oversight later in the project. These customizable templates can also be used to drive an organization's standards, which helps ensure the correct equipment make or model is specified whenever applicable.

Virtual Collaboration

When a change is identified, Attainia's planning platform empowers an equipment planner to share the message and change details quickly to all impacted teams and departments, both internal and external. All project stakeholders can log in and access real-time project details directly within the application for optimal project visibility. This reduces the chance that a team member is working off of an out-of-date spreadsheet or waiting for a change to be communicated via email.

Better Budgeting

Attainia's planning platform houses historical project data—including an ability to track variances, like freight and shipping costs associated with equipment—to help equipment planners build better project budgets right out of the gate, and even allocate for inflation and contingency dollars.

Customizable Project Structure

Attainia's PLAN-IT platform is customizable to fit the needs of each individual organization and project. Within the platform, equipment planners can identify and indicate existing equipment that is going to be reused. (Even when equipment isn't going to hit a project's budget, it still needs to be accounted for in the design.) Equipment planners can use PLAN-IT to build the structure and capture what is important, even if that changes from project to project within an organization.

Reporting

Attainia's PLAN-IT platform enables planners to generate custom reports—including data sheet reports, budget reports and room-by-room reports—to give project team members real-time visibility into project planning and budgeting. These reports can be configured into different formats and outputs to highlight the appropriate information to each specific audience, and put the right data in the hands of the right stakeholders. This empowers the planner to manage and communicate the equipment list and budget—and efficiently manage quality control of the equipment list—throughout the lifecycle of the project.

Skilled Equipment Planners + Attainia's Powerful Tools = Positive Change Outcomes

Successful change management in medical equipment planning requires knowledgeable and experienced planners who know how to leverage the right tools to quickly assess a change situation, and to manage it to the lowest possible impact to the project cost and schedule.

Here are some of the ways an equipment planner can leverage tools from Attainia's medical equipment planning platform to affect change management and help drive success within the project.

Assessing the Full Scope of the Change Impact

As soon as a change is identified in a project, an experienced equipment planner quickly gets to work to start a change order impact assessment. This is true whether the change is a request (like a physician preference for a different equipment model) or a mandate (such as a new regulation that must be adhered to). Armed with the right tools, like Attainia's PLAN-IT, an experienced planner can review project plans and equipment specifications to quickly assess the full scope of the change.

For instance, let's say a program change requires medical equipment that has already been planned to change locations, from large Room A to a smaller Room B. A skilled equipment planner could quickly lay out Room B and—by accessing PLAN-IT's integrated equipment catalog and all necessary product specification sheets—be able to quickly assess: Are all MEP requirements in place in the new room? Does any special venting need to be set up? Based on the equipment specifications, will the equipment still fit in Room B, or does a change need to be made? Skilled planners can often find significant cost and time savings in working ahead to identify and address any potential issues, rather than reacting while the change is in-flight—and while construction or equipment installation is taking place.

Communicating and Documenting Change

One of the most critical mistakes that can happen after a change is incurred is to leave out any part of the project team that needs to know about the change. Communication breakdown can have major ramifications later in the project. For example—early in the project, during the equipment validation stage, project stakeholders assess the cost of a physician's preference for a different MRI machine, and approve the purchase. However, the change is not communicated to alert the construction team and architect to widen the doorway to fit the new machine into the room. Suddenly, the project is absorbing additional labor and materials charges.

A skilled equipment planner knows the importance of tracking changes in a way that is universally available to the project. Armed with PLAN-IT, which provides a real-time source of truth, equipment planners can flag changes and have accurate documentation of when the change was made, and why the change was incurred.

Visibility to change is important, too. PLAN-IT's virtual, real-time collaboration platform allows project team members to view the project as a whole to understand why and when changes are introduced—and not simply address changes in a vacuum.

Advising Against Unnecessary Changes

There are circumstances when an equipment change is proposed within a project that would be expensive or risk project delays, without a strong return on investment. In these cases, an equipment planner can leverage data to help stakeholders understand the true cost of the change—and recommend against the change—while also identifying alternate, cost-effective options.

As an example, a physician attends a trade show, and learns about a new device that seems to provide higher quality outcomes. An equipment planner working in PLAN-IT could quickly access and compare product specification sheets via the integrated equipment catalog to assess: Does the new device require a different power source? Does the new device provide any enhancements or additional clinical care improvements? Is the effect on clinical care cost net-neutral? Posing these questions may help the project stakeholders decide against the change request, or provide insight into workable changes that would allow the change without major project time or budget impacts.

Identifying Change Opportunities that Can Save Money or Time

An equipment planner working in PLAN-IT has data at their fingertips to help identify opportunities for cost savings—including quick access to contracted and/or GPO pricing, and an organization's medical equipment standards. Having visibility into those details from a single source can simplify the equipment planning process and ensure the equipment planner is taking advantage of any discounted pricing available, rather than having to review multiple documents to synthesize the information and create a project plan.

Use Cases: 4 Ways Attainia's Platform has Powered Positive Outcomes in Change Management

These real-world examples show how equipment planners—backed by Attainia's industry-leading medical equipment planning tools—have driven significant cost savings when managing change.

1.

Identifying a Pre-Planning Opportunity

THE PLAN

The original design for a project called for two operating rooms. OR Room 1 will be equipped, and OR Room 2 will be shelled space for future use.

THE CHANGE

While planning for OR Room 1, the equipment planners determined that cost savings could be realized by pre-planning for equipment integration between the two ORs, and incorporating the appropriate integration backbone equipment as part of the completion of OR Room 1. To facilitate this change, the equipment planner documented the change, cost and specification impacts in the Attainia platform, which provided immediate transparency to the rest of the project team.

THE OUTCOME

The resulting change order increased the budget for the OR Room 1 equipment by $20K—but reduced the cost to equip OR Room 2 by $40K. This resulted in an overall equipment cost reduction of $20K.

2.

Identifying Cost Savings through Equipment Standards

THE PLAN

A project plan included six units of the latest version (C5) of an automated RX/supply distribution cabinet.

THE CHANGE

While reviewing previous project standards in the Attainia platform, the equipment planner identified that the organization was standardized on the previous C4 version of the cabinet. However, the hospital had planned a system-wide conversion to the C5 cabinets over a period of two years. The project team decided to equip the new project with the less-expensive C4 cabinets, which allowed the organization to blend those six units into their system-wide C5 conversion program. The Attainia platform supported the conversion to the C4 models by providing real-time access to the revised cost and specification implications. The modification was managed in the single source of truth—the Attainia platform—which ensured the necessary data was adjusted.

THE OUTCOME

By purchasing the standardized C4 RX/supply distribution cabinets, the equipment planner reduced the project cost by $80K—and avoided temporary IT infrastructure incompatibility issues.

3.

Navigating a Product Recall

THE PLAN

The project plan called for 450 IV pumps to be used by departments throughout a new facility.

THE CHANGE

During the procurement phase of the project, an FDA recall was issued for the specified model of the IV pump, which could have delayed availability and shipping past the project completion date. By accessing the Attainia catalog's product comparison feature, the project team quickly reviewed options for alternate IV pumps—including each product's specs, costs and lead time—and was able select a replacement model with similar capabilities.

THE OUTCOME

The new models were ordered in a matter of hours with no increase in project cost and no delays to the project schedule.

4.

Group Buy Discount Becomes Available

THE PLAN

The project equipment plan included multiple versions of imaging systems to be purchased from the same manufacturer. The budget for these systems was based on the group purchasing organization (GPO) contract pricing that was visible in the Attainia catalog.

THE CHANGE

Prior to issuing the final purchase order, the equipment planning team noticed in the Attainia catalog that the GPO announced a special "group buy" price discount. The equipment planner quickly assessed whether the project could accommodate the schedule implications of a group buy—and determined they could take advantage of this offer.

THE OUTCOME

Taking advantage of the group buy discount resulted in more than $1M in cost reductions for the equipment, in addition to enhanced warranty and service features.

PLAN•IT

Effective Change Management Is Within Reach

Positive change management starts with equipment planners who understand the nuances, the necessity, and the opportunities of change within a healthcare construction or renovation project, and who can bring the right tools to the project to manage change as effectively as possible. The outcomes of effective change management are abundant—mitigating unnecessary costs, minimizing project delays, and possibly even empowering teams to realize cost savings and improved clinical outcomes.

Are you ready to learn more about Attainia's medical equipment planning platform, PLAN-IT, and how Attainia's industry-leading tools can empower your teams through successful change? Reach out to *moreinfo@attainia.com*, or visit our website at *attainia.com* to request a customized demo.

OneEQ has been an enterprise user of Attainia's software for more than 10 years, and has leveraged Attainia's tools to plan more than 500 projects for more than 80 clients. Annually, OneEQ plans $500M to $1B in equipment for projects built and maintained in Attainia.