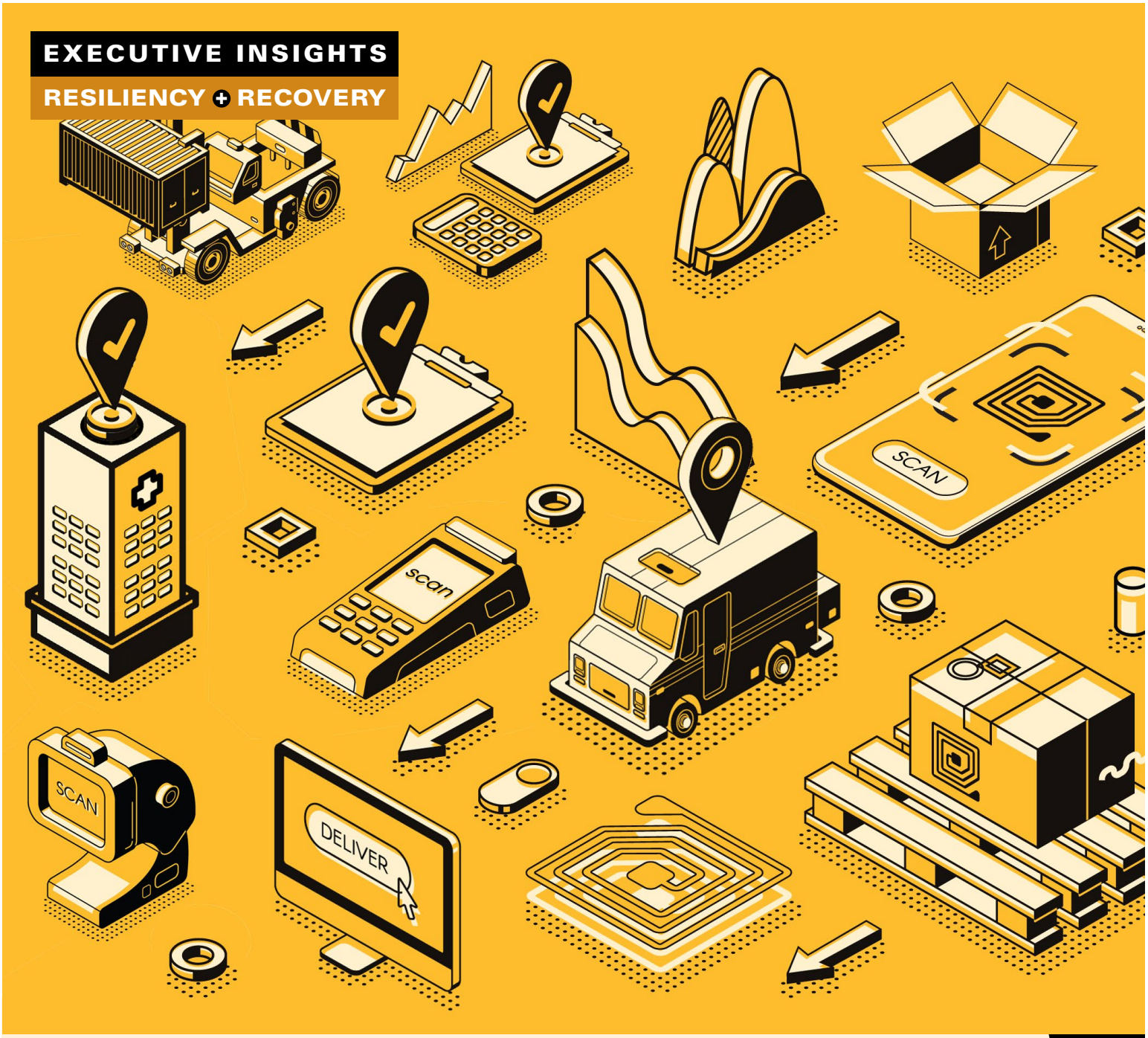
EXECUTIVE INSIGHTS

RESILIENCY + RECOVERY



REAL-TIME SUPPLY CHAIN STRATEGIES

Meeting financial, operational and quality demands in the health care supply chain

American Hospital Association™
Advancing Health in America

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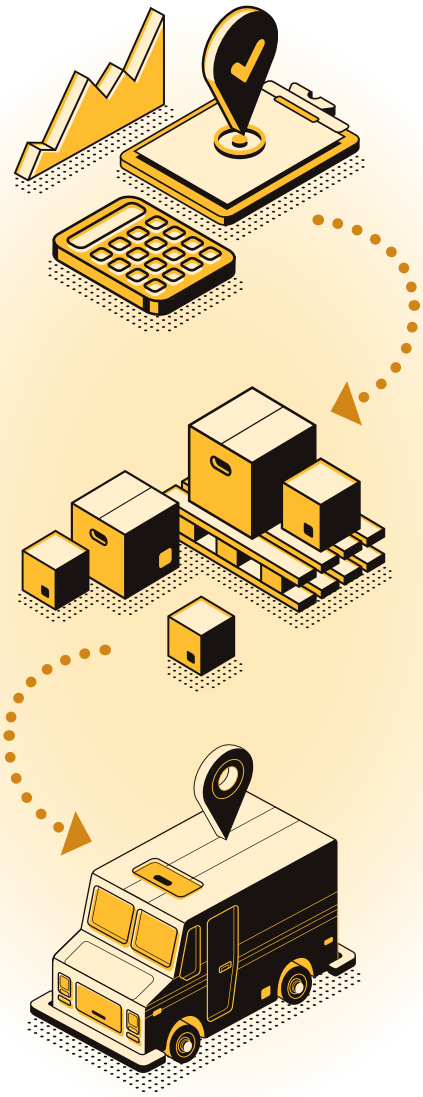
REAL-TIME SUPPLY CHAIN STRATEGIES

Meeting financial, operational and quality demands in the health care supply chain

Today, hospital and health system leaders are navigating workforce changes and tighter margins, along with more frequent supply shortages, product backlogs and price fluctuations. Health care organizations must be creative and resilient with their purchasing and supply chain-management strategies, leveraging tools and technologies that enable greater efficiencies and prevent disruption to hospital operations and patient care. As procedural volumes are on the upswing and clinical staff are struggling with unprecedented staffing concerns, health care leaders are seeking ways to extend technology-driven supply solutions into procedural areas. This executive dialogue explores how health care executives are optimizing supply chain processes to improve affordability while maintaining patient care excellence.

10 Ways to Build a More Resilient HEALTH CARE SUPPLY CHAIN MODEL



1 | Align supply chain space, services and staff to **support expansion** of clinical services and off-site freestanding centers.

2 | **Automate** day-to-day supply chain administrative processes using artificial intelligence software to free up valuable staff time and improve productivity.

3 | Design **better distribution programs** with systems and data for nonacute settings.

4 | Develop **cross-functional supply chain teams** that include nurses and physicians for product standards, contract reviews and scorecards to gain operational efficiencies.

5 | Expand a future opportunity for providers to **fulfill orders on behalf of patients** directly to their homes, B2B2C.

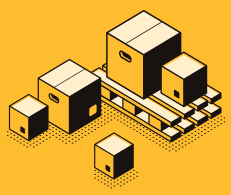
6 | Extend **better transparency** about availability, prices, ordering and substitutes to the B2B transactions that exist within the consumer space.

7 | Integrate and standardize enterprise resource planning and inventory management systems into a **single dashboard** for better decisions with streamlined visibility, data and reporting.

8 | Optimize and centrally manage inventory, distribution and associated management processes through **consolidated service centers** for all service lines.

9 | **Partner and negotiate** with distributors, suppliers and technology companies to make your distribution network and supply chain more resilient and achieve savings targets.

10 | Set goals and focus intentionally on **diversity, equity and inclusion** in the supply chain.



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MODERATOR *(Suzanna Hoppszallern, American Hospital Association):* **What are your health system's major supply chain operational challenges? What strategic changes and investments is your organization making to the configuration and operation of your supply chain to make it more agile and resilient?**

KEVIN GORDON *(Grady Health System):* Space is a challenge. Our health system is growing and we're adding new buildings and clinics. We're located in the basement, and there isn't an opportunity to expand that space for supply chain and support services. We're working on an off-site consolidated services center (CSC) and standardizing to be able to work with fewer external systems — looking at our enterprise resource planning (ERP) system and our inventory management systems. We're going down the path of partnering with technology to help us move our supply chain agenda forward.

ASHLEY WILSON *(Children's National Hospital):* We are having that space challenge as well. Our facility master plan is about expanding clinical services. What they're not considering is the support services space needed to grow with those expanding services. It's not just supply chain that's having these issues, but biomedical, laboratory and environmental services. Our footprint hasn't changed by even a square foot.

The concern is that if we don't do something now about planning, we won't be able to support those clinical teams in the future. I would be curious, Kevin, how you're escalating that issue.

GORDON: Going back to planning, I'm communicating our needs with our executive vice presidents, system chief financial officer, Anthony Saul, and chief strategy officer, Shannon Sale. During our rounding, I've taken our executive leaders through these areas and shown them firsthand why we need additional space. It's one thing to hear the request, but it's another thing to connect the detailed request with day-to-day operations.

I've even taken it one step further. My directors and I spent several hours with Larry Gellerstedt, the chairman of our board, and toured our supply chain. He wanted to understand the inner workings. I used that opportunity to talk about the CSC — how we can gather more square footage off-site to support the health system by centralizing mail, biomedical and clinical engineering, off-site pharmacy, potentially laboratory, and be able to warehouse our supplies for distribution.

We've been successful in inviting individuals to experience a day in the life of an area into which they normally don't venture.

BARBARA YOUNG *(AtlantiCare):* We have operated a free-standing warehouse for 30 years. As a result of COVID-19 and the post-COVID hangover that we're all experiencing, we have determined that we now need a larger warehouse or CSC. We have experienced sizeble growth in both our acute and subacute facilities and have outgrown our existing warehouse.

We are in the planning process of designing a new warehouse and are considering expanding services and creating a CSC. One of our bigger pain points is the recent shift in acute care surgical services to our ambulatory surgery centers (ASCs). Shortly before COVID-19, we constructed an outpatient orthopedic surgery center.

Prior to orthopedics cases moving out of the hospital, our ASCs offered procedures that were not supply intensive, and staff could handle the supply needs. The custom packs needed for orthopedic procedures, along with the implants and instrument trays needed for joint cases take up a tremendous amount of space. Accommodating the supply chain cycle for surgery centers is now being factored into the design.

A. WILSON: We just opened a surgery center, and it is challenging. We also have smaller clinics that are

farther than our trucks and distribution team can get to. We must think about relying on our distributors a little bit differently in setting up a model. Even so, it's not meeting the needs of those clinical areas that are far outside the hub of our warehouse and our main campus.

BILL KOPITKE *(Amazon Business):* Ashley, what would you like to see from your distributors or suppliers that you don't see now? How could they be helping more than they are today with the nonacute settings?

A. WILSON: We need a more reliable option for regular delivery and a better distribution program with systems and data for these smaller clinics as well as the big surgery centers because they are going through quite a bit of demand. Often, suppliers say, 'We can't fill a whole truck to get you a low unit of product to a clinic and the space.' They're buying things in bulk, but they have no space to keep it. We don't have supply chain people there at these locations to help the clinical team then work through it.

ED HISSCOCK *(Trinity Health):* We have facilities spread out all over the country. Where we have critical mass and a group of facilities within a geographic area, we have a CSC. We started that a couple of years before COVID-19. This year, we have been able to break even with the cost of that center and expect in the coming year to generate a profit. As you're working with your various planning groups and building out business plans, there are ways to generate profit from a service center. It gets at distributing physician preference items (PPI), especially when you're talking about surgery centers, which are full of PPI items, and focusing with your suppliers on taking waste out of the trade relationship.

A distribution center helps you take control and own the last mile, take on some of the inventory risks for negotiating with your suppliers. Because they cut down on their transportation fees, the freight costs, some of the inventory risks, there's remuneration for that in the form of an efficiency fee that helps you turn your CSC from a cost center to a revenue-generating center.

It all goes back to the trade relationships that we have with our suppliers, understanding where the opportunity is to reduce waste. Start the conversation with your suppliers by saying, 'Let's find some waste we can eliminate and share in that waste reduction.'

"As a result of COVID-19 and the post-COVID hangover that we're all experiencing, we have determined that we now need a larger warehouse or CSC. We have experienced sizable growth in both our acute and sub-acute facilities and have outgrown our existing warehouse."

— Barbara Young —
AtlantiCare

BOB TAYLOR *(RWJBarnabas Health):* We are not experiencing a lot of the space issues that others are experiencing, nor do we have a CSC. We did an assessment and determined that it would be a more costly option for us than aggressively partnering with a couple of distributors for both acute and nonacute locations. We have separated those, which has relieved us of the challenges of small orders and distance issues because we're leveraging the supplier's existing network rather than trying to replicate that with our own infrastructure. A consideration is to not shut down your entire warehouse but figure out alternative ways to bifurcate that business so that the business that makes sense could go through the CSC and then the rest could be sent by a common carrier. You don't necessarily have to be all things to all people for all modes of distribution.

The economics coming out of COVID-19 are stressing health systems. The pressure on cost reduction is where the focus is right now. We have bold savings targets for this year, and they're doubling next year. Our priorities are reducing costs and figuring out

how to support the organization to restore a level of favorable margin, fund capital and then growth.

At the same time, the organization is growing primarily in the nonacute space — physician practices, joint ventures and surgery centers. We have one of the largest physician practice networks in the country now with approximately 300 physician practices, and we're about to add another 97 practices.

MODERATOR: We've talked about both challenges and strategies. What are the top supply chain goals and objectives your organization wants to achieve? Are you on the path to achieving those goals?

TIMOTHY H. DORSEY *(Mercy Health Services):* As we think about economic challenges and space limitations, our largest end-to-end supply chain goals fall into three buckets. First and most important is our people with a heavier reliance on data and making good business decisions based on those data. We recognize the need to attract and retain top talent. We need to do a better job of retaining that tacit knowledge that lives within the organization today and inside the supply chain community.

Second, we have goals on diversity, equity and inclusion. Coming out of the pandemic and the supply chain challenges that continue today, diversity in your supply chain is important. Being an inner-city hospital in Baltimore, we're looking at the broader market and ensuring that diversity representation resides among our manufacturers and our procurement efforts.

The last goal is clinical engagement within the supply chain. Our economic goals and supply consolidation may help some of the space constraints by looking at the SKU (stock keeping unit) count and incorporating some basic Lean principles that we let fall by the wayside as we focused on risk mitigation and responding to COVID-19.

PAMELA BRYANT *(Parkland Health):* Being a public health system, our challenges are around space to an extent. During COVID-19, we ended up with an external distribution center that we have leveraged to cover not only our main campus but all our community sites as well. On campus in the lower-level basements, construction started recently to expand our storeroom. Our hospital was built in 2015 as a just-in-time type of facility. For us the just-in-time model has proven to be inefficient as we navigated the needs of the organization during the pandemic. Our goals are around improved efficiencies. We have a reduction goal, but our primary focus is on operational efficiencies by consolidation, standardization and driving out the silos.

"A distribution center helps you take control and own the last mile, take on some of the inventory risks for negotiating with your suppliers."

— Ed Hisscock —
Trinity Health

FLORENCIO GALLEGOS *(UNM Hospital):* Even though we've been acquiring space recently in different areas, that's the problem. They're in different places. There's off-site warehousing. The local or in-house storage areas are too small to handle the inbound freight. Being here in New Mexico and covering a large area, there aren't a lot of opportunities for inbound or outbound freight. We're looking at different distribution models, not just the standard distributors.

We're building a new tower for an additional 192 beds and a parking garage that will house the materials management space. With this addition of receiving, storage and distribution space, we took the opportunity to develop most of the first floor of the parking facility into a materials management supply chain space. It's going to include environmental

services, pharmacy distribution and inventory distribution for medical-surgical supplies. That will be a big help in trying to manage the new tower.

Part of our strategy is investing in and educating people to manage the supply chain. We provide in-house training, but there's a lack of health care supply chain professionals. We recently lost some longtime, front-line supply chain staff who handled the day-to-day operations with the item master files, ordering and tracking inventory. New Mexico's a tough state for recruiting to and there isn't a ready talent pool unless we go out of state — so much of this becomes a homegrown effort. Our major focus is on the community level with our local university and community college in developing programs to educate and train talent so that we can move them into some of these positions.

Internally, we've developed a cross-functional supply chain team that includes nurses and physicians. It was a struggle at first because most clinicians felt as though they didn't need to be involved in contracting because it's procurement. We did a lot of road shows and made it easy for them to participate by implementing an electronic system so that they could send their information through one portal. COVID-19 showed our clinical staff that their involvement has a huge impact. We focus on product standards, contracts, contract measurement and scorecards. Now, we have regular, interim and annual contract reviews addressing issues: How they are working for you? Are they giving you what you need? Is it coming in on time? We also conduct long-term reviews, especially for those that are coming up for renewal.

"The pressure on cost reduction is where the focus is right now. We have bold savings targets for this year, and they're doubling next year."

— Bob Taylor —
RWJBarnabas Health

MODERATOR: Where would you like more data and visibility into your supply chain's real-time performance? Are you satisfied with your ability to monitor risks and disruptions, and are you focusing on better management of the indirect and tail spend for efficiencies and savings?

KENT ROBERTS *(CaroMont Health):* Some of the gaps in our data are a result of the economy. The manufacturer and the vendor community are grappling with how they can continue to deal with higher expenses. They're trying to renegotiate contracts, minimize or reduce the number of their product lines and/or discontinuing products and reissuing products for the sake of increasing the cost. All that has a downstream effect on our data. Constant change in data doesn't have reliability built into our system.

We're building multiple hospitals and clinics. Our equipment planners are consistently dealing with the changes in capital and the model numbers. Our operating room also is changing and there are continued changes in implant contracts and whether our group purchasing organizations can hold pricing.

RICHARD KILLEEN *(Hackensack Meridian Health):* In response to a CEO commitment for diversity and inclusion, we've had to redefine our understanding of both diversity and inclusion. We've expanded that to include domestic and nearshore production, looking at social benefit. To do that, we've enhanced our PeopleSoft system to include and track our supplier diversity program. We've created dashboards that allow us to harvest from our major suppliers' Tier 2 spend on an automated basis. We're also requiring our major suppliers that have qualified product lines to dedicate a specific percentage to either domestic or nearshore production. The problem with that is that it's a pricing issue and a costing issue. But coming out of the pandemic, during the days of the $5 and $7 N95 masks, we recognize the need to

invest in domestic production for the future.

One of our biggest challenges is getting that diversity spend, the Tier 2 spend and automating it. As we bid and contract, we're using PeopleSoft modules for supplier portals and strategic sourcing, and we're tracking the results of that bidding with the full intent of social benefit. It's a new area for us and it's also new for a lot of vendors to be able to do it on an automated basis. We work with Diversity Inc. and several societies and firms that track the data. Now we're starting to put a consistent consolidated approach that's hardwired through PeopleSoft. That's been the challenge, tapping into data gaps in the industry.

MODERATOR: Is anybody partnering or looking to partner for technology solutions that automate processes and leverage AI in the supply chain area?

YOUNG: We're doing some things with AI in other areas of the organization. I believe the lack of GS1 standards provides an obstacle to our being able to utilize AI as an effective supply chain tool. It's a pain point for us when we try to source with alternative products effectively. If you aren't a seasoned buyer with years of experience you were really struggling during COVID-19. When you can't get one product, you have no idea how to find an acceptable alternative. The GS1 standard is essential for AI to work effectively as a sourcing tool.

DORSEY: The health care supply chain has not been as agile as other industries in terms of embracing those emerging technologies. We do that purposely because the decisions we make impact clinical outcomes and our patients. Contracting is an area where AI benefits could be exploited in the health care supply chain. Reviews of terms and conditions are time-consuming, and there are processes that can be implemented to make sure that we're working efficiently through those. AI has proven itself with machine learning to understand the language — what are the terms that we're looking for in the agreements, what does that mean in terms of risk, a financial analysis, and maybe the cost-benefit in the future?

A. WILSON: Our legal teams would love that. It would make the entire contracting process more efficient for both sides.

"First and most important is our people with a heavier reliance on data and making good business decisions based on those data. We recognize the need to attract and retain top talent."

—Tim Dorsey—
Mercy Health Services

KILLEEN: Last year, Hackensack Meridian Health won the HealthTrust Innovation Award for developing automation tools using new AI software that allowed the health system to free up team members from doing many manual tasks such as cleaning up open orders, increasing the efficiency of ordering from the inventory system, updating purchase orders with the correct pricing. This allowed them to focus on more important needs such as sourcing critical products for the supply chain.

We've partnered with GHX and PeopleSoft to pull out the day-to-day clerical grunt work that is burdening our valuable and knowledgeable staff. AI confirms orders and if the orders aren't confirmed within 48 hours, it pings customer service. We have anticipated delivery times. If the delivery times aren't met, AI pings the vendor. If the vendor says it's shipped, we get a proof of delivery electronically. Pricing is updated based on AI bouncing off the HealthTrust pricing structures. It reviews the tiers that we're eligible for. We download pricing based on exceptions that we determine through AI.

KOPITKE: From an Amazon perspective and other large technology companies, we have years invested in and are actively using machine learning (ML)

and AI within our supply chain. We see a great opportunity to partner with health systems and the supplier-distributor community to make the supply chains more efficient, simplifying contract administration and bringing comparison shopping to health care.

For example, if you've shopped on Amazon, you are shown content that is specifically relevant to you — your order history, items you recently browsed, and options with transparency around price, attributes and reviews are presented in a fashion that facilitates an easy and intuitive shopping experience. That same fast, streamlined and more satisfying customer service experience should be the norm in the B2B commercial space along with real-time inventory visibility, data on spending, stock-outs and delivery, business-specific controls and enterprise resource planning (ERP) system integrations.

VON GEORGE *(Saint Peter's Healthcare System):* With the pharmacy side of supply chain, we're a 340B hospital out here in New Brunswick, New Jersey. The challenge is not only about how you bill, but also the recurring challenge of shortages or product shifts and being able to get the patient the right product and seeing that quicker rather than having a pharmacy buyer and the pharmacist rely on intuition and background knowledge or doing a deep dive search with the vendors. That's an area where AI can help us see the right substitute within the formulary and have it queued up. As Bill said about shopping, I buy a book and Amazon ends up prompting me to buy two more books that are of similar interest to me. It could be the same for pharmacy and that would be huge win for patient safety and patient care.

"There is a huge future opportunity to place orders on behalf of patients to their homes. We refer to this as B2B2C. Given our infrastructure and quick turnaround from order to delivery, a lot of inventory can be moved out of the warehouses to free up cashflow and space."

— Bill Kopitke—
Amazon Business

MODERATOR: We've talked a lot about outpatient settings and surgery centers. Does anybody use or plan to use self-service procurement capabilities for end users or automated buying channels to streamline purchase of needed supplies and managed spend?

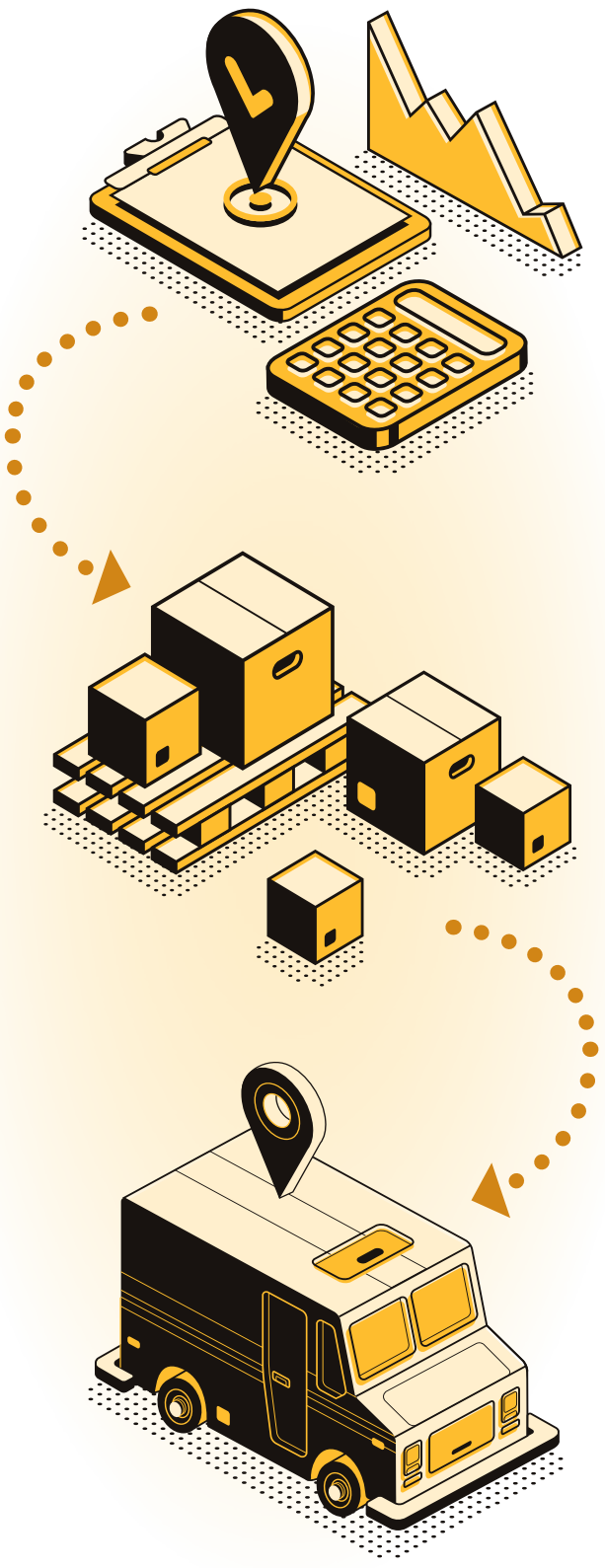
YOUNG: Our off-sites would love to use Amazon; however, it doesn't integrate into our information system which limits our use of Amazon. We are interested in learning more about how we can utilize Amazon in the continuum of care for our patients, especially in the subacute space.

KOPITKE: One of the hottest topics we're hearing is working toward being one health system between the acute and nonacute expansions. Amazon is a natural interface that people know, and doesn't require special training. Specific to your question, we are integrated with more than 100 ERPs to date. We often start with noncontracted spend to get that under management visibility and control, and then we move into medical supply buying on the nonacute side to integrate it with what the health systems need.

WILSON: At Children's, we are doing it. We use PeopleSoft here and the interface works. Our end users love the punch-out capability, but it has created a little bit of a challenge for us on the delivery side to then close that receipt and close the loop for the payment.

KOPITKE: There's a follow-up service where we do a three-way match by way of an example and reconciliation. We have a professional services team that will go in for free and help on any operational expectations.

There is a huge future opportunity to place orders



on behalf of patients to their homes. We refer to this as B2B2C. Given our infrastructure and quick turnaround from order to delivery, a lot of inventory can be moved out of the warehouses to free up cashflow and space.

There will also be a future related to virtual care with supply shipments to the home or on-site care unrelated to any sort of inventory management today. You still control what is ordered and purchased. That's going to be a big part of our future.

A. WILSON: That's a huge opportunity in pediatric hospitals. Parents are trying to access much of what we provide at the hospital and they can't. So, we are just buying it and giving it to them, which is an unsustainable model.

KRISTIN WILSON *(Captain James A. Lovell Federal Health Care Center):* During the height of the pandemic, it was a struggle for us to find different supply chain resources. Amazon Business was a great resource for us. We specify our delivery address as our warehouse and our docking station. With Amazon Business, we were able to put our purchase order into the actual site so when it was time for reconciliation, it was an easier process for those supplies.

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