

# Center for Innovation in Healthcare Logistics

## GSI Data Standards Adoption Survey

Progress toward Global Trade Item Numbers (GTINs)  
December 2011

Edward A. Pohl, Ph.D.  
Heather Nachtmann, Ph.D.



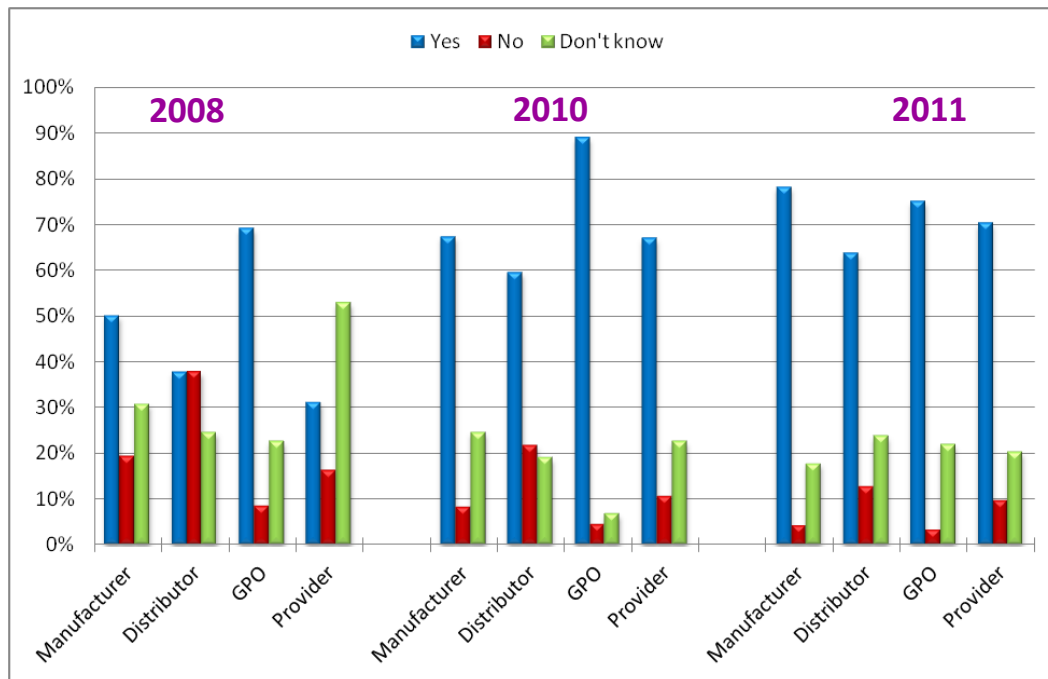
# Contents

- 2 Data Standards Adoption
- 3 Business Drivers for Data Standards
- 4 Reasons for Lack of Adoption of Data Standards
- 5 GLN Adoption Progress
- 6 GLN Adoption Barriers
- 8 GLN Contract Requirements
- 9 GTIN Adoption Progress
- 12 GTIN Sunrise Adoption Date Progress
- 15 GTIN Transaction Progress
- 16 GTIN Adoption Barriers
- 18 Response from Industry
- 19 Survey Overview

# Data Standards Adoption

Chart I.

Is your organization moving towards the adoption of a data standards system in the next five years?



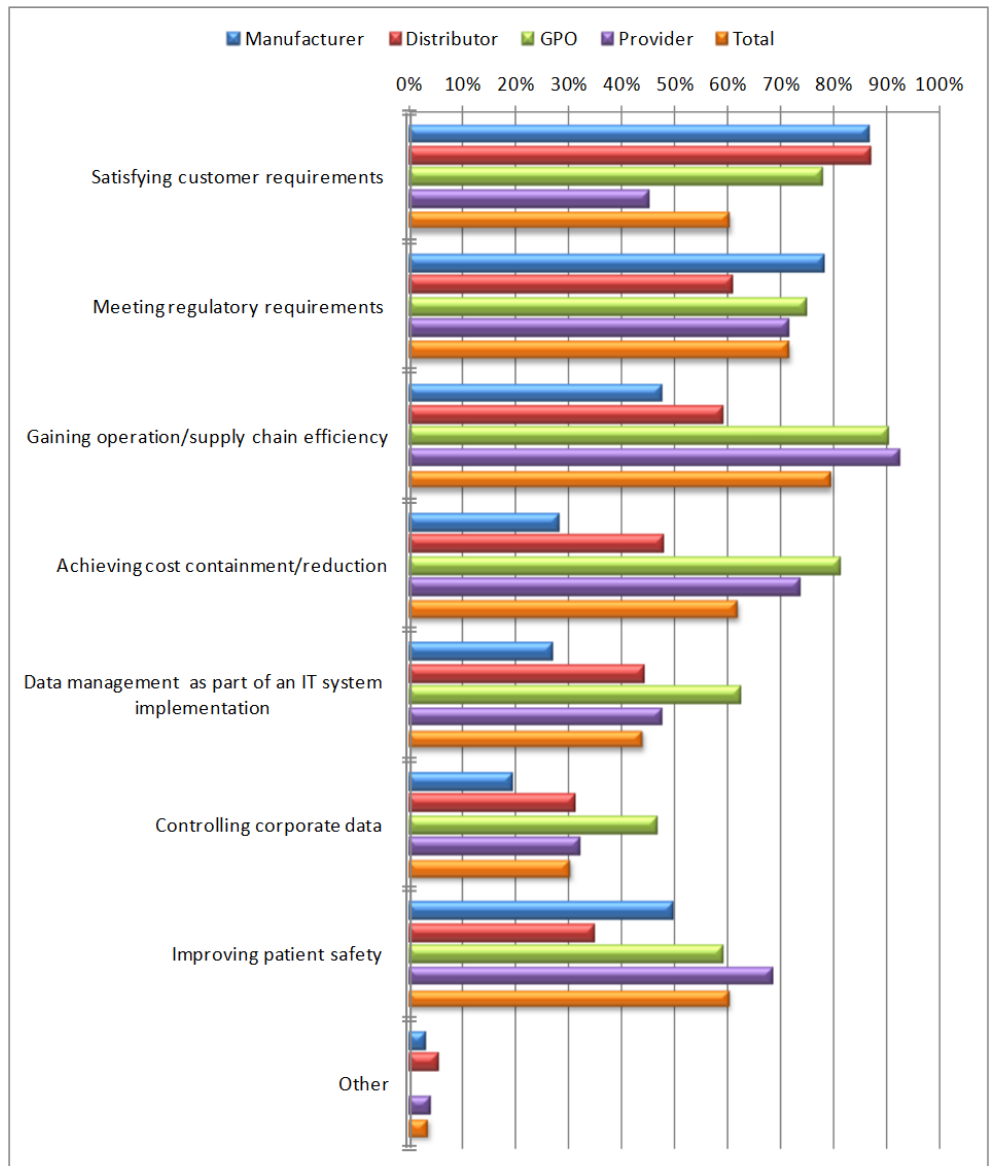
Sample size = 1268; Source: 2008, Nachtmann and Pohl  
 Sample size = 640; Source: 2010, Nachtmann and Pohl  
 Sample size = 475; Source: 2011, Nachtmann and Pohl

Chart I reveals that over 71% of the 2011 survey respondents are moving towards the adoption of a data standards system in the next five years, 99% of these are moving towards GS1 adoption. In 2010, 68% of respondents indicated that they were moving towards adoption of data standards. While the 2011 increase to 71% is not statistically different from the 68% in 2010, it does show that the industry's awareness has stayed the same or improved slightly. According to a November 2008 survey also conducted by Nachtmann and Pohl, only 35% of 2008 surveyed respondents were moving towards the adoption of a data standards system within the same time frame. Additionally, the study showed that nearly half of the 2008 respondents (48%) were unaware if their organization was moving toward the adoption of a data system. The current study indicates that only 18% of respondents are unaware of their organization's position regarding data standards adoption, which is indicative of the increased awareness of data standards within the healthcare industry.

# Supply Chain Data Standards Business Drivers

Of the 71% of 2011 respondents who indicated that they were moving toward adoption of data standards, 80% of them indicated that gaining operation/supply chain efficiency was one of the main business drivers for adopting data standards. Ninety three percent of provider respondents identified this as a key business driver for adopting data standards. Similarly, 91% of GPO respondents identified gaining operation/supply chain efficiency as a key business driver. Manufacturer and distributor respondents only identified this driver 48% and 59% respectively. Seventy two percent of all respondents identified meeting regulatory requirements as a business driver for adopting data standards. Manufacturer and distributor respondents identified satisfying customer requirements as the main business driver for their adoption of data standards. Finally, 69% of provider respondents identified improving patient safety as a key business driver for adopting data standards.

**Chart II.**  
**Identify the business drivers within your organization driving supply chain data standards adoption. Check all that apply:**

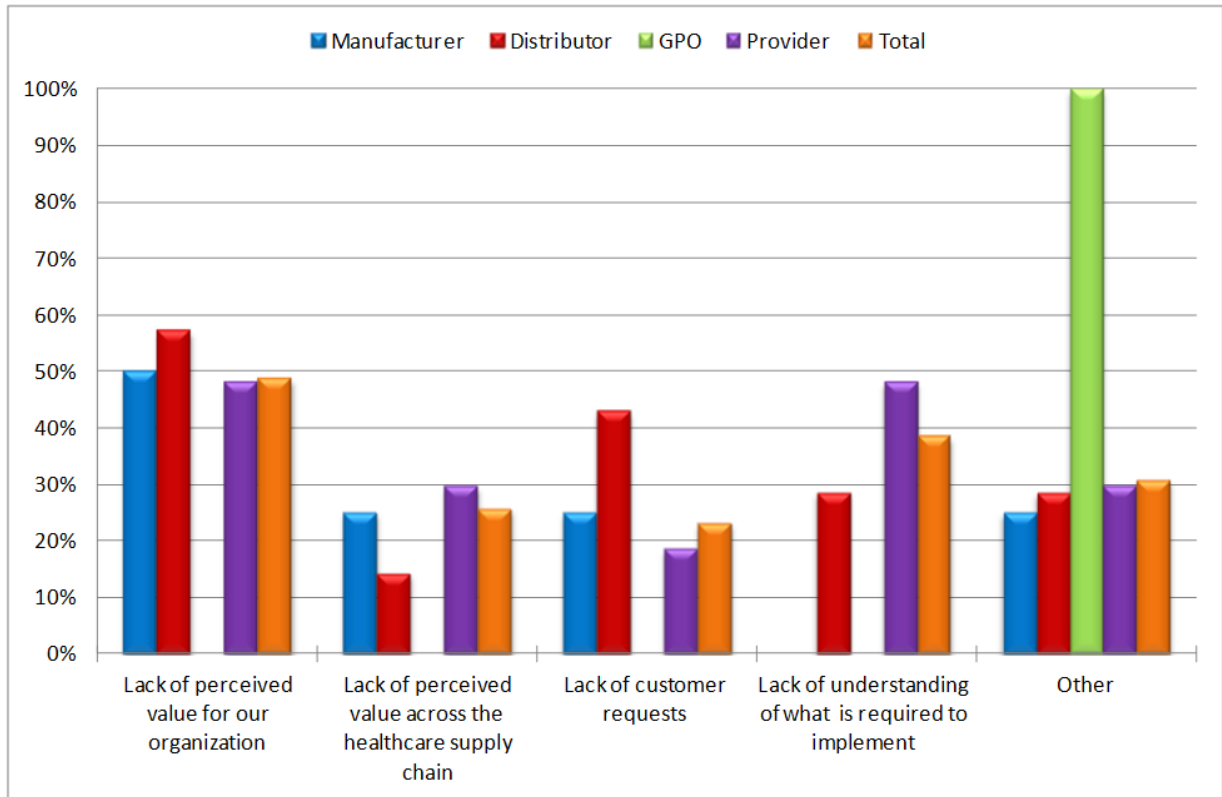


Sample size = 463; Source: 2011, Nachtmann and Pohl

# Reasons for Not Adopting Supply Chain Data Standards

Chart III.

Please indicate your organization's reason(s) for not adopting a supply chain data standard in your system. Check all that apply: [answered if responded 'not aware or no plans to implement' regarding movement towards data standards]

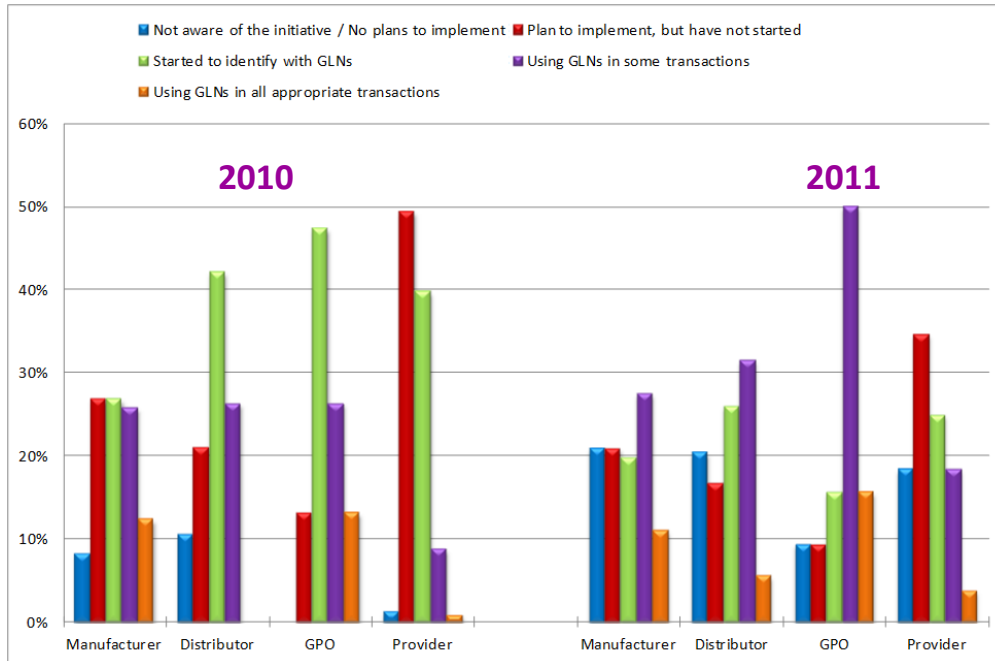


Sample size = 39; Source: 2011, Nachtmann and Pohl

Eight percent of the total respondents in 2011 report that their organization is not moving towards the adoption of a data standards system. Of those indicating a lack of movement toward adoption, 49% indicate that a major factor preventing adoption is a lack of perceived value for their organization. Similarly, 38% indicate that a major factor preventing adoption is a lack of understanding regarding what is required to implement data standards. Twenty three percent of respondents indicating a lack of movement towards adoption identify the lack of customer requests as a reason, especially among manufacturers and distributors. Additionally, 25% of these respondents identified a lack of perceived value of data standards adoption across the entire healthcare supply chain as a reason for lack of movement towards adoption.

# GLN Adoption Progress

**Chart IV.**  
**In terms of progress toward adoption of Global Location Numbers (GLNs), where is your organization now?**



Sample size = 393; Source: 2010, Nachtmann and Pohl  
 Sample size = 466; Source: 2011, Nachtmann and Pohl

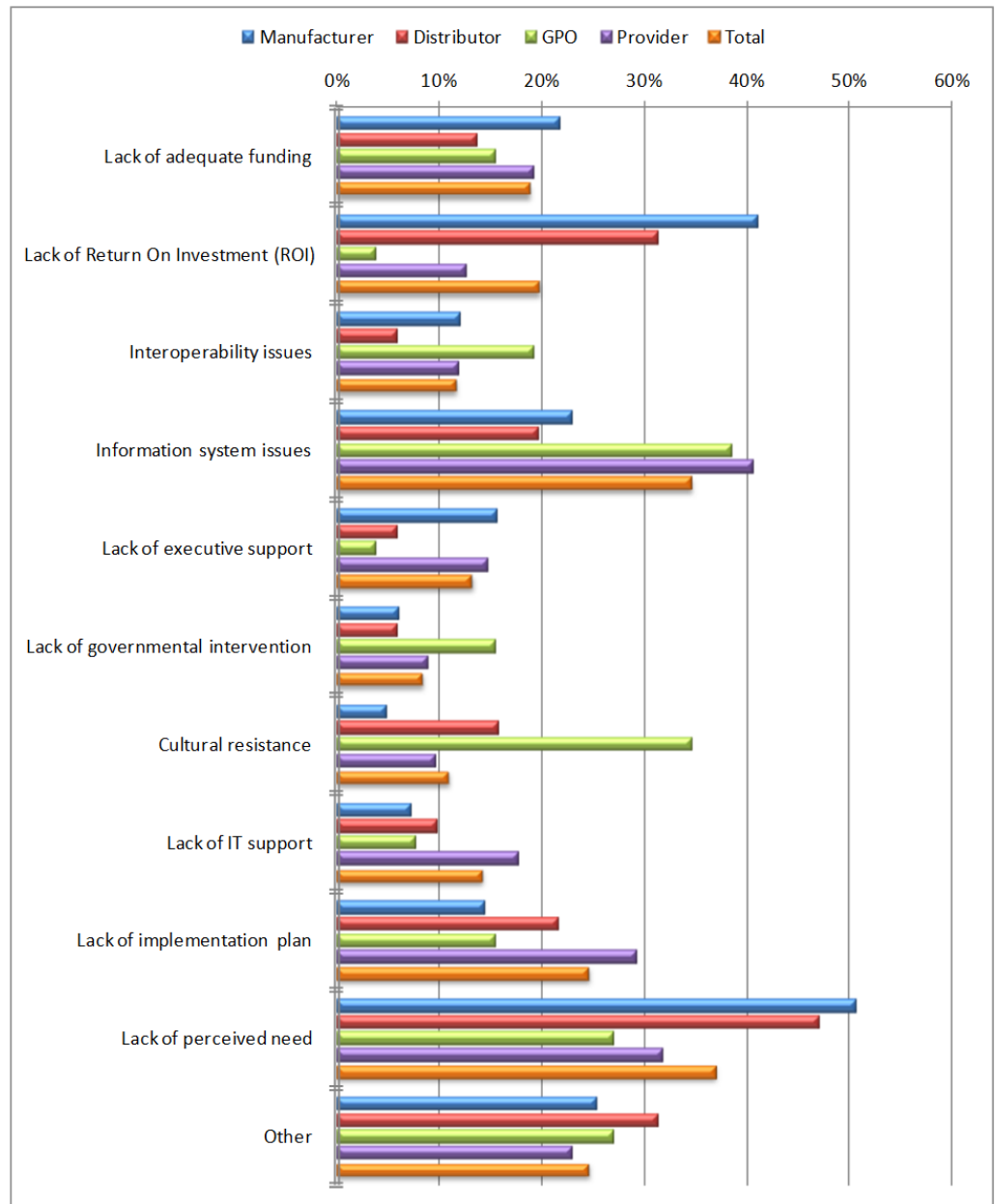
Of the 2011 respondents who stated they are moving towards the adoption of data standards, 30% indicated they are using Global Location Numbers (GLNs) in some or all of their transactions. This compares to just 21% of respondents indicating that they were using GLNs in some or all of their transactions in 2010. Providers have seen a significant increase in use of GLNs, going from 10% in 2010 to 22% in 2011. GPOs have substantially increased their use of GLNs in some or all appropriate transactions going from 39% in 2010 to 66% in 2011. Distributors have also seen an increase in use of GLNs, going from 26% using GLNs in some or all appropriate transactions in 2010 to 37% in 2011. As a group, providers still lag the other groups in terms of progress towards adoption. In 2011, 35% of the providers surveyed reported that they plan to implement but have not yet started and an additional 18% were unaware of the initiative or had no current plans to implement data standards in their organization.

# GLN Adoption Barriers

Chart V.

What is the main barrier to your organization adopting the Global Location Number (GLN) standard? Select the top 3 reasons:

Chart V displays 10 unique barriers to adopting the GLN standard. Of all respondents, the three most cited barriers were lack of perceived need (37%), information system issues (35%), and lack of an implementation plan (25%). In particular, providers and GPOs are aptly sensitive to information system issues at 41% and 38% respectively, while manufacturers and distributors struggle with lack of a perceived need at 51% and 31% respectively. Similarly, manufacturers (41%) and distributors (31%) identify lack of return on investment for adopting GLNs as a key barrier for their organizations.



Sample size = 431; Source: 2011, Nachtmann and Pohl

# GLN Adoption Barriers (Providers)

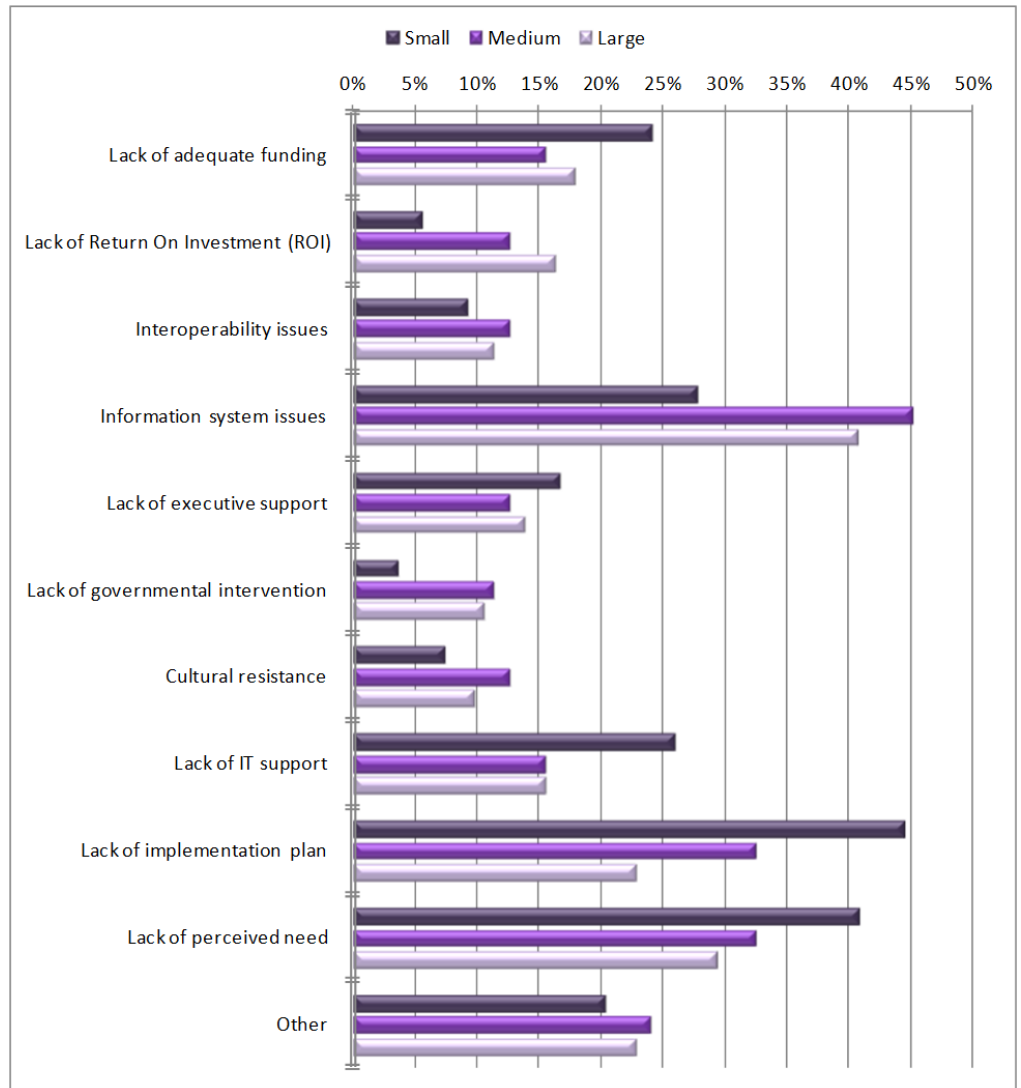
**Provider Sizes:**

- Small = 1-199 beds
- Medium = 200-499 beds
- Large = 500+ beds

Chart VI explores the impact hospital size has on provider responses to barriers associated with adopting GLNs. Small hospitals identify lack of an implementation plan (44%) and lack of perceived need (41%) as the main barriers followed by Information system issues (28%), lack of IT support (26%) and lack of adequate funding (24%). Not surprisingly, small hospitals appear to struggle with IT issues and funding for adopting and implementing GLNs. For medium hospitals, 45% of respondents identified information systems issues as a main barrier followed by 32% identifying lack of an implementation plan and lack of a perceived need. Large hospital respondents identified similar main barriers with 41% identifying information system issues and 29% identifying lack of a perceived need and 23% choosing lack of an implementation plan. The results indicate that most provider organizations have identified information system issues as a key barrier to transitioning to the GLN standard.

**Chart VI.**

**What is the main barrier to your organization adopting the Global Location Number (GLN) standard? Select the top 3 Reasons: [Provider by size]**

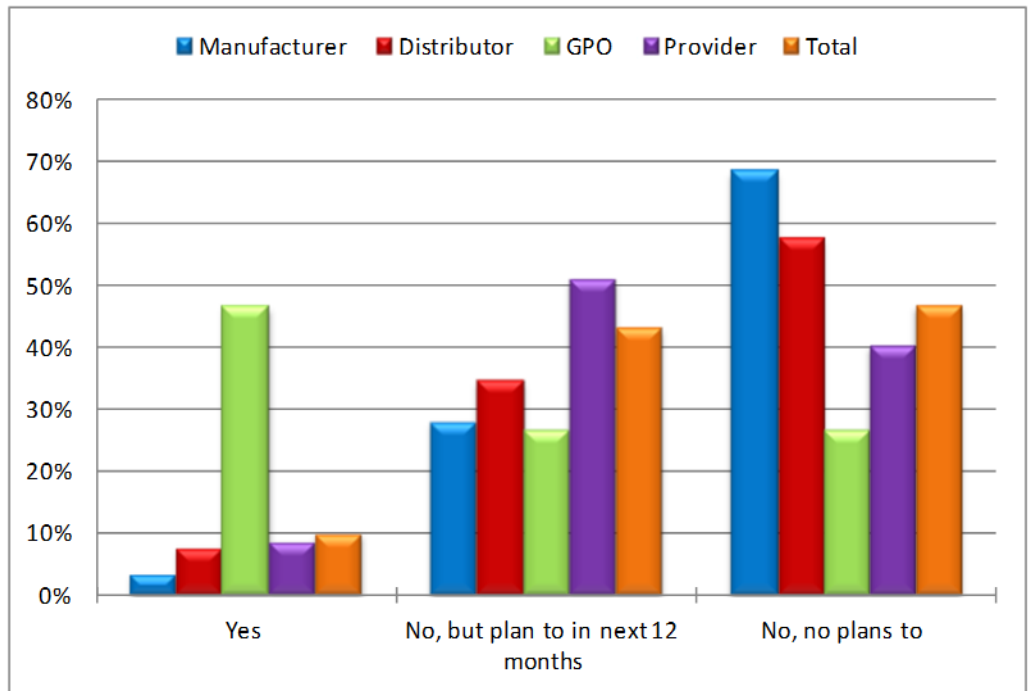


Sample size = 248; Source: 2011, Nachtmann and Pohl

# GLN Contract Requirements

Of the respondents who stated they are moving towards the adoption of GLN data standards, 10% currently require the use of GLNs in their contract terms and conditions. GPOs are leading the way with 47% of them requiring the use of GLNs in their contract terms and conditions. Forty three percent of respondents stated that they plan to require GLNs in their contract terms and conditions in the next 12 months. This includes 51% of providers planning to require GLNs in their contract terms and conditions within the next 12 months. This will help solidify the adoption and use of GLNs in the healthcare supply chain.

**Chart VII.**  
**Do you require GLNs in your contract terms and conditions?**

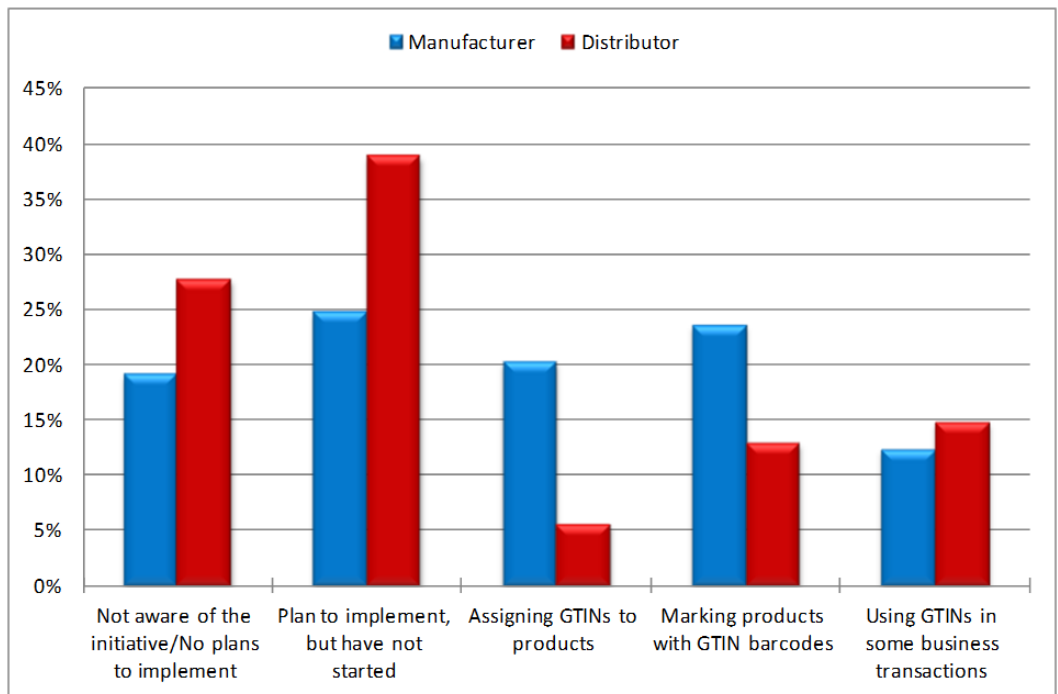


Sample size = 461; Source: 2011, Nachtmann and Pohl

# GTIN Adoption Progress (Manufacturers and Distributors)

Chart VIII displays manufacturer and distributor progress toward adoption of Global Trade Item Numbers (GTINs). Currently, 15% of distributors and 12% of manufacturers are using GTINs in some of their business transactions. Twenty-five percent of manufacturers plan to implement but have not started yet while 39% of distributors plan to implement but have not started yet. Assigning GTINs to products and marking products with GTIN bar codes is done at the manufacturer level. Twenty percent of manufacturers are currently assigning GTINs and 24% are already marking products with GTIN barcodes. Currently, 28% of distributors and 19% of manufacturers have indicated that they are unaware of the GTIN initiative or have no current plans to implement GTINs.

**Chart VIII.**  
**In terms of progress toward adoption of Global Trade Item Numbers (GTINs), where is your organization now?**

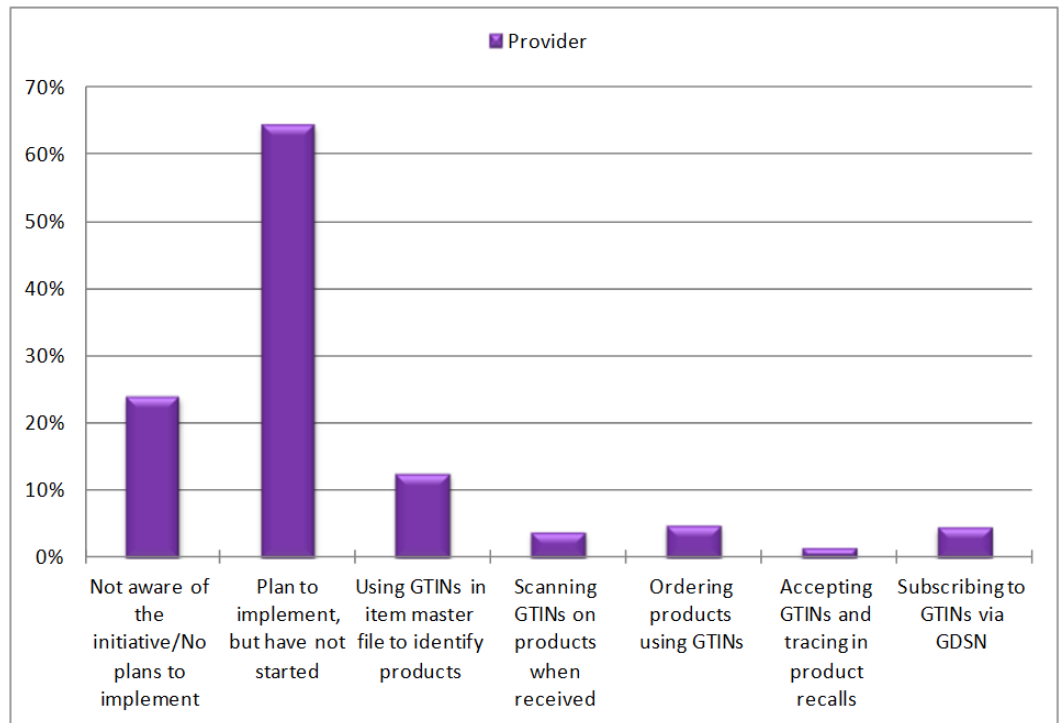


Sample size = 143; Source: 2011, Nachtmann and Pohl (89 Manufacturers, 54 Distributors)

# GTIN Adoption Progress (Providers)

Providers lag manufacturers and distributors with regard to adoption of GTINs. Sixty-four percent of all providers plan to implement but have not started with another 24% stating that they are unaware of the initiative or currently have no plans to implement. Some small progress has been made with 13% of providers surveyed indicating that they use GTINs in their item file to identify products. Currently only 5% of respondents are scanning GTINs on products when received and are subscribing to GTINs via the Global Data Synchronization Network (GDSN).

**Chart IX.**  
**In terms of progress toward adoption of Global Trade Item Numbers (GTINs), please identify your level of attainment. Check all that apply:**



Sample size = 287; Source: 2011, Nachtmann and Pohl

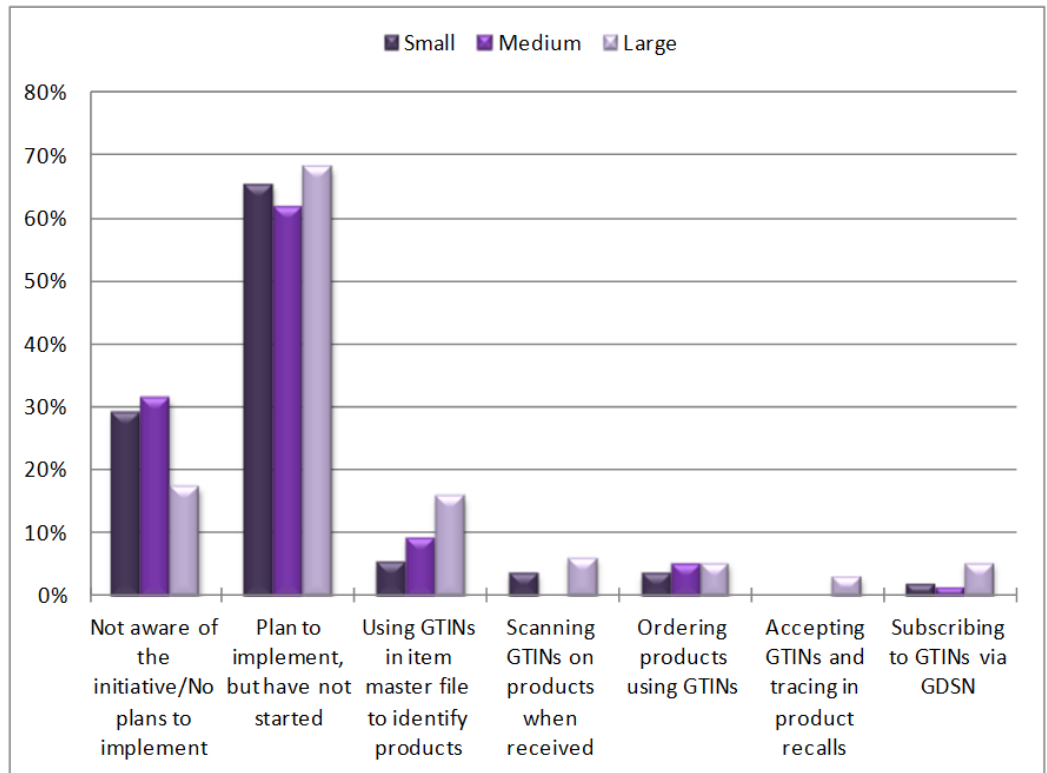
# GTIN Adoption Progress (Providers cont.)

Provider Sizes:  
 Small = 1-199 beds  
 Medium = 200-499 beds  
 Large = 500+ beds

Chart X displays the impact size has on adoption of GTINs for providers. As expected, larger hospitals are out in front in terms of adoption with 16% using GTINs in their item master file to identify products, whereas medium and small providers are at 9% and 5% respectively. More small (29%) and medium (32%) sized providers are not aware or have no current plans for implementation of GTINs while only 17% of large providers fell into this category.

Chart X.

In terms of progress toward adoption of Global Trade Item Numbers (GTINs), please identify your level of attainment. Check all that apply: [Provider by size]

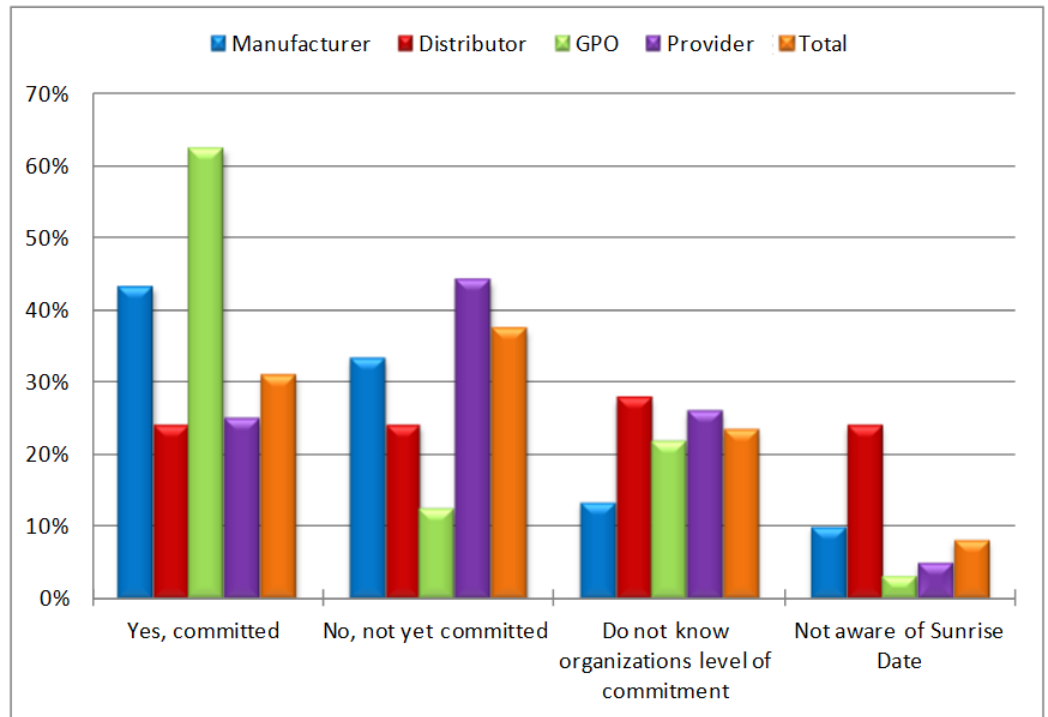


Sample size = 263; Source: 2011, Nachtmann and Pohl

# GTIN Sunrise Adoption Date Progress

Thirty one percent of the respondents have indicated that their organization is committed to meeting the December 31, 2012 GTIN sunrise date. GPO and manufacturer respondents are leading the way with 63% and 43% committed respectively. Forty four percent of providers have indicated that their organizations are not yet committed with another 26% of providers unsure of their organization's commitment. Whereas, at the time of the survey, 69% of all respondents have indicated a lack of commitment to the 2012 GTIN sunrise date.

**Chart XI.**  
**Is your organization committed to meeting the GTIN Sunrise Date (December 31, 2012)?**

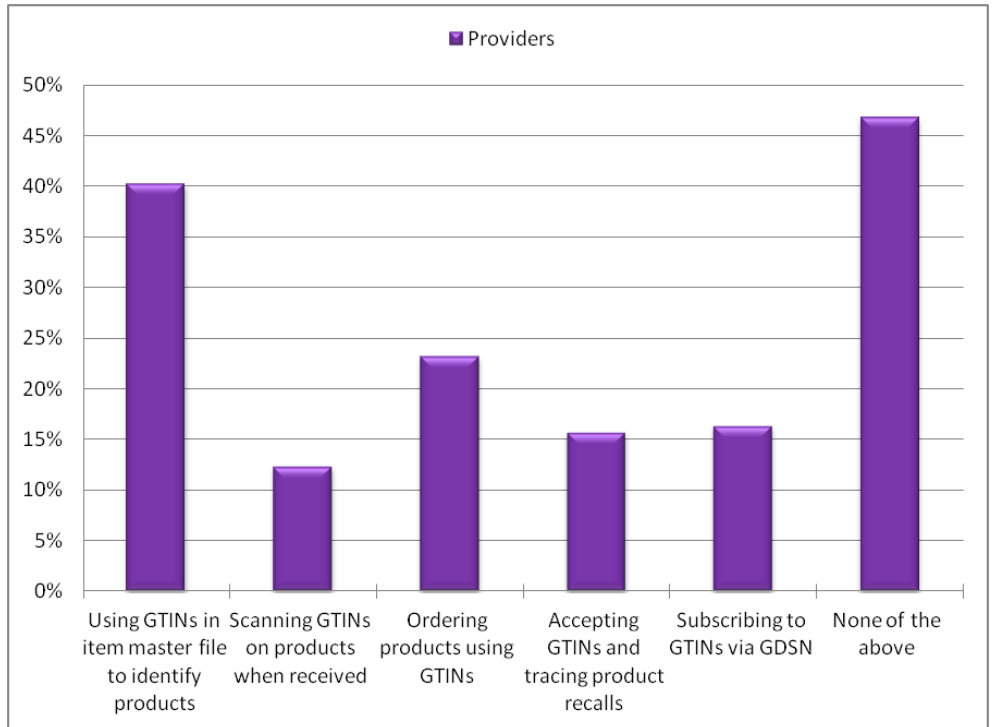


Sample size = 461; Source: 2011, Nachtmann and Pohl

# GTIN Provider Sunrise Adoption Progress

Forty percent of provider organizations anticipate that their organizations will be using GTINs in their item master files to identify products by December 31, 2012. Twenty-three percent of providers anticipate that their organizations will be ordering products using GTINs and 16% of providers believe their organizations will be accepting GTINs, tracing product recalls as well as subscribing to GTINs via the GDSN. Currently, 47% of providers have indicated their organizations will not be using GTINs on the December 31, 2012 GTIN sunrise date. This may suggest that there are opportunities for the professional societies to assist them in overcoming some of their barriers associated with adopting GTINs.

**Chart XII.**  
**Where will your organization be on the GTIN Sunrise Date (December 31, 2012), in terms of progress toward adoption of Global Trade Item Numbers (GTINs)? Check all that apply:**



Sample size = 276; Source: 2011, Nachtmann and Pohl

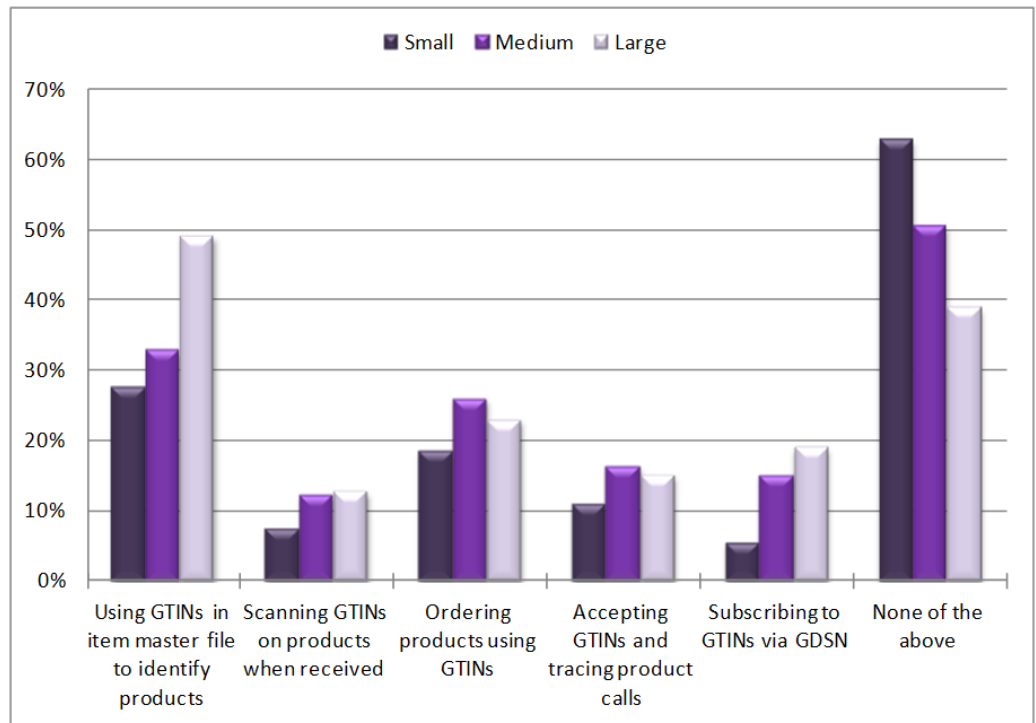
# GTIN Provider Sunrise Adoption Progress (cont.)

Provider Sizes:  
 Small = 1-199 beds  
 Medium = 200-499 beds  
 Large = 500+ beds

As expected, large and medium sized providers are moving ahead with adoption while small providers are lagging behind. Sixty-three percent of small providers will not begin using GTINs by December 31, 2012. While 39% of large providers and 51% of medium sized providers have indicated that their organizations will not be using GTINs by the sunrise date.

Chart XIII.

**Where will your organization be on the GTIN Sunrise Date (December 31, 2012), in terms of progress toward adoption of Global Trade Item Numbers (GTINs)? Check all that apply: [Provider by size]**



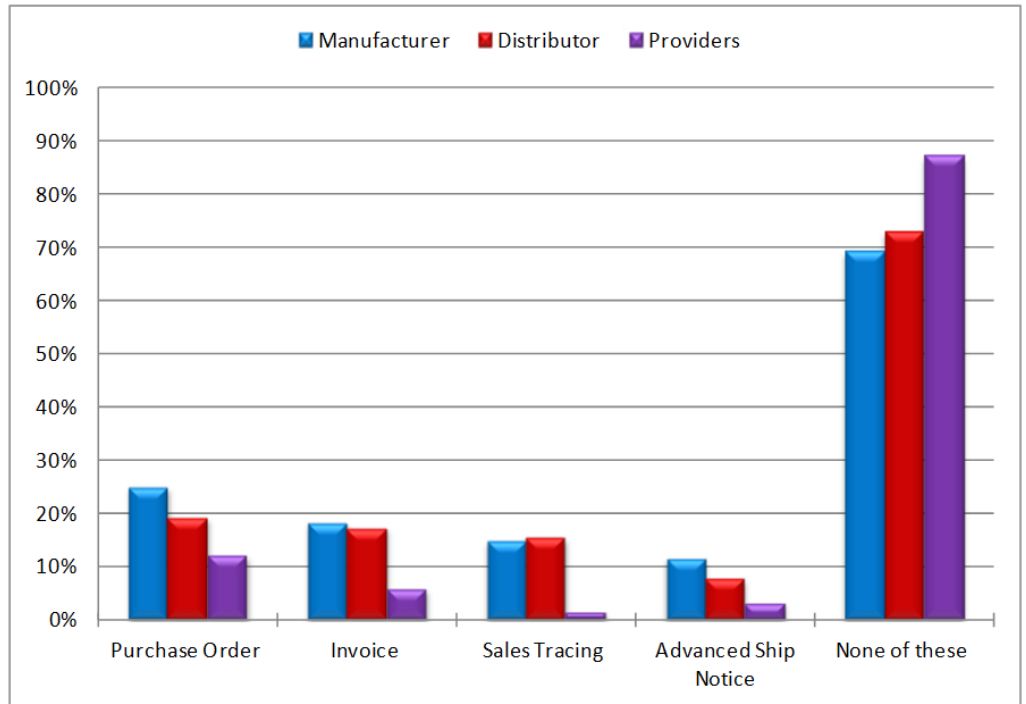
Sample size = 253; Source: 2011, Nachtmann and Pohl

# GTIN Transaction Progress

Currently, the majority (81%) of survey respondents are not using GTINs in their organizational transactions. Specifically, 87% of providers, 73% of distributors, and 69% of manufacturers are not using GTINs in their organizations transactions. Of those organizations that are using GTINS to transact, 16% are using them in purchase orders, 10% in invoices, 6% for sales tracing and 5% for advanced ship notices.

Chart XIV.

Please indicate the current use of GTINs in the transactions your organization engages in. Check all that apply:



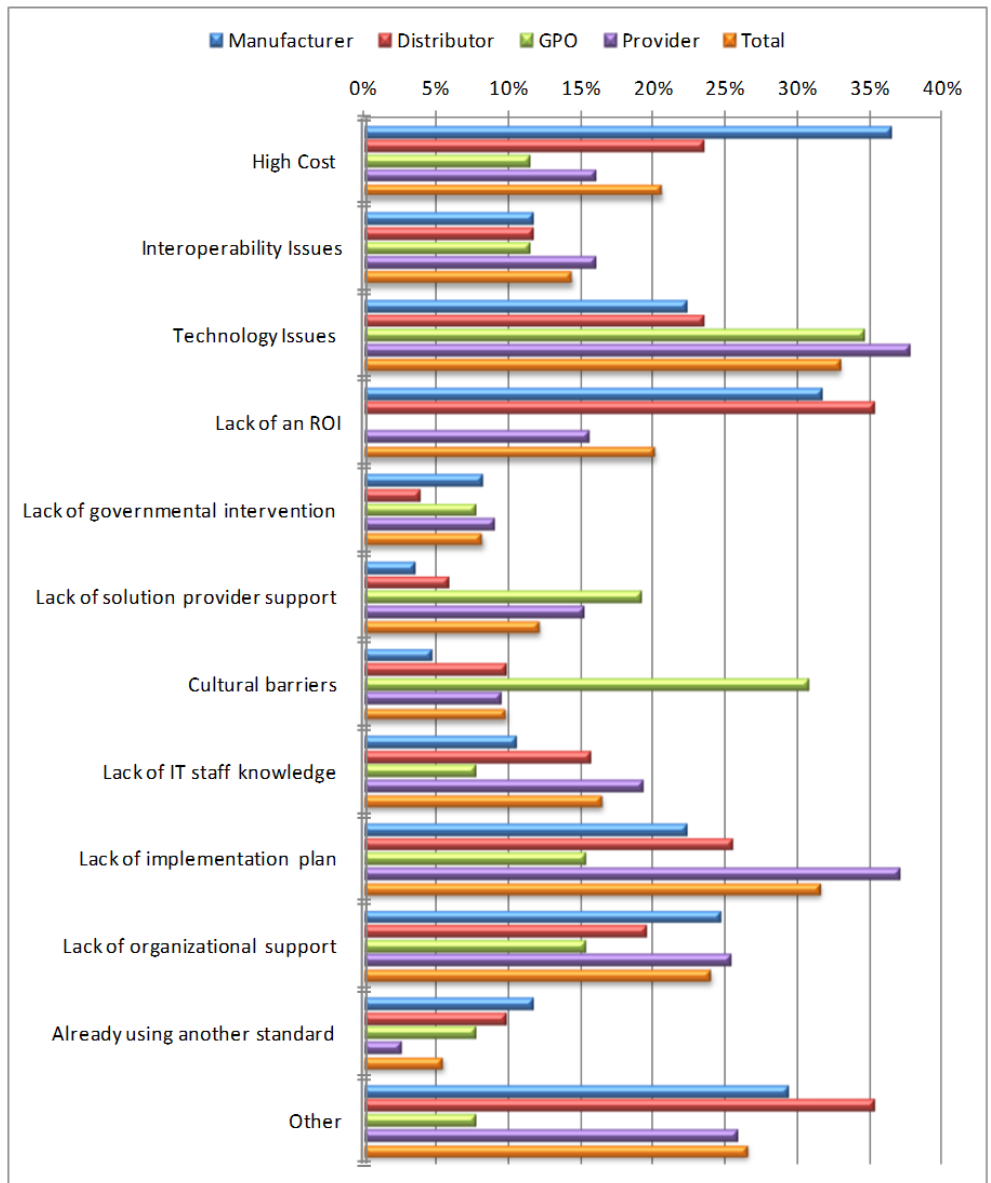
Sample size = 422; Source: 2011, Nachtmann and Pohl

# GTIN Adoption Barriers

Regarding barriers to adopting GTINs within the organizations of all respondents, the five most frequently cited barriers were technology issues (33%), lack of implementation plans (32%), lack of organizational support (24%), high cost (21%) and lack of a return on investment (20%). For manufacturers, high cost (36%) and lack of a return on investment (32%) are the biggest barriers. Similarly, distributors identify lack of a return on investment (35%), lack of an implementation plan (25%), high cost (24%), and technology issues as their most frequently cited barriers. Providers identify technology issues (38%), lack of implementation plans (37%), and lack of organizational support (25%) as their main barriers. This is consistent with the barriers identified by providers for GLNs. Interestingly, GPOs identify technology issues (35%) and cultural barriers as their main barriers. GPOs, in their role as the middleman between manufacturers/distributors and providers have identified cultural barriers between the organizations as an impediment to progress with regard to adopting GTINs. Additional GTIN adoption barriers are shown in Chart XV.

Chart XV.

**What is the main barrier to your organization adopting the Global Trade Item Number (GTIN) standard? Select the top 3 reasons:**



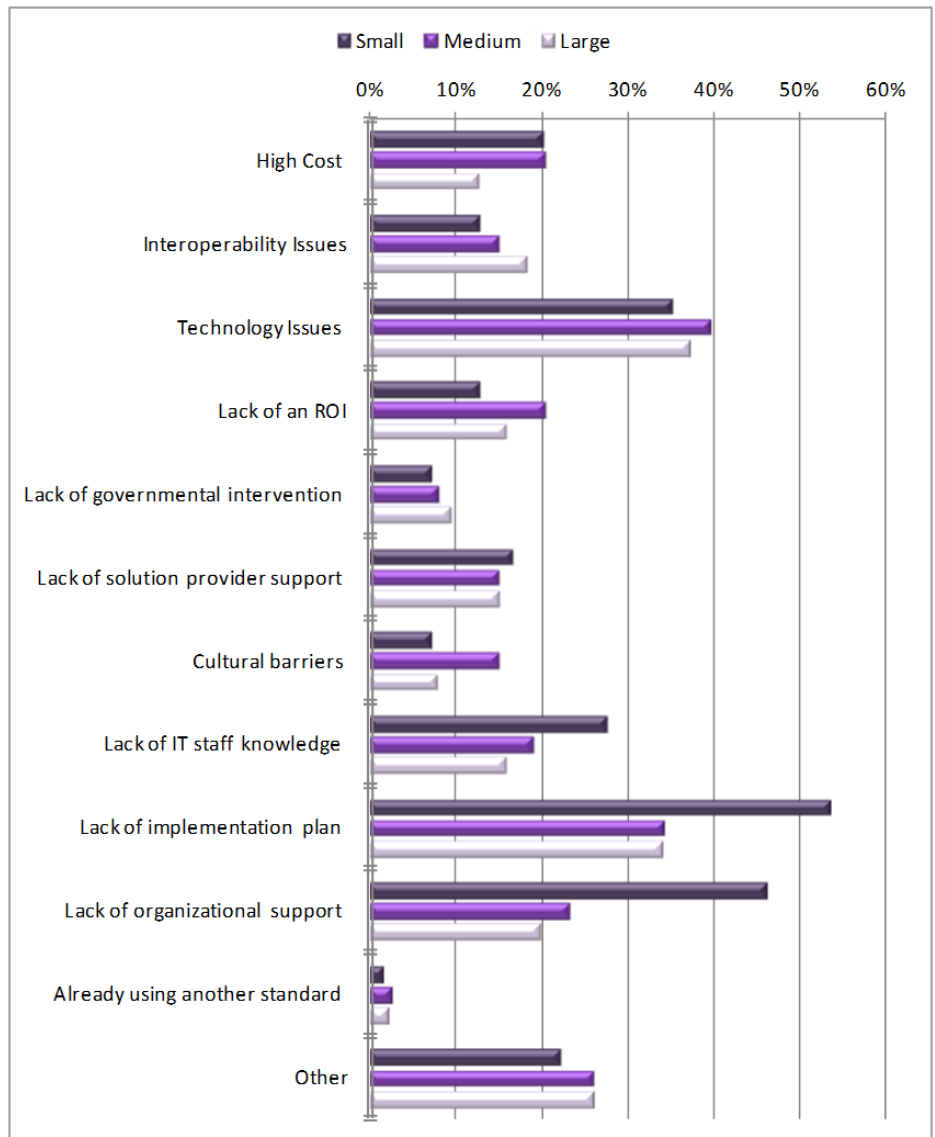
Sample size = 437; Source: 2011, Nachtmann and Pohl

# GTIN Adoption Barriers (Providers)

Provider Sizes:  
 Small = 1-199 beds  
 Medium = 200-499 beds  
 Large = 500+ beds

Similar to what was observed with GLN adoption, provider organizational size appears to have a slight impact on the type and frequency of barriers encountered for GTIN adoption. Specifically, small providers identified lack of implementation plans (54%), lack of organizational support (46%) and technology issues as their main barriers to adoption. Medium providers identify technology issues (40%), lack of implementation plans (34%) and lack of organizational support (23%) as their top barriers. Finally, large provider organizations identified technology issues (37%), lack of implementation plans (34%), and lack of organizational support (20%) as their main barriers to adoption. As expected, smaller organizations have a more difficult time gaining organizational support for GTIN adoption, and like medium sized providers, 20% of small providers identified high cost as a barrier. Based on these responses it is not surprising to see the larger provider organizations leading the way with implementation of GTINs.

**Chart XVI.**  
**What is the main barrier to your organization adopting the Global Trade Item Number (GTIN) standard? Select the top 3 reasons: [Provider by size]**



Sample size = 253; Source: 2011, Nachtmann and Pohl

## Industry Responds

*Some of the key conclusions in the 2011 survey are that “71% of the 2011 survey respondents are moving toward adoption of a data standards system in the next five years, 99% of these are moving toward GSI adoption” and that “8% of the total respondents in 2011 report that their organization is not moving towards the adoption of a data standards system”, meaning that 92% of the survey respondents are moving towards implementing data standards. Over the years that we have been working on this initiative, these conclusions from the 2011 survey represent the largest demonstration of “critical mass” that we have ever seen. I get asked frequently by suppliers if their efforts toward implementing GSI standards are “going to stick”. Will GSI be the set of data standards that healthcare is going to use? This survey answers that question in a very affirmative manner.*

Dennis Byer

Senior Director of Industry Standards for Novation and current Chair of CHoS

*SMI realizes that industry-wide change of this magnitude across all industry segments is not easy, so we are pleased to see the increasing progress. Supply chain professionals should be applauded for their ongoing efforts to break down barriers to data standards implementation, especially during the most challenging reform period for our industry.*

Dennis P. Orthman

Senior Director

Strategic Marketplace Initiative (SMI)

*The progress we are seeing in the healthcare industry's implementation of GSI standards is encouraging. Manufacturers and providers are recognizing the value of standards from those that implemented early, and are applying lessons learned to their own integration efforts. As having reliable location and product identification is important for patient safety, and remains a key tenant for healthcare regulation, there is no better time than now for healthcare to complete its transition to using a consistent, global set of supply chain standards.*

Gay Whitney

Senior Vice President of Industry Engagement

GSI US

# Survey Overview

## Respondents

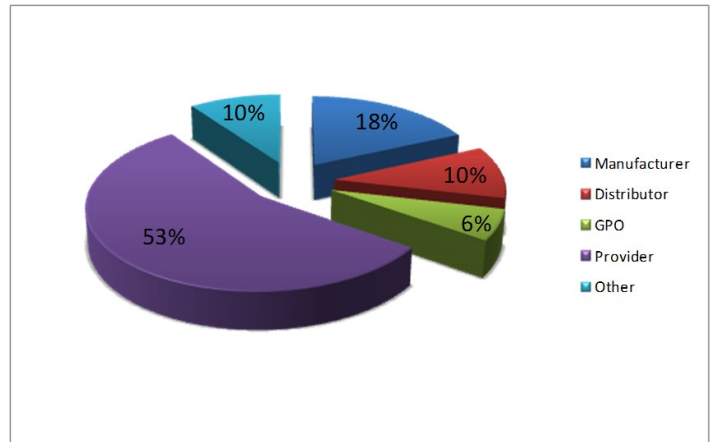
All data presented in this report was gathered in Fall 2011 through an online survey completed by 514 healthcare supply chain professionals. Over half of respondents work for a healthcare provider with the balance made up of manufacturers, group purchasing organizations, distributors and other healthcare supply chain organizations such as consulting. The vast majority of respondents hold manager-level and above positions within their organizations, with almost fifty executive respondents.

## Participating Organizations

This research was sponsored jointly by the Healthcare Industry Supply Chain Institute ([www.hisci-net.org](http://www.hisci-net.org)) and the Healthcare Supply Chain Association (formerly the Health Industry Group Purchasing Association) ([www.supplychainassociation.org](http://www.supplychainassociation.org)), with support from the Association for Healthcare Resource & Materials Management of the *American Hospital Association* ([www.ahrmm.org](http://www.ahrmm.org)), the Committee for Healthcare e-Standards (CHeS), the Health Industry Distributors Association ([www.hida.org](http://www.hida.org)), the Strategic Marketplace Initiative ([www.smisupplychain.com](http://www.smisupplychain.com)) and GS1 Healthcare US ([www.gs1us.org/healthcare](http://www.gs1us.org/healthcare)).

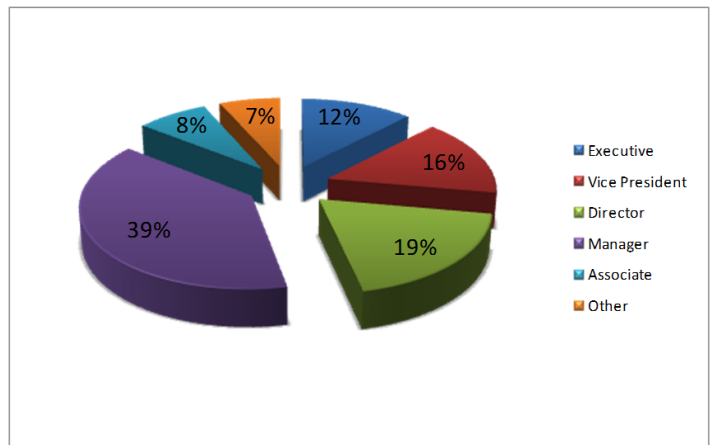
The Center for Innovation in Healthcare Logistics (CIHL) is an industry-university partnership that leads a nationwide effort to identify and foster system wide adoption of ground-breaking healthcare supply chain and logistic innovations. CIHL facilitates collaboration among researchers at the University of Arkansas' flagship campus in Fayetteville, healthcare provider organizations, and industrial sponsors including Wal-Mart, Arkansas Blue Cross and Blue Shield, VHA Inc., the Association for Healthcare Resource & Materials Management, Procter & Gamble Co. and IBM. Additional information can be found at [cihl.uark.edu](http://cihl.uark.edu).

## Which of the following best describes the organization you are directly employed by?



Sample size = 527; Source: 2011, Nachtmann and Pohl

## Which of the following best describes your job title?



Sample size = 514; Source: 2011, Nachtmann and Pohl

## Contact Information

Heather Nachtmann, Ph.D.  
 Department of Industrial Engineering  
 4207 Bell Engineering Center  
 University of Arkansas  
 Fayetteville AR 72701  
[hln@uark.edu](mailto:hln@uark.edu)  
 (479) 575-3156

Edward A. Pohl, Ph.D.  
 Department of Industrial Engineering  
 4207 Bell Engineering Center  
 University of Arkansas  
 Fayetteville AR 72701  
[epohl@uark.edu](mailto:epohl@uark.edu)  
 (479) 575-3156