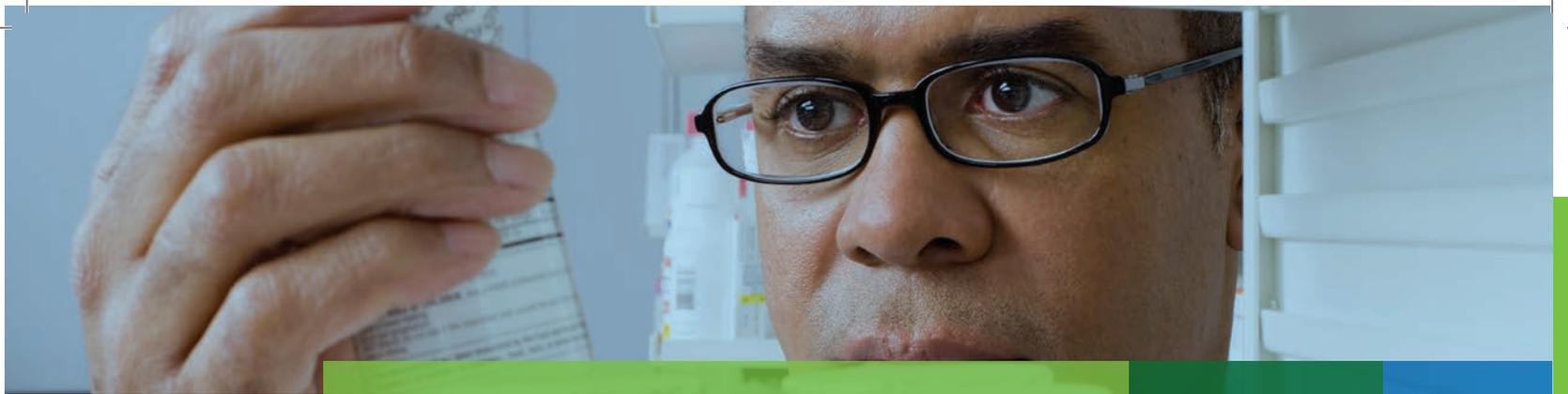**Wolters Kluwer**

Medication
Decision
Support
for Global
Healthcare

Clinical Drug Information

Lexicomp®

Medi-Span®

Medication references and
clinical screening solutions

Wolters Kluwer Clinical Drug Information provides innovative medication decision support solutions to help healthcare professionals make better clinical and business decisions. Our point-of-care references and embedded drug data are trusted worldwide to help elevate quality, reduce costs, and improve patient outcomes.

Customer Confidence*

Improve Quality
86% agree

Enhance Patient Care
86% agree

Reduce Cost
Over 50%
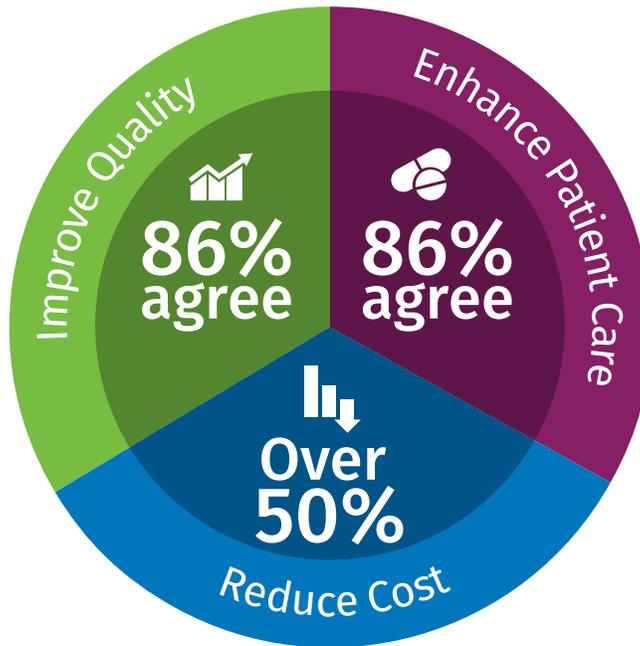
OUR REACH

70%
of top-grossing EMR vendors

2,400
hospitals and health systems worldwide

43K
retail pharmacies

18 of 20
top-grossing health insurance companies

60K
pharmacy students

17 of 20
top-grossing PBMs

80K
mobile app users

EMPOWERING MEDICATION DECISIONS FOR BETTER CARE

DRUG INFORMATION REFERENCES

Customer Satisfaction*

Lexicomp® Online

- Searchable referential drug information databases and interactive decision support modules
- Available online, on mobile apps, or integrated into your system

Overall Satisfaction
100% of customers:
Satisfied with the quality of content

Renewal Rate
96% of customers:
Likely to renew

Medi-Span® Price Rx®

- Online drug pricing information and pricing decision tools

Overall Satisfaction
97% of customers:
Satisfied with the quality of content

Renewal Rate
97% of customers:
Likely to renew

DRUG DATA

Medi-Span Data & APIs

- Drug vocabulary, attributes, and clinical screening modules integrated into EMRs, pharmacy systems, and other healthcare systems to aid in decision support

Overall Satisfaction	Renewal Rate	Reduce Alerts
98%	**99%**	**50%**
of customers are satisfied with the quality of data	of customers are likely to renew	reduction in alerts fired when using Medi-Span alert filtering functionality

Wolters Kluwer Clinical Drug Information offers a worldwide view of medication safety, tailored to your region. Promote patient safety initiatives while positioning your organization to reduce costs.

*Source: Wolters Kluwer Clinical Drug Information Customer Surveys

Medication Errors by the Numbers*...

In the U.S., adverse drug events are the
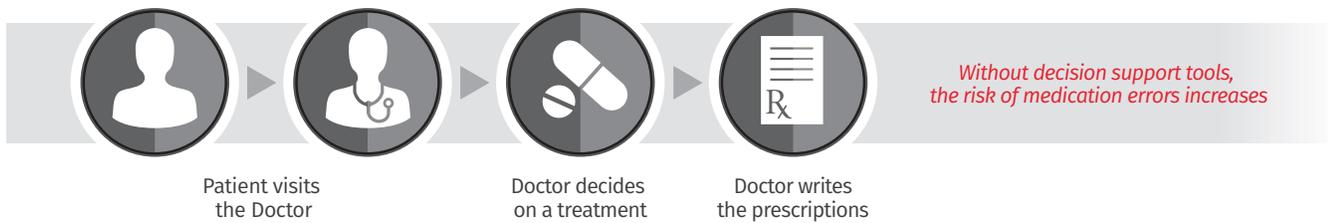# 4th leading cause of death
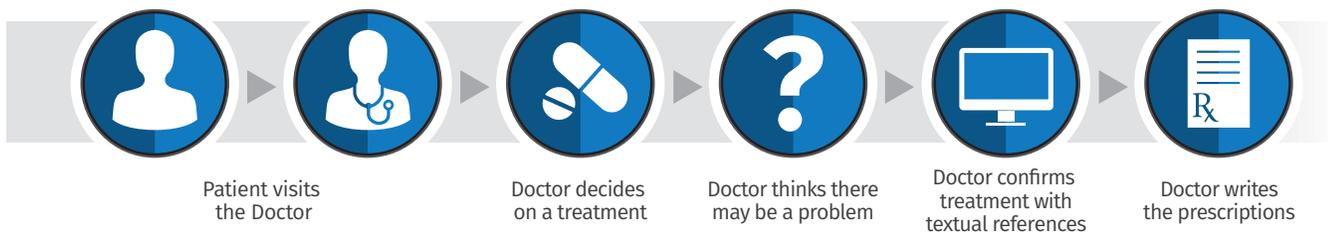# 100,000
events occur every year

with an annual cost of
$136 Billion USD

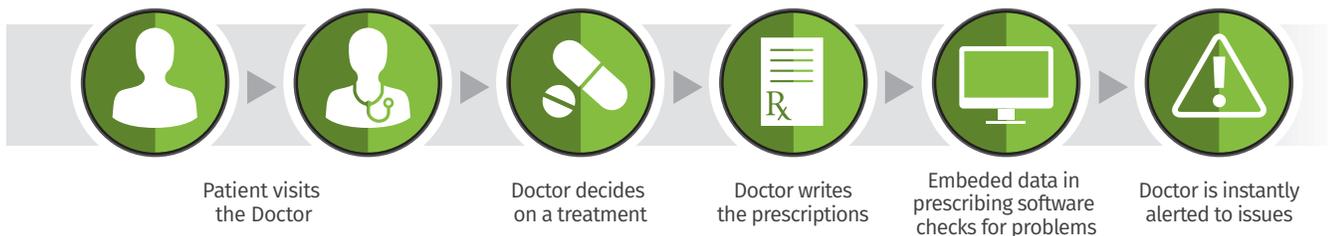## *How Medication Decision Support Can Help*

Normal Workflow (no clinical reference information consulted)

*Without decision support tools,
the risk of medication errors increases*

Patient visits
the Doctor

Doctor decides
on a treatment

Doctor writes
the prescriptions

Online Reference (manual screening)

Lexicomp Online

Patient visits
the Doctor

Doctor decides
on a treatment

Doctor thinks there
may be a problem

Doctor confirms
treatment with
textual references

Doctor writes
the prescriptions

Embedded Data (automatic screening)

Medi-Span

Patient visits
the Doctor

Doctor decides
on a treatment

Doctor writes
the prescriptions

Embeded data in
prescribing software
checks for problems

Doctor is instantly
alerted to issues

* patientsafetymovement.org

Global Drug Information for Your World

Wolters Kluwer Clinical Drug Information is reshaping the way healthcare professionals elevate the quality of care by combining point-of-care reference information, advanced clinical decision support, and a core multinational drug database. These extensive drug information solutions complement each other and work together, combining globally relevant content with unique information from key markets outside the United States.

Our solutions are rooted in international best practices and intended to help you improve workflow efficiency and reduce costs related to treating adverse drug events, readmissions, and unnecessary duplicate therapies ... all while strengthening your relationships with patients and helping you provide better, more informed care.

We connect your organization to:

- **Online drug references and embedded drug data for your EMR**
- **An extensive library of information on multinational medications**, with various brand names, dosage forms, and dosage strengths used in specific regions
- **Mappings to various drug, disease, and allergen terminologies** used internationally and in a growing number of national markets

World-class Customer Support

We have regional representatives stationed in various countries around the world to provide hands-on, locally-focused customer support. We are known for our world-class customer service, including regional technical support and implementation guidance. We provide the knowledge and assistance to help you implement our technology according to industry best practices, so you can launch your solution as quickly and smoothly as possible, saving your institution time and money and getting valuable clinical decision support into your team's hands when they need it.

Our global content specialists work to continuously update and improve both our information and functionality to help strengthen our solutions and expand our regional content. Customer feedback helps drive our innovations, and we partner with our customers to develop solutions that best serve their regional, informational, and technical needs.

Wolters Kluwer Clinical Drug Information is part of Wolters Kluwer, a Netherlands-based global information services company with 19,000 employees and operations in more than 59 countries. The roots of the modern Wolters Kluwer corporation date back to 1889.

Drug References

Lexicomp® reference solutions help you make more informed decisions at the point of care

When healthcare professionals have drug information questions, our drug reference solutions are available at the point of care, providing fast access to timely and relevant medication information, ranging from dosing and precautions, to drug interactions checking and IV compatibility.

The online user interface is available in 10 languages so a wide range of clinicians can more confidently and easily search and navigate in the language of their choice.

Our drug reference solutions contain independently reviewed and professionally developed information to help inform treatment plans.

Users can access our Lexicomp reference solutions:
- **Directly from the EMR**
- **Online**
- **On mobile apps**

Multinational Drug Information Database

Our core referential drug information database has been expanded and enriched to include ever-growing numbers of drugs available on a more global basis, including information on dosages, dosage forms, naming conventions, and restrictions for many regions in which they are used.

Our multinational database philosophy:
- Information is intended for clinicians treating patients around the world. It is NOT U.S.-centric information.
- New monographs are continuously developed to improve our international drug coverage
- Referential multinational database helps spark further development of drug data for clinical screening of dosing and interactions
- Information can be used to build local formularies (drug lists)

Online and Mobile Databases
- **Drug Information**
  - Point-of-care information and more in-depth resources
  - Adult, pediatric, neonatal, and geriatric dosing
  - Pregnancy and lactation information
  - Off-label drug uses
  - Global medication data
  - Herbal/natural products
  - Pharmacogenomics
  - Nursing-specific resources
  - Dental-specific resources
- **Adverse Drug Event Information**
  - Drug interactions
  - Drug allergy and idiosyncratic reactions
  - Toxicology
- **Clinical Content**
  - Infectious diseases
  - Laboratory tests and diagnostic procedures
  - Quick reference disease information from The 5-Minute Clinical Consult
- **Drug comparative efficacy and role in therapy content**
- **Expanded global drug information from Martindale: The Complete Drug Reference™**

Services

Referential Monograph Customization (Formulary Service)

Integrate your institution's drug formulary list, policies and procedures, and therapeutic guidelines with Lexicomp clinical information to help meet requirements, such as JCI; reduce medication costs; and improve prescribing and dispensing efficiency.

- Access your institution's list of available medications in a customized database directly through Lexicomp Online and Mobile Apps
- One search shows a drug's availability and connects you to Lexicomp drug and clinical content
- Include hospital-specific drug status information, policies and guidelines
- Establish multiple formularies for different sites in your health system
- Update your formulary in real time using our editor tool

EHR Access (Infobutton)

- Access key drug information and patient education directly within your workflow in one click
- HL7-compliant Infobutton allows you to link to context-specific information within the referential online interface and to create or store a patient education packet within your clinical system

Complying with Standards, including Joint Commission International (JCI)

Solutions to help your institution meet elements of various hospital accreditation programs:

- Medication decision support including drug interaction and drug allergy screening
- Formulary compliance – Referential Monograph Customization helps inform healthcare professionals of available drugs approved for use in your institution
- Drug information to support the full spectrum of medication use, including prescribing, dispensing, administration and monitoring
- IV compatibility information for monitoring parenteral medications
- Continually updated, fully referenced professional information
- Patient education resources in up to 19 languages, including discharge summaries and information on medications and ongoing care

Decision Support Tools

- Drug and allergy interactions analysis
- Medical calculators
- IV compatibility*
- Drug comparisons
- Drug identification

Patient Education

- Easy-to-read, illustrated patient-facing summary information on medications, diseases/conditions, procedures/lab tests, natural products, discharge instructions, occupational/physical therapy, dental topics, and healthy living
- Provides patients with understandable information that is consistent with professional drug content being referenced by clinicians
- Available in up to 19 languages
- Customizable and printable

Consumer Engagement Center

- Pre-packaged healthcare educational tools can be used to create a patient portal or consumer health information website with minimal implementation and maintenance efforts by your organization
- Consumer modules include:
  - Adult and pediatric medication patient education
  - Natural product information
  - Educational materials on conditions, procedures and discharge instructions
  - Drug interaction checker
  - Drug identifier tool
- Healthcare organizations can easily link to a customizable patient engagement website, creating a patient-facing resource that still maintains your institution's branding

One resource serves pharmacists, physicians, and nurses, providing greater value and driving down costs per use.

*IV compatibility: Incorporates the Trissel's™ 2 Clinical Pharmaceutics Database by Lawrence A. Trissel

Clinical Screening Tools

Medi-Span® drug data solutions provide additional functionality to your EHR, powering clinical screening to help reduce medication errors

Healthcare professionals need a robust decision support solution to help them:

- **Streamline workflow**
- **Enhance patient care and reduce medication errors**
- **Fight alert fatigue**

Streamline workflow: Content sets and software applications embedded into EHRs and other healthcare applications power fast, sophisticated screening that takes into account available patient-specific data. Mapping to a variety of standardized codes and vocabularies supports interoperability, helping improve healthcare communication and reporting.

Enhance patient care and reduce medication errors: Drug data solutions screen for potential conflicts, double check appropriate dosing against generally accepted parameters, and alert professionals to a variety of errors before they can impact patient care to help improve patient outcomes, reduce the costs of corrective therapies, and avoid readmissions to the hospital.

Fight alert fatigue: Medi-Span data solutions provide functionality that helps you reduce the "noise" of irrelevant alerts that can overwhelm professionals, obscure potentially relevant alerts and interrupt workflow. We offer the ability for users to develop alert customization by site, department/group, or even by end-user clinician; consolidate common alerts; and test your data customizations through our Command Center. With more relevant alerts – as determined by your professionals – grabbing clinicians' attention, our drug data solutions can help your organization focus attention on alerts that actually help enhance patient care.
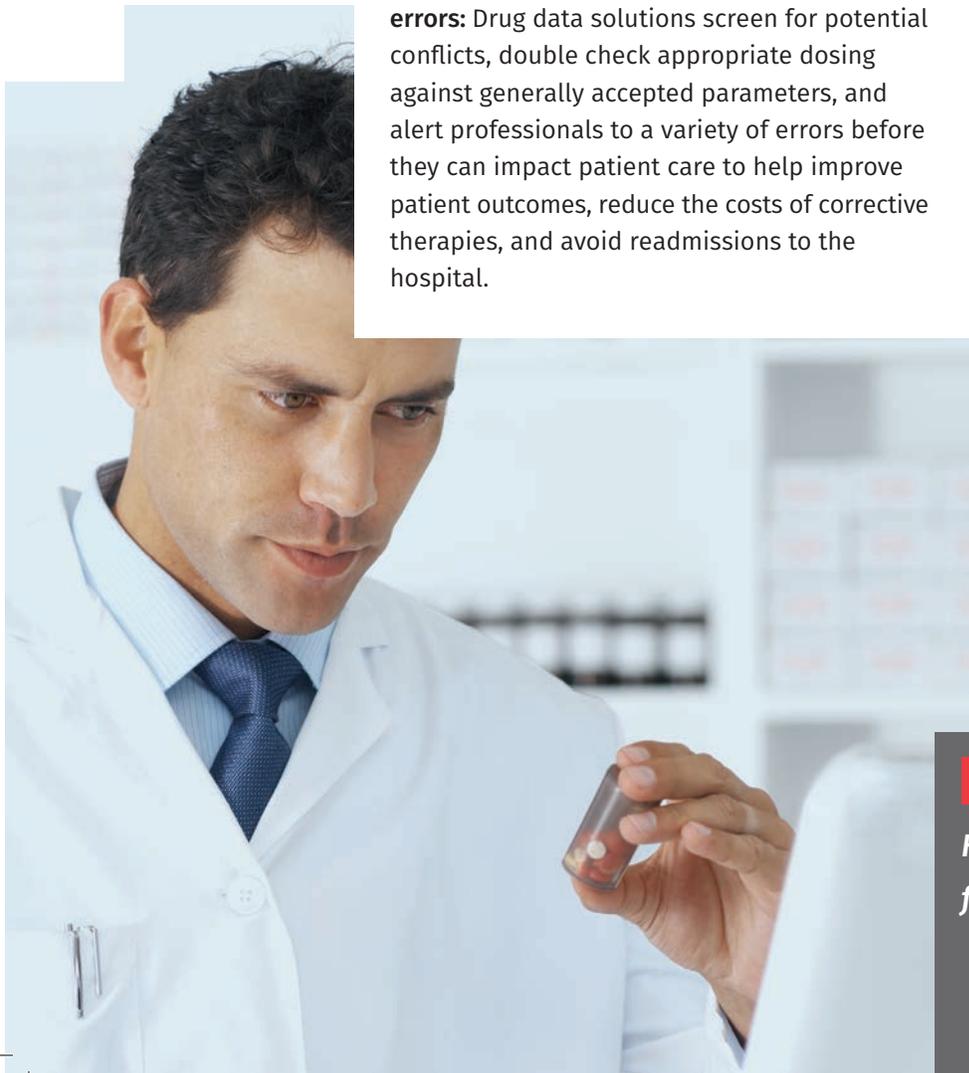
Help reduce prescribing errors with faster access to key drug content.

Application programming interfaces (APIs) provide cross-referencing and screening functionality to help identify and avoid potential risks to patients and aid in reporting healthcare data

Drug Databases
Embedded information to help classify therapeutic options, discover potential conflicts and assist clinicians in enhancing patient safety

- **Global Drug Database**: Local country, market, and regional medications with drug identifiers, drug terminologies and categorizations, dosage form information, and clinical identifiers

- **Regional Extension Databases**: Local market requirements related to reimbursement and regulation

- **Warning Labels**: Automates auxiliary labeling process

Clinical Decision Support Screening APIs

- **Drug Interactions Screening**: Screening information and full-text monographs on drug-drug, drug-food, and drug-alcohol interactions

- **Allergy & Cross Sensitivities Screening**: Screening information and full-text monographs on drug allergies and associated adverse reactions

- **Therapeutic Duplication Screening**: Screening and monograph information to help identify drug therapeutic duplications

- **Dose Range Screening & Common Drug Orders**: Information about a drug's dose, frequency, and duration of therapy and dosing at the ingredient level of a drug

- **Disease Contraindication Screening**: Screening and monograph information about contraindications and precautions associated with the use of a drug based on a patient's disease state/medical conditions, genome, lab results, or planned procedures

- **Pregnancy, Lactation, Age, and Gender Contraindication Screening**: Screening and monograph information on contraindications associated with patient-specific parameters

- **Route Contraindications Screening**: Screening for routes of drug administration that are contraindicated and/or not recommended for a specified medication

- **IV Compatibility Screening**: Data to determine compatibility and stability of parenteral medications

- **Adverse Drug Effects:** Information about potential adverse effects, frequency and likelihood of incidences, and level of severity

- **Morphine Equivalent Dosing:** Calculates cumulative amount of opioid drugs a patient has received in 24 hours, screening and alerting clinicians to potential overdoses

- **Drug Indications:** Information about which drugs are appropriate to treat a specific medical condition

- **Concepts & Mappings:** Supporting global and regional standards, such as immunizations, ICD-9, ICD-10, ICD-10 AM, SNOMED CT®, AMT (Australia), and SDD (Singapore)

Clinical Screening Tools

Services

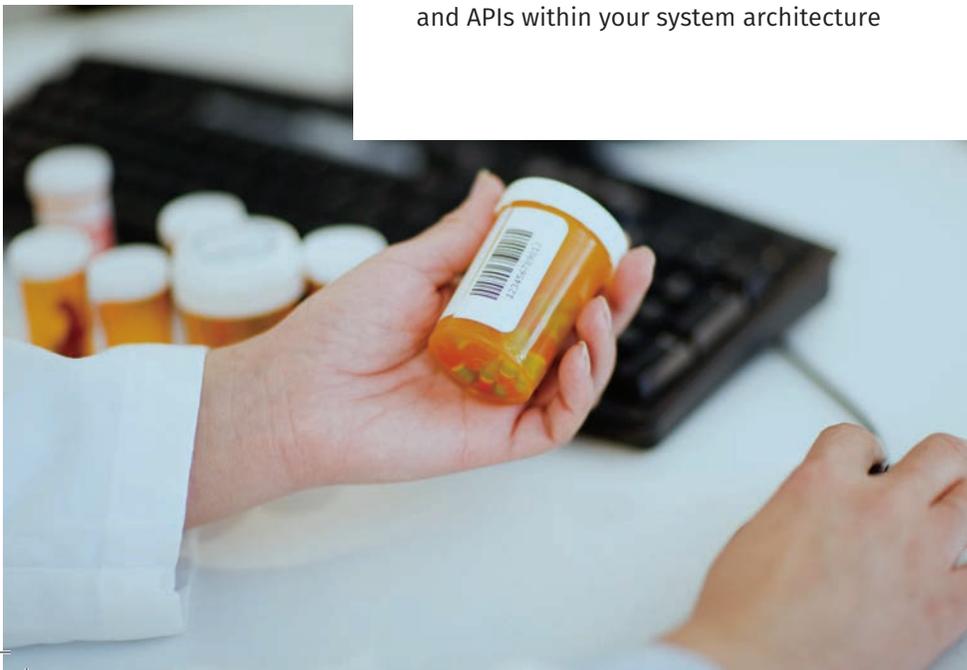*Programming and consultative support to help optimize use of our solutions*

- **Drug List Mapping:** We will take your supplied drug list (names and identifiers) and link it with our structured drug concepts, terminologies, and identifiers

- **Mapping Maintenance:** We provide ongoing mapping to standard or adopted terminologies and vocabularies for your provided drug list

- **Consultation:** Many vendors and self-programming customers are unfamiliar with the capabilities and benefits of optimized clinical decision support and may struggle to implement it in a way that best fits their users' workflows. We help to maximize the value of our content and implementation of resources in a way that realizes the gains from system interoperability. We also help you manage clinical alerts based on the needs of your institution or clinician groups

- **Implementation Training:** Our team of experienced specialists will work with your development and implementation team to assist in delivering against your project plan. This includes answering and troubleshooting questions around the use of our databases and APIs within your system architecture

Command Center

A growing suite of Web-based applications, Command Center provides a single online hub that allows you to manage the alerts generated by Medi-Span screening tools:

- **Query and export alert data reports** to better understand how alerts are working in your system and how relevant they are to your clinicians

- **Easily review specific alerting scenarios** to understand workflow impact

- **Test potential alert modifications** and suppressions and then apply those modifications to your live system

- **Tailor alert sets for specific groups of users**, such as specific clinicians, specialties, or wards

- **Add Infobutton links** directly to Lexicomp medication monographs from alert messages (with subscription to Lexicomp Online)

Help reduce costs created by adverse drug events with fewer therapeutic errors and duplications.

Drug Information in a Hospital Workflow

Admission enters patient demographics and history into workflow.
• Allergies & conditions
• Age, weight, & gender

Physician researches drug information.
• Verify treatment dose
• Check contraindications, warnings, & adverse events
• Reference recent literature/CPGs
• And more!

Physician orders medication, prompting drug screening.
• Interactions
• Allergies
• Does ranges
• Duplicate therapy
• And more!

Physician evaluates physician-level alerts and determines a treatment plan.

Pharmacist receives the drug order and evaluates any pharmacy-level alerts.
• Formulary status
• Drug shortages
• And more!

Pharmacist researches alternative therapy options and dispenses appropriate therapy.

Nurse reviews the medication order, records administrations on the eMAR, and evaluates any nurse-level alerts.
• IV compatibility
• Screening stats drugs
• PRN daily dose checking
• And more!

Nurse researches drug information questions.
• Preparation & storage
• Administration
• Monitoring parameters
• And more!

Nurse distributes patient education leaflets.
• Medication
• Condition & Disease
• Procedure & Diagnostics
• Healthy Living
• And more!

= **Lexicomp Online** referential drug data

= **Medi-Span** embedded drug data

Smarter Decisions. Better Care.

Our purpose is to help you	**Improve Quality**	**Enhance Patient Care**	**Reduce Cost**

Our comparative advantages	**Unified Editorial Team**	**Lexicomp®** ▶ ◀ **Medi-Span®**	**Unified Data Collection**

Found where healthcare decisions are made

▶ Order Entry ▶ Dispensing ▶ Prescribing ▶ Authorization
▶ Payment ▶ Administration ▶ Patient Education
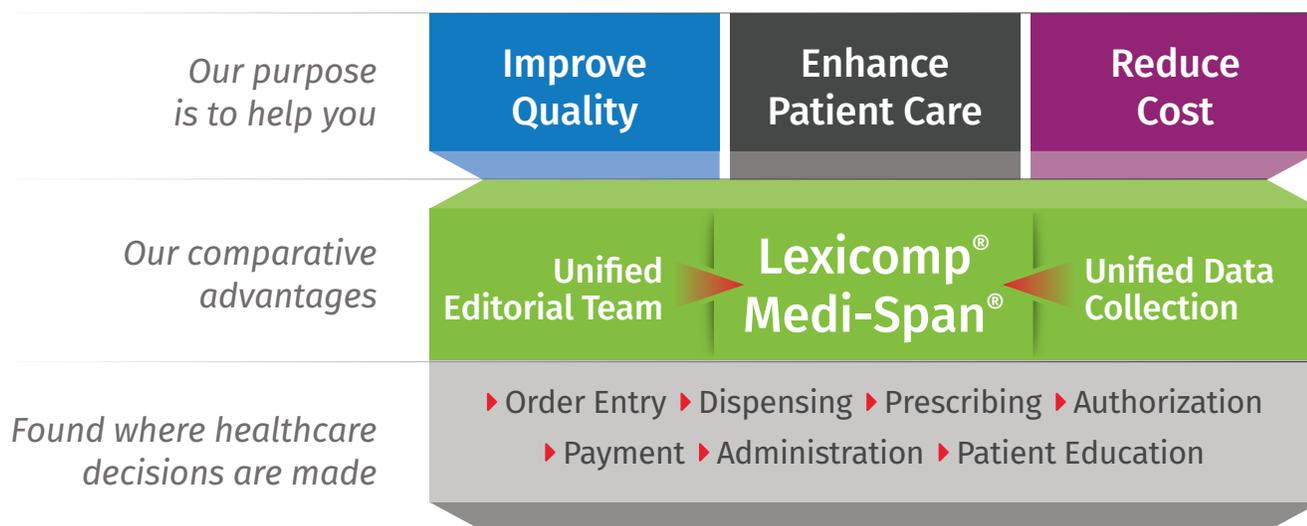
Present throughout the continuum of healthcare

Hospitals & Health Systems

Medication references and clinical screening tools used by 2,400 hospitals worldwide to help meet the needs of pharmacists, physicians, and nurses

PBM & Payers

Supplying 17 out of 20 of the top-grossing PBMs continually updated and in-depth drug information used to aid reviewing, editing, and paying for healthcare transactions

Retail Pharmacies

Medication information and clinical tools used by 43,000 pharmacies to support patient safety through drug dispensing and Medication Therapy Management (MTM) activities

Drug Manufacturers & Wholesalers

Delivering benchmark drug pricing information in both online reference and data content sets

EMR & Healthcare IT Vendors

Powers the drug information needs of 70% of the world's top-grossing EMR vendors

Wolters Kluwer