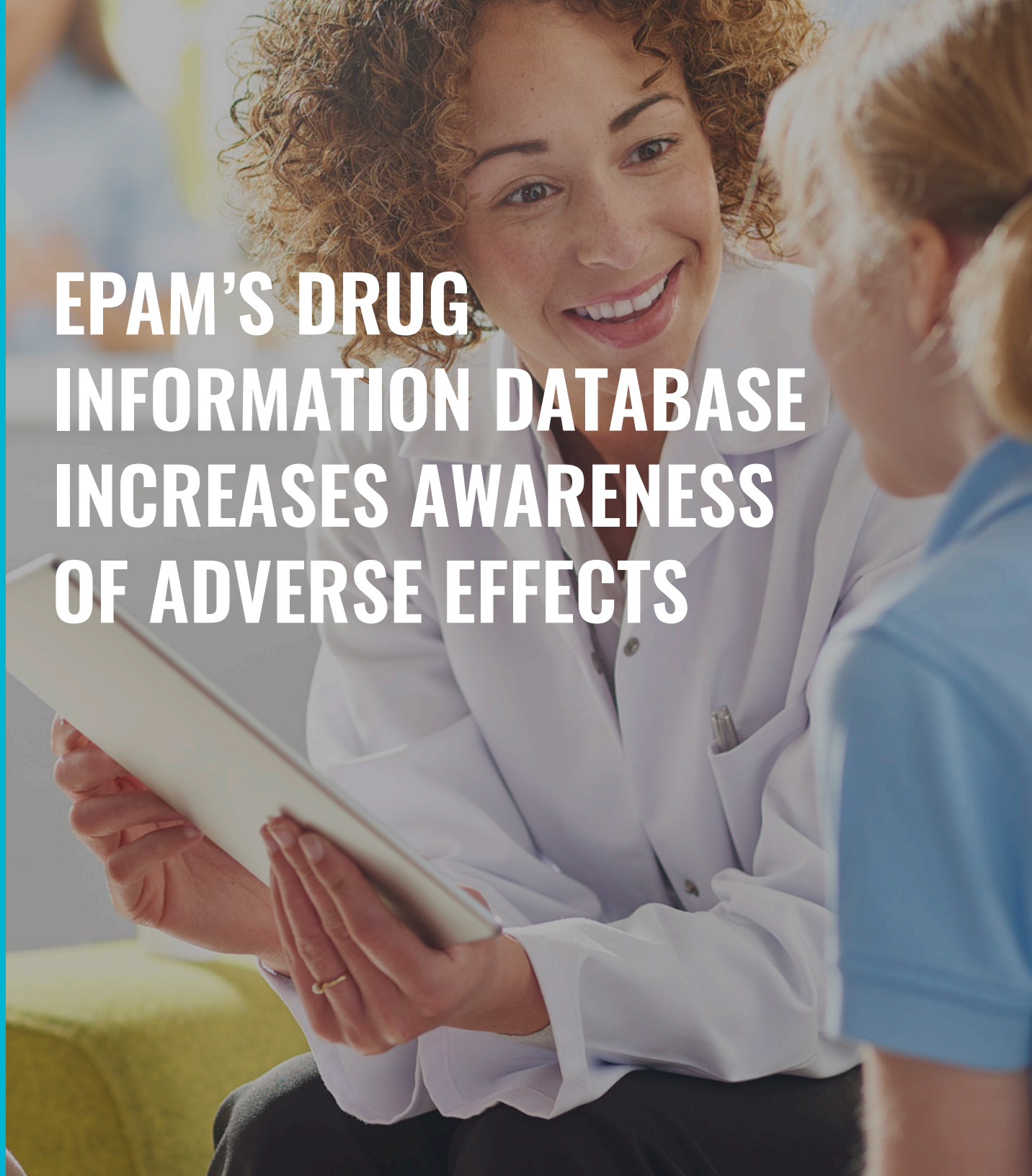
CASE STUDY

EPAM'S DRUG INFORMATION DATABASE INCREASES AWARENESS OF ADVERSE EFFECTS



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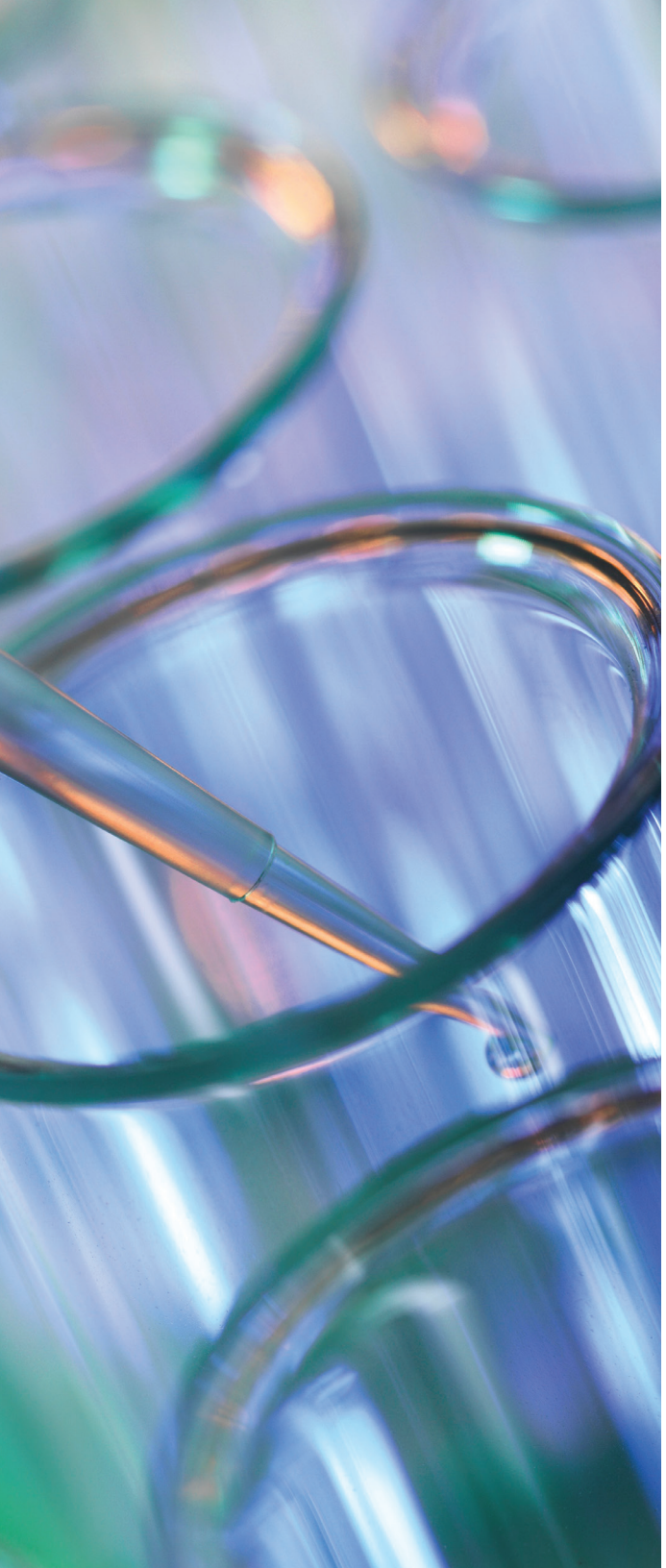

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The client is a world-leading provider of information solutions that enhance the performance of science, health, and technology professionals, empowering them to make better decisions, improve care, and sometimes make groundbreaking discoveries that advance the boundaries of knowledge and human process. Each year, the company publishes more than 250,000 articles in over 2,200 journals.

THE CHALLENGE: CURATE & CONSOLIDATE CONTENT FROM THOUSANDS OF SOURCES

Before engaging EPAM, the client recognized a need for a database that compiles diverse information on the adverse effects of drugs marketed in the U.S. and Europe. The data had to be collected from a wide variety of information sources (XML files, databases, images, PDF files, chemical structure and reaction files, graphs, text documents, spreadsheets, etc.) and made available to a wide variety of users, including chemists, biologists, regulators, and business managers. In order to properly consolidate and curate this content into one definitive database, the client enlisted EPAM for its deep expertise in Digital Engagement.

TECHNOLOGIES

- Java EE
- JDBC
- JSP
- Struts
- JQuery
- Oracle
- Tomcat

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THE SOLUTION: LEVERAGE CROSS-FUNCTIONAL TEAMS TO DESIGN & DEVELOP THE APPLICATION

EPAM engineered the solution by utilizing two different teams – content curation and software development – to create the comprehensive Drug Information Database. First, the scientific content team worked closely with the client during the Setup and Requirements Definition Phase to understand the project goals and then identified, reviewed and curated relevant documents, converting the heterogeneous information from various sources into a uniform, quantitative, table-like format. In parallel, EPAM's coordinated efforts with all parties to develop the database management system, the production workflow and tools, and the user-friendly interface.

From the R&D phase of building the application to its initial launch, EPAM's cross-functional teams worked with the client to complete the following development initiatives:

- Extracted detailed toxicology and adverse effects information from diverse sources into database fields.
- Semi-manually curated, integrated, and pooled efficacy, toxicity, adverse effect, drug-drug interaction, mode of action and PK information from FDA and EMEA approval packages and scientific publications for over 4,500 drugs from over 45,000 image and text files totaling 2,500,000 pages.
- Developed the following methodologies, tools, and templates for data curation:
  - Designed and developed an integrated scientific curation and quality assurance environment to optimize the curation process and improve product quality.
  - Developed and customized ontologies/taxonomies/thesauri for adverse effects, targets, drugs, subjects and many other entities.
  - Developed modeling tools to predict drug-drug interactions
  - Developed "smart OCR tools" and applied them to efficiently digitize and convert information from hard copy documents and images into searchable form.

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THE RESULT: AN ALL-IN-ONE, EASY-TO-USE DRUG INFORMATION DATABASE

Through EPAM's software development and content curation efforts, the client now equips its customers with a Drug Information Database that exceeds expectations. The application offers the following features to its users:

- Comprehensive yet easy-to-use web user interface with the ability to access:
  - Various points of entry to find needed information
  - Different views of the data (pre-clinical, clinical, and post-market)
  - Different levels of detail (summary tables, experimental detail, full text where available)
- Ability to quickly determine toxicology and adverse effects of thousands of drugs marketed in the U.S. and Europe
- Option to filter searches by drug name, adverse effect/toxicity, species, dose, dose type, route, source document, and year

Today, various end users, including pharmaceutical companies, drug regulators, research institutions, and others, use the solution daily. EPAM manages the client's Drug Information Database and makes quarterly updates, adding new drugs and adverse effects information in the process. If you'd like to learn more about EPAM's capabilities in Life Science software development, get in touch with us today!

QUESTIONS?

CONTACT US AT
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