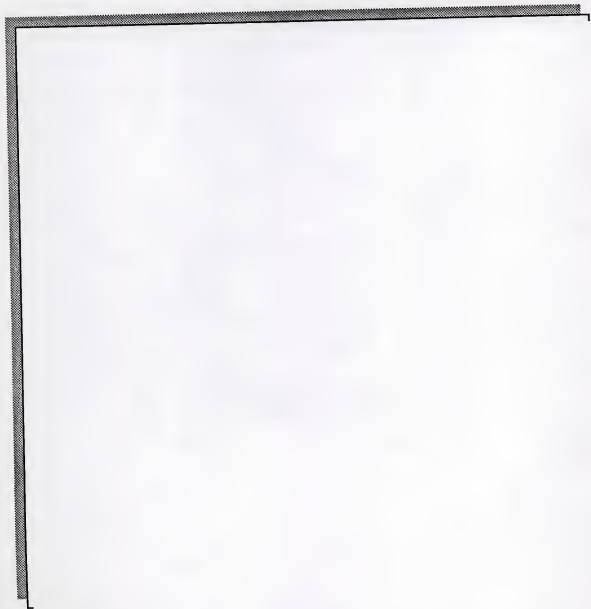


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Black B

HEALTH CARE MEGABASES.
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100-21

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 - 3. Resources Devoted to Databases: 1995-2000
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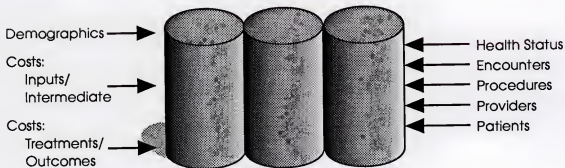
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A S P E C I A L S T U D Y

Health Care Megabases[®]



Outputs

- Actuarial Analysis
- Public Health Studies
- Outcome Analysis
- Provider Scorecards
- Cost Norms
- Treatment Protocols

Uses (Examples)

- Drug Studies
- Marketing Scenarios
- Patient-Mix Models
- Provider Negotiation
- Partnering
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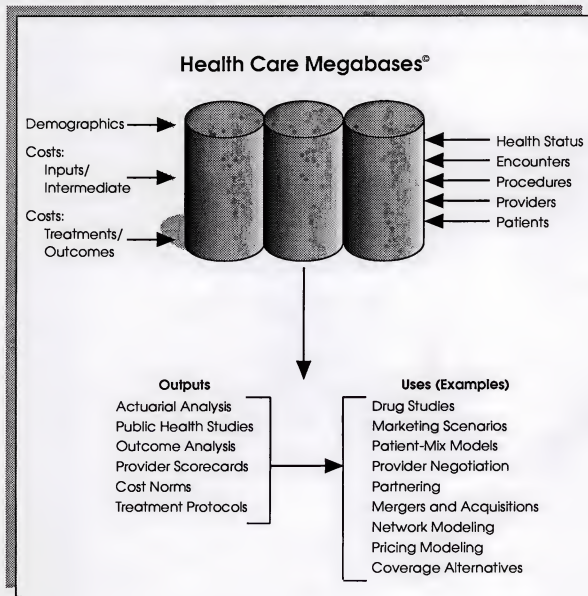
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A SPECIAL STUDY

Health Care Megabases®





HEALTH CARE MEGABASES®

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1968-01-30	Bank of America	25.00	175.00
1968-02-15	Cash on hand	75.00	250.00
1968-02-28	Bank of America	100.00	350.00
1968-03-15	Cash on hand	125.00	475.00
1968-03-31	Bank of America	150.00	625.00
1968-04-15	Cash on hand	175.00	800.00
1968-04-30	Bank of America	200.00	1000.00
1968-05-15	Cash on hand	250.00	1250.00
1968-05-31	Bank of America	300.00	1550.00
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1968-07-15	Cash on hand	450.00	2750.00
1968-07-31	Bank of America	500.00	3250.00

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01/16/95 10:37 ☎201 801 0441

INPUT (01 / →→ 263732

001/004

Jan 16

To: Andrea

Fm: Tom

Re: Megabase Brochure Draft

Thanks for the effort.

I liked chapter VII so much I used it twice. I couldn't see any other content problems (but I'm probably too close to it by this time to really see any for a while).

I agree it needs a bit more work design-wise. My idea is to go from a 4-column to a 2-column page (except for bullets). I mocked it up on the attached to see how it fit/flows and it seems better; I was also afraid that I couldn't explain it in words well. In addition, two columns seem to utilize space more efficiently (both from an inch standpoint and focusing the reader's eyes).

Similarly, I think the TOC is less choppy using two columns and it's easier to navigate columns jumps (partially because fewer jumps are required).

I repeat the following phrase 6 times:

Includes
objectives, database
content, source of data,
implementation/man-
agement, size and
performance characteris-
tics, source of database
building and operations,
as available.

I debated whether to footnote it, but couldn't tell how the footnotes would fall out in the draft. I think that we would just require the footnote twice, in the spots indicated, in the mock up. This would conserve space and reduce the repetition.

If you have questions/comments, please call.

A SPECIAL STUDY

BACKGROUND

The entire health care system is being profoundly affected as managed care replaces fee-for-service medicine.

A cause and effect of this new health services change is the emergence of a new environment. Every group is affected: the health database is a critical success factor in the

- Managed Care Organizations
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- Other Suppliers of Goods and Services
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The role of the health database is changing so much — in kind and pervasiveness — that INPUT has coined the term, Health Care Megabase, to highlight the data's importance in the new environment.

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- Which government actions could impact health megabases? What are the most likely actions to occur?

Other questions and issues will be raised by the study's sponsors and findings.

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HEALTH CARE MEGABASES®**A SPECIAL STUDY****METHODOLOGY/
DELIVERABLES**

The core of the study's methodology will be in-depth primary research conducted among 200+

The study will describe and analyze over 100 megabases now in use or

Charter sponsors of the study will have an opportunity to review and comment on the scope of the study and the content of

organizations, ranging from managed care organizations to health care consultants.

in an advanced stage of planning.

the primary research questions. All sponsors will have access to the study team during the course of the study.

The study will take three months to complete.

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- A printed copy of the report. (See the preliminary table of contents in the next section.)
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B. Managed Care
C. Changes in Health Care IT
D. Impacts on Database Use

IV ←————→

IV ←————→

IV Control

IV

VI

* Footnote ??

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① 004/004

VII

INPUT

→→→ 283732

① 004/004

* Footnote ??

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01/16/95 11:09 201 801 0441

INPUT

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001/002



IT Intelligence Services

400 Plainville, NJ
Teaneck, NJ 07686
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Fax (201) 801-0441

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Date: 1/16

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Co.: _____

Fax No: _____

From: Name: TOP

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Confidential: Y/N
Urgent: Y/N

Page: 1 of 2

File: Chron
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Other:

The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that proper record keeping is essential for the success of any business and for the protection of the interests of all stakeholders. The text then goes on to describe the various methods and techniques used to collect and analyze financial data, highlighting the need for consistency and transparency in the reporting process.

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PHYSICS 201

1. A particle of mass m moves in a circular path of radius r with constant speed v . The centripetal force is $F_c = \frac{mv^2}{r}$.

2. A block of mass M is pushed up an inclined plane of length L and height h by a force F applied parallel to the incline. The work done by the force is $W = FL$.

3. A spring with spring constant k is stretched by a distance x . The work done is $W = \frac{1}{2}kx^2$.

4. A particle of mass m moves in a circular path of radius r with constant speed v . The centripetal force is $F_c = \frac{mv^2}{r}$.

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12. A spring with spring constant k is stretched by a distance x . The work done is $W = \frac{1}{2}kx^2$.



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Co.: _____
Fax No: _____
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Subject: MEGA

Confidential: Y/N
Urgent: Y/N

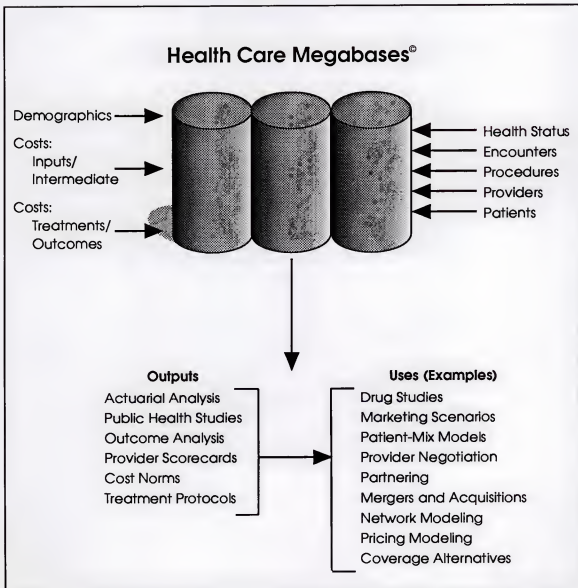
Page: 1 of 5

File: Chron
Contact
Other:

- for your Review
- Still needs work
Suggestions ?

A SPECIAL STUDY

Health Care Megabases®



HEALTH CARE MEGABASES®

A SPECIAL STUDY

BACKGROUND

The entire health care system is being profoundly affected as managed care replaces fee-for-service medicine.

A cause and effect of this change is the emergence of the health database as a critical success factor in the new health services environment.

Every group is affected:

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OBJECTIVES

This study will provide a road map showing the impact of megabases on health care participants, both individually and collectively.

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- How will privacy and security factors affect megabase development?

HEALTH CARE MEGABASES[®]

A SPECIAL STUDY

■ Which government actions could impact health megabases? What are the most likely actions to occur?

Other questions and issues will be raised by charter sponsors and others will flow from the study's analysis and findings.

METHODOLOGY/ DELIVERABLES

The core of the study's methodology will be in-depth primary research conducted among 200+ organizations, ranging from managed care organizations to health care consultants.

The study will describe and analyze over 100 megabases now in use or in an advanced stage of planning.

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- C. Changes in Health Care IT
- D. Impacts on Database Use

III. Health Care Database Trends: 1995-2000

- A. "Traditional" Databases vs. Megabases
- B. Types of Use: 1995 and 2000
- C. Data Mining
- D. Resources Devoted to Databases: 1995-2000
 - 1. Volume/Size Measures
 - 2. Spending
- E. Barriers to Use

IV. Megabases: Managed Care Organizations

- A. Major Uses/Payoffs
 - 1. Current
 - 2. Future
- B. Functional Requirements (e.g., Underwriting, Negotiations)
- C. Descriptions of Major Megabases (Includes objectives, database content, source of data, implementation/management, size and performance characteristics, source of database building and operations, as available.)
- D. Resources Devoted to Databases: 1995-2000
 - 1. Volume/Size Measures
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V. Megabases: Insurance Companies

- A. Major Uses/Payoffs
 - 1. Current
 - 2. Future
- B. Functional Requirements (e.g., Underwriting, Negotiations)
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 - 2. Spending

VI. Megabases: Providers

- A. Major Uses/Payoffs
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- B. Functional Requirements (e.g., Patient Care, Negotiations)
- C. Descriptions of Major Megabases (Includes objectives, database content, source of data, implementation/management, size and performance characteristics, source of database building and operations, as available.)

*For more information
please call*

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HEALTH CARE MEGABASES®

Preliminary Table of Contents (continued)

D. Resources Devoted to Databases: 1995-2000

1. Volume/Size Measures
2. Spending

VII. Megabases: Third Party Providers

A. Government

1. Descriptions of Major Databases Provided (Includes objectives, database content, source of data, implementation/management, size and performance characteristics, source of database building and operations, as available.)

2. Cost, if applicable

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3. Resources Devoted to Databases: 1995-2000

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- b. Spending

C. Commercial

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2. Cost

3. Resources Devoted to Databases: 1995-2000

- a. Volume/Size Measures
- b. Spending

VII. Megabase Categories and Classification

A. Classes of Megabases

B. Megabase Characteristics

1. Major Data Elements
2. Data Sources
3. Current/Projected Size
4. Time Period Covered
5. Enhancements/Transformations
6. Major Analytic Tools/Processes
7. Major Uses
8. Benefits/Payoffs

C. Classification of Megabases

1. Matrix of Classes and Individual Databases, by Characteristics
2. 100+ Classified

VIII. Privacy and Security

A. Privacy Classes

1. Individual Patient Data
2. Grouped Patient Data
3. Provider Data

B. Factors Tending to Tighten Privacy Restrictions

1. Legislation and Regulation
2. Judicial Review
4. Professional Groups
3. Public Opinion

C. Factors Tending to Loosen Privacy Restrictions

1. Managed Care
2. Improvements in Health Care Safety and Efficiency

D. Technical Issues

1. Hardware
2. Operating Systems and DBMS
3. Database Design

E. Assessment of Net Changes

IX. Findings and Conclusions

A. High Impact Uses

1. Current/Planned
2. Potential

B. Use of Third Party Data

1. "Pure" Third Party Data
2. In-House/Proprietary Databases
3. Enhanced Public Data
4. Customized Databases

C. Role of Vendor Provision of Health Data

1. Current
2. Future

D. Future Megabase Directions

X. Recommendations

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HEALTH CARE MEGABASES

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* Includes objectives, database content, source of data, implementation characteristics, ongoing management, size and performance characteristics, organization(s) building and operating the database, as available

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- C. Role of Vendor Provision of Health Data
 - 1. Current
 - 2. Future
- D. Future Megabase Directions

X. Recommendations



Jan 11, 1995

To: Andrea cc. BG

Fm: TOF

Re: Revised Health Care Multiclient Prospectus

Attached is the hard copy of changes. Andrea: Shall I overnight the disk or is this just as easy to use? How soon can you have a draft to me?

Page 1 (cover). I am changing the overall "look and feel" by

- Dropping the subhead "The Future is Now" and the semi-meaningless graphic on the front. These, at best, restate the obvious.
- I have instead put the, hopefully self-explanatory, diagram on front to provide a little more meat (see attached).

Page 2 and 3. Prospectus

- "Background" is new. It does state the obvious, but concisely. It also says that all the people we are targeting should be interested if they know what's good for them.
- "Objectives": Hopefully, more pointed.
- "Scope": Revamped to be more concrete and to appeal more directly to the kinds of organizations we hope to sell to.
- "Methodology": Boiled down
- "Pricing": Omitted from body of prospectus. A separate sheet will give us more flexibility. It will be about the same as before. I will fax a modified version of the old one to you.

Page 4. Table of Contents (could start on page 3, depending on space and appearance)

This has been changed significantly based on feedback from prospects.

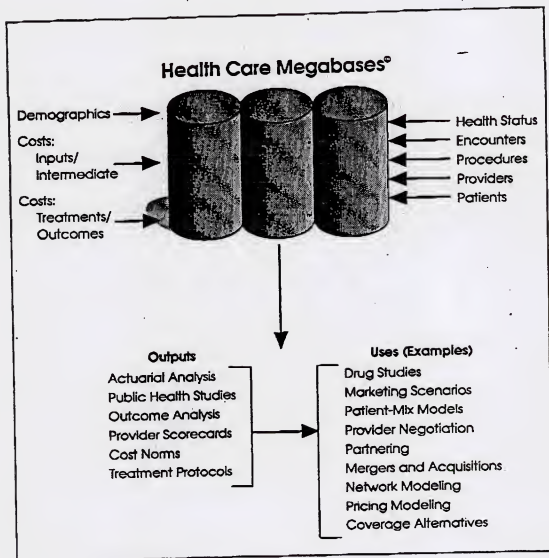
I would like to fit everything in a four page prospectus. (Everything can be dropped from the current page 4, except the office addresses and telephone numbers.)



INPUT

A SPECIAL STUDY

Health Care Megabases[®]



MEMORANDUM

To: Andrea
 From: Jean
 Subject: New Address - Notification
 Date: January 10, 1995

Andrea, our new address is going to be

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 Suite 250
 Vienna, VA 22182 - ~~2700~~ 3900

(703) 847-6870
 (703) 847-6872 (fax)

We will need a variety of printing done for us. I am sure you are aware what we need, since there have been several of the offices move. I will list what I can think of, but I am sure there are more that you will be aware of:

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3. Labels
4. Business cards for everyone who uses them
5. Noteheads
6. Purchase orders
7. News Release letterhead
- ✓ 8. Research Bulletin letterhead
- ✓ 9. Federal newsletter paper

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-500 copies

I would like to get a change of address form to send out ASAP. I think it is time we started sending these now that the lease is signed and our move is only three weeks away. We will start moving on the 27th, continue on the 28th and be all set up by Monday, January 30th.

I will get a rubber stamp done here at Staples where we get our supplies. I have a supply of forms from the post office so we are on our way.



HEALTH CARE MEGABASES

BACKGROUND

The entire health care system is being profoundly affected as managed care replaces fee-for-service medicine. A cause and effect of this change is the emergence of the health database as a critical success factor in the new health services environment. Every group is affected:

- Managed Care Organizations
- Traditional Insurers
- Hospitals and Other Institutional Providers
- Physician Groups
- Health Networks
- Pharmaceutical Firms
- Other Suppliers of Goods and Services
- Database Providers
- Systems Integration and Outsourcing Firms
- Governmental and Regulatory Organizations

The role of the health database is changing so much -- in kind and pervasiveness -- that INPUT has coined the term, **Health Care Megabase**, to highlight data's importance in the new environment.

OBJECTIVES

This study will provide a roadmap showing the impact of megabases on health care participants, both individually and collectively.

Sponsors of the study will receive facts, analysis and recommendations which are unavailable from any other source.

INPUT anticipates that the study will enable many sponsoring organizations to utilize data in new ways to help meet business and operations objectives.

SCOPE

The study will address these questions:

- How have health care databases turned into megabases? Why are they becoming so important?
- What types of megabases will be most important in 1996? In 2000?
- Which specific megabases are important now? What are their characteristics? What megabases are planned or projected? Are there megabase "gaps"? How can these gaps be filled?
- What will be the volume of megabase-related activity by the year 2000? What will megabase development, operation and maintenance costs be each year, from 1995 to 2000?

- To what extent will megabase development and support be performed in-house as opposed to third parties (both non-profit and for-profit third parties)?
- What are the advantages and disadvantages of in-house developed/operated megabases compared to those provided by third parties?
- What are the key variables and scenarios affecting megabase growth? What will be the relative importance of different growth factors, such as breadth and immediacy of information, transformation of public data, or proprietary content?
- How will managed care organizations increase their use of megabases?
- How will hospitals and other health care providers use megabases to improve their positions?
- Who are the major third party suppliers of megabase data now? What is the type and level of their activity? What new suppliers are likely to offer megabases? What are the strengths and weaknesses of current and potential suppliers?
- What are the incentives and barriers to in-house creators/suppliers of megabases becoming commercial suppliers?
- How will privacy and security factors affect megabase development?
- Which government actions could impact health megabases? What are the most likely actions to occur?

Other questions and issues will be raised by charter sponsors and others will flow from the study's analysis and findings.

METHODOLOGY/DELIVERABLES

The core of the study's methodology will be in-depth primary research conducted among 200-plus organizations, ranging from managed care organizations to health care consultants.

The study will describe and analyze over 100 megabases now in use or in an advanced stage of planning.

Charter sponsors of the study will have an opportunity to review and comment on the scope of the study and the content of the primary research questions. All sponsors will have access to the study team during the course of the study.

The study will take three months to complete. Sponsors will receive:

- A printed copy of the report. (See the preliminary table of contents in the next section.)
- A disk containing interview materials, database descriptions and forecasts. (Respondent identifiers and proprietary information will be masked on the disk and in the report.)
- Inquiry privileges after the report is published.

Fax 1 of 10

1

Jan 11

To: Andrea cc. BG

Fm: TOF

Re: Revised Health Care Multiclient Prospectus

Attached is the hard copy of changes. Andrea: Shall I overnight the disk or is this just as easy to use? How soon can you have a draft to me?

Page 1 (cover). I am changing the overall "look and feel" by

- Dropping the subhead "The Future is Now" and the semi-meaningless graphic on the front. These, at best, restate the obvious.
- I have instead put the, hopefully self-explanatory, diagram on front to provide a little more meat (see attached).

Page 2 and 3. Prospectus

- "Background" is new. It does state the obvious, but concisely. It also says that all the people we are targeting should be interested if they know what's good for them.
- "Objectives": Hopefully, more pointed.
- "Scope": Revamped to be more concrete and to appeal more directly to the kinds of organizations we hope to sell to.
- "Methodology": Boiled down
- "Pricing": Omitted from body of prospectus. A separate sheet will give us more flexibility. It will be about the same as before. I will fax a modified version of the old one to you.

Page 4. Table of Contents (could start on page 3, depending on space and appearance)

This has been changed significantly based on feedback from prospects.

I would like to fit everything in a four page prospectus. (Everything can be dropped from the current page 4, except the office addresses and telephone numbers.)

HEALTH CARE MEGABASES

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- Inquiry privileges after the report is published.

HEALTH CARE MEGABASES

Preliminary Table of Contents

- I. Introduction
 - A. Background
 - B. Methodology
- II. Why Megabases?
 - A. Changes in the Health Care Environment
 - B. Managed Care
 - C. Changes in Health Care IT
 - D. Impacts on Database Use
- III. Health Care Database Trends: 1995-2000
 - A. "Traditional" Databases vs. Megabases
 - B. Types of Use: 1995 and 2000
 - C. Data Mining
 - D. Resources Devoted to Databases: 1995-2000
 - 1. Volume/Size Measures
 - 2. Spending
 - E. Barriers to Use
- IV. Megabases: Managed Care Organizations
 - A. Major Uses/Payoffs
 - 1. Current
 - 2. Future
 - B. Functional Requirements (e.g., Underwriting, Negotiations)
 - C. Descriptions of Major Megabases (Includes objectives, database content, source of data, implementation/management, size and performance characteristics, source of database building and operations, as available.)
 - D. Resources Devoted to Databases: 1995-2000
 - 1. Volume/Size Measures
 - 2. Spending

* Includes objectives, database content, source of data, implementation characteristics, ongoing management, size and performance characteristics, organization(s) building and operating the database, as available

V. Megabases: Insurance Companies

- A. Major Uses/Payoffs
 - 1. Current
 - 2. Future
- B. Functional Requirements (e.g., Underwriting, Negotiations)
- C. Descriptions of Major Megabases (Includes objectives, database content, source of data, implementation/management, size and performance characteristics, source of database building and operations, as available.)
- D. Resources Devoted to Databases: 1995-2000
 - 1. Volume/Size Measures
 - 2. Spending

VI. Megabases: Providers

- A. Major Uses/Payoffs
 - 1. Current
 - 2. Future
- B. Functional Requirements (e.g., Patient Care, Negotiations)
- C. Descriptions of Major Megabases (Includes objectives, database content, source of data, implementation/management, size and performance characteristics, source of database building and operations, as available.)
- D. Resources Devoted to Databases: 1995-2000
 - 1. Volume/Size Measures
 - 2. Spending

* Includes objectives, database content, source of data, implementation characteristics, ongoing management, size and performance characteristics, organization(s) building and operating the database, as available

Obviously doesn't have to be repeated if all references on same page

VII. Megabases: Third Party Providers

A. Government

1. Descriptions of Major Databases Provided
(Includes objectives, database content, source of data, implementation/management, size and performance characteristics, source of database building and operations, as available.)
2. Cost, if applicable
3. Resources Devoted to Databases: 1995-2000
 - a. Volume/Size Measures
 - b. Spending

B. Non-Profit

1. Descriptions of Major Databases Provided
(Includes objectives, database content, source of data, implementation/management, size and performance characteristics, source of database building and operations, as available.)
2. Cost, if applicable
3. Resources Devoted to Databases: 1995-2000
 - a. Volume/Size Measures
 - b. Spending

C. Commercial

1. Descriptions of Major Databases Provided
(Includes objectives, database content, source of data, implementation/management, size and performance characteristics, source of database building and operations, as available.)
2. Cost
3. Resources Devoted to Databases: 1995-2000
 - a. Volume/Size Measures
 - b. Spending

* Includes objectives, database content, source of data, implementation characteristics, ongoing management, size and performance characteristics, organization(s) building and operating the database, as available

VII. Megabase Categories and Classification

- A. Classes of Megabases
- B. Megabase Characteristics
 - 1. Major Data Elements
 - 2. Data Sources
 - 3. Current/Projected Size
 - 4. Time Period Covered
 - 5. Enhancements/Transformations
 - 6. Major Analytic Tools/Processes
 - 7. Major Uses
 - 8. Benefits/Payoffs
- C. Classification of Megabases
 - 1. Matrix of Classes and Individual Databases, by Characteristics
 - 2. 100+ Classified

VIII. Privacy and Security

- A. Privacy Classes
 - 1. Individual Patient Data
 - 2. Grouped Patient Data
 - 3. Provider Data
- B. Factors Tending to Tighten Privacy Restrictions
 - 1. Legislation and Regulation
 - 2. Judicial Review
 - 3. Professional Groups
 - 3. Public Opinion
- C. Factors Tending to Loosen Privacy Restrictions
 - 1. Managed Care
 - 2. Improvements in Health Care Safety and Efficiency
- D. Technical Issues
 - 1. Hardware
 - 2. Operating Systems and DBMS
 - 3. Database Design
- E. Assessment of Net Changes

IX. Findings and Conclusions

- A. High Impact Uses
 - 1. Current/Planned
 - 2. Potential
- B. Use of Third Party Data
 - 1. "Pure" Third Party Data
 - 2. In-House/Proprietary Databases
 - 3. Enhanced Public Data
 - 4. Customized Databases
- C. Role of Vendor Provision of Health Data
 - 1. Current
 - 2. Future
- D. Future Megabase Directions

X. Recommendations

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U.S.A.
Tel. 1 (703) 847-6870
Fax 1 (703) 847-6872



METHODOLOGY

INPUT will interview 200 organizations that will be impacted by megabases — those that use, supply, interpret and mandate megabases. INPUT will interview:

- Hospitals and other provider groups
- Managed care organizations
- Insurers
- Pharmaceutical firms
- Federal and state policy makers, analysts and regulators
- Existing and potential health care megabase suppliers
- Health care information services and processing firms
- Health care consultants
- Health care applications software suppliers
- Systems integration firms
- DBMS software product and hardware suppliers

Clients who sign up before November 30, 1994 will be able to review and comment on the content and questions in the planned interviews.

INPUT will edit, tabulate and analyze the material obtained in the primary research and combine this with information obtained in prior research and analysis to prepare the report. (*See the preliminary Table of Contents of the report.*)

In addition to the report itself subscribers will receive:

- A disk containing the interview material in dBase III format for further client analysis. (Respondent identifiers and proprietary information will be masked.)
- Up to four hours of post-report inquiry per designated report recipient.

PRICING

The cost of one copy of the report with support and inquiry privileges is \$6,950 [\$8,500 after publication].

Each additional copy of the report may be ordered for other users at the address on the following terms:

- With support and inquiry privileges: \$1,500
- Without support and inquiry privileges: \$750

For an additional fee INPUT will provide an individualized presentation and/or assessment of a client's strategy, plans and offerings.

Handwritten text, possibly a signature or name, located in the lower center of the page.

OBJECTIVES

The study will describe how health care IT is changing — from a processing to a database driven environment. The study will focus on how and why providers, insurers and managed care organizations will make these changes.

For additional background on these changes, see the attached report, *The Impact of Changes in Health Care IT*.

SCOPE

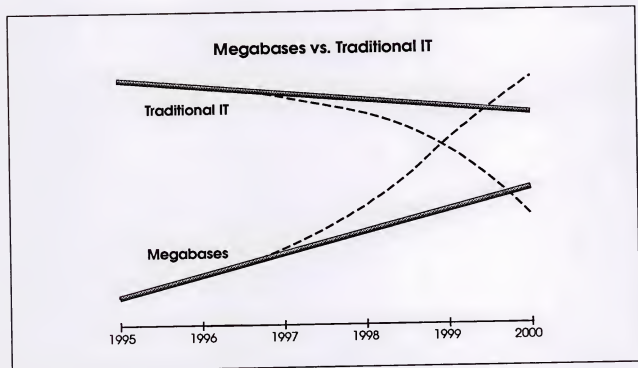
The study will answer the following questions:

- What are health megabases?
How are they used? Why are they becoming so important?
- What types of megabases will be most important in 1996?
In 2000?
- How large will megabase-related activities be by the year 2000?
How much will megabase development and maintenance cost?
- What are the key variables and scenarios that will affect megabase growth? How can megabase builders and users turn these scenarios to their advantage?
- What types of skills — organizational and personal — will be needed in a megabase environment?
- How will managed care organizations use megabases to optimize their operations?
- Will health care providers use of megabases be primarily defensive and reactive? What are their alternatives?
- What role will there be for commercial (for-profit) providers of megabases and megabase services?
- Which vendors are the most important suppliers of megabase-related software and hardware? Will there be a new breed of suppliers in five years?
- Which technical issues will most affect megabase development and use in the next three to five years? In the longer run?
- What are the potential actions which government can take that could impact health megabases? What are the most likely actions that will occur?

(See also the preliminary Table of Contents)



A S P E C I A L S T U D Y





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- Outsourcing Markets
- Information Services Vendor Profiles and Analysis
- EDI/Electronic Commerce
- U.S. Federal Government IT Markets
- IT Customer Services Directions (Europe)

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- Frequent bulletins on events, issues, etc.
- 5-year market forecasts
- Competitive analysis
- Access to experienced consultants
- Immediate answers to questions
- On-site presentations
- Annual conference

DATABASES

- Software and Services Market Forecasts
- Software and Services Vendors
- U.S. Federal Government
 - Procurement Plans (PAR, APRs)
 - Forecasts
 - Awards (FAIT)

CUSTOM PROJECTS

For Vendors—analyze:

- Market strategies and tactics
- Product/service opportunities
- Customer satisfaction levels
- Competitive positioning
- Acquisition targets

For Buyers—evaluate:

- Specific vendor capabilities
- Outsourcing options
- Systems plans
- Peer position

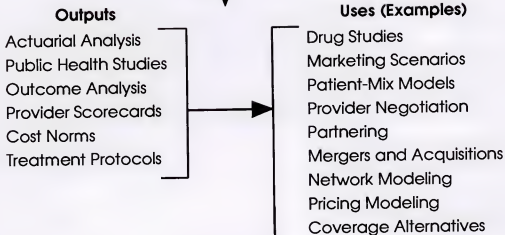
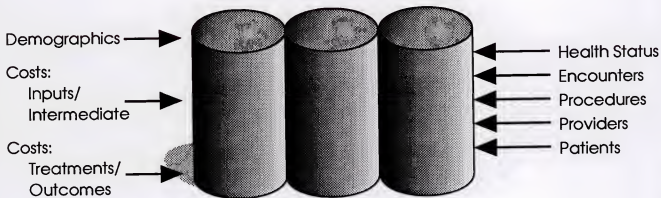
OTHER SERVICES

Acquisition/partnership searches



Health Care Megabases[®]

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- Physician Groups
- Health Networks
- Managed Care
- Insurers
- Pharmaceutical Manufacturers
- Government





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Health Care Megabases: The Future Is Now

PRELIMINARY TABLE OF CONTENTS

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- A. Background
- B. Methodology
- C. Related Reports

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- A. Changes in the Underlying Health Care Environment
- B. Changes in Health Care IT
- C. The New Health Care Business: Database Driven

III. The U.S. Health Care Environment

- A. The Historic Fee-for-Service Environment
- B. Managed Care Growth
- C. Health Insurance
- D. Effect of Legislative Mandates
 - 1. Federal
 - 2. State

IV. U.S. Health Care IT Trends: Next Ten Years

- A. Managed Care Organizations
 - 1. Impact of Underlying Business Growth
 - 2. Functional Requirements
 - a. Underwriting
 - b. Coverage/Service Design
 - c. Provider/Services Tracking
 - 3. Constraints
 - a. Business Related
 - b. Government/Regulatory
 - c. Technical
 - 4. Resources consumed: 1995-2000
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 - b. External
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 - 1. Resources Consumed: 1995-2000
 - a. Traditional Health Care-Related IT
 - b. Non- Traditional Health Care-Related IT
 - 2. Impact of Consolidation with Managed Care
 - 3. Impact of Associated Ventures

- C. Government
- D. Providers
 - 1. Reactions
 - 2. Initiatives
 - 3. Overall Requirements
 - 4. Financial Applications
 - a. Changes: Type and Amount
 - b. Resources Consumed: 1995-2000
 - i. Internal
 - ii. External
 - 5. Patient Care/Operations Applications
 - a. Changes: Type and Amount
 - b. Resources Consumed: 1995-2000
 - i. Internal
 - ii. External
- E. Summary of Impacts

V. Megabase Drivers

- A. Impacts of Health Care and Health Care IT Changes
- B. Data Mining: Overview
- C. "Mineshafts" (Business and Operations Requirements)
 - 1. Actuarial Studies
 - 2. Service Outcome Analysis
 - 3. Provider Scorecards
 - 4. Provider Network Modeling
 - 5. Geographic/Demographic Analysis
 - 6. Marketing Planning
- D. Differences in Strength of Drivers by Class of Megabase User

VI. Megabase Implementations

- A. Current Implementations
 - 1. Case Studies
 - a. Objectives
 - b. Database Content
 - c. Database Implementation/Management
 - d. Size and Performance Characteristics
 - e. Responsibility for Database Building and Operations

more...

- B. Planned Implementations
 - 1. Case Studies/Descriptions
 - a. Objectives
 - b. Database Content
 - c. Database Implementation/Management
 - d. Size and Performance Characteristics
 - e. Responsibility for Database Building and Operations
- C. Future Directions

VII. Health Care Megabases: Scope of Content

- A. Current Megabases (*classified by content type and physical size*)
- B. Future Megabases
 - 1. Planned Megabases (*classified by content type and physical size*)
 - 2. Evaluation of Unmet Needs
 - 3. Potential Future Needs

VIII. Health Care Megabase Spending: 1995-2000

- A. Internally Developed and Maintained Megabases
 - 1. Characteristics
 - 2. Size of Investment and Operations Resources
- B. Third-Party Megabases: Non-Profit and Government Sponsors
 - 1. Characteristics
 - 2. Comparisons with Internally-Developed Megabases
 - 3. Size of Investment and Operations Resources
- C. Third-Party Megabases: Commercial
 - 1. Characteristics
 - 2. Rationale for Commercial Megabases
 - 3. Differences Compared to Other Megabase Types
 - 4. Market Size and Growth Scenarios

IX. Privacy and Security Issues

- A. Privacy Classes
 - 1. Individual Patient Data
 - 2. Patient Class/Grouping Data
 - 3. Providers
 - a. Public Databases
 - b. "Private" Databases
 - c. Individual Providers
 - d. Provider Classes/Groups

- B. Drivers
 - 1. Balance Effects of Discrimination vs. Economic Loss vs. Safety vs. Efficiency
 - 2. Public Policy/Legislation
 - 3. Legal Challenges
- C. Strategies
 - 1. Business
 - 2. Proactive/Cooperative
 - 3. Defensive/Reactive
- D. Implementation
 - 1. Objectives
 - 2. Design
 - 3. Firewalls
 - 4. Technology and Privacy (*see also Section X*)
 - a. Database/Computer Hardware
 - b. Software
 - c. Networks/Communications

X. Health Care Megabases: Technical Factors

- A. Database Design
 - 1. Design Issue: Megabases vs. Large Databases
 - 2. Very Large Networked Databases
 - 3. Methodologies and Tools
- B. DBMS Software
 - 1. Applicability of Current Products
 - 2. Planned Products
 - 3. Product Gaps and Future Requirements To and Beyond 2000
- C. Hardware Issues and Requirements
 - 1. Standard Hardware Requirements and Alternative Configurations
 - 2. Specialized Hardware
 - a. Parallel Processors
 - b. Optical Storage: Pros and Cons
 - c. Networks
 - 3. Product Gaps and Future Requirements To and Beyond 2000
- D. Performance Factors
 - 1. Operating Issues
 - 2. Access and Standard Reporting
 - 3. Non-Standard Reporting
 - 4. Data Corruption: Prevention and Fixes
 - 5. Physical Backup and Security

XI. Conclusions

XII. Recommendations

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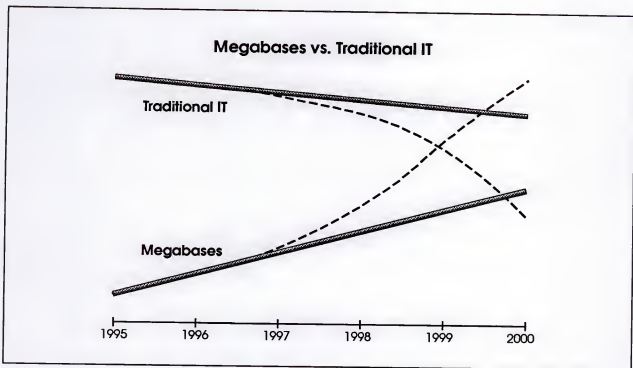
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METHODOLOGY

INPUT will interview 200 organizations that will be impacted by megabases — those that use, supply, interpret and mandate megabases. INPUT will interview:

- Hospitals and other provider groups
- Managed care organizations
- Insurers
- Pharmaceutical firms
- Federal and state policy makers, analysts and regulators
- Existing and potential health care megabase suppliers
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- Health care consultants
- Health care applications software suppliers
- Systems integration firms
- DBMS software product and hardware suppliers

Clients who sign up before November 30, 1994 will be able to review and comment on the content and questions in the planned interviews.

INPUT will edit, tabulate and analyze the material obtained in the primary research and combine this with information obtained in prior research and analysis to prepare the report. (*See the preliminary Table of Contents of the report.*)

In addition to the report itself subscribers will receive:

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OBJECTIVES

The study will describe how health care IT is changing — from a processing to a database driven environment. The study will focus on how and why providers, insurers and managed care organizations will make these changes.

For additional background on these changes, see the attached report, *The Impact of Changes in Health Care IT*.

SCOPE

The study will answer the following questions:

- What are health megabases? How are they used? Why are they becoming so important?
 - What types of megabases will be most important in 1996? In 2000?
 - How large will megabase-related activities be by the year 2000? How much will megabase development and maintenance cost?
 - What are the key variables and scenarios that will affect megabase growth? How can megabase builders and users turn these scenarios to their advantage?
 - What types of skills — organizational and personal — will be needed in a megabase environment?
 - How will managed care organizations use megabases to optimize their operations?
 - Will health care providers use of megabases be primarily defensive and reactive? What are their alternatives?
 - What role will there be for commercial (for-profit) providers of megabases and megabase services?
 - Which vendors are the most important suppliers of megabase-related software and hardware? Will there be a new breed of suppliers in five years?
 - Which technical issues will most affect megabase development and use in the next three to five years? In the longer run?
 - What are the potential actions which government can take that could impact health megabases? What are the most likely actions that will occur?
- (See also the preliminary Table of Contents)

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METHODOLOGY

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The Impact of Changes in Health Care IT

The thesis of this paper is that changes are underway in U.S. health care information technology (IT) that will dwarf all prior changes.

- These changes are directly driven by changes in the health care system itself.
- The IT changes will, in turn, act as accelerants to further changes in health care, which will feed back to health care IT.

Health Care Changes

For the past two years a discussion of any health care changes revolved around politically sponsored changes.

Change in health care via federal-level politics is more-or-less dead.

- "Health care reform" turned into the politics of painlessly increasing health insurance coverage.
- Since there are no ways to significantly increase health insurance coverage without pain, the various efforts canceled out.
- The resulting turmoil and political burnt fingers will probably delay significant political initiatives in health insurance or health care for several political generations (i.e., five or six years).

A common conclusion, then, is that it's back to business as usual in health care (and health care IT). That is, relations between patients and



providers of care will be essentially unchanged, and the health care proportion of the GNP will continue its inexorable climb.

However, business-as-usual includes the "quiet revolution" of managed care organizations:

- The "pure" HMOs and IPAs, now account for over 25% of patients with insurance coverage.
- In addition, there are ever-growing numbers of pseudo-HMOs and other networks responding to the challenge of HMOs.

The marketplace critical mass is now shifting from traditional fee-for-service medicine to the managed care environment.

INPUT believes there will be significant changes in health care, health insurance and health care IT as a result of market-based changes. Ironically, these changes may very well be larger than politically inspired changes.

"Traditional" Health Care IT

Traditional health care IT has been primarily driven by the demands of fee-for-service reimbursement.

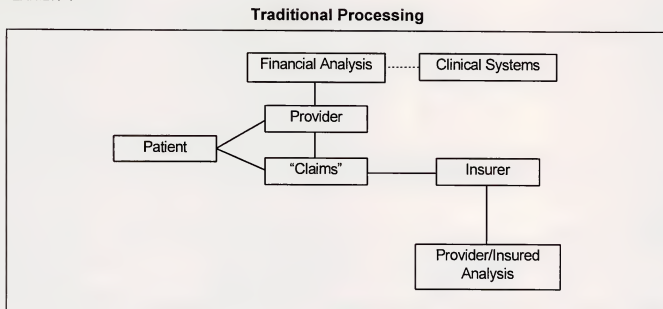
- Health insurers are in the middle of a very complex system of submitting claims for reimbursement of specific services.
- Much of the activity of insurers is focused on establishing whether a specific service for a specific patient should be reimbursed (either to the patient or the provider of care).
- Providers (generally hospitals) have set up (or are forced to set up by cost-driven reimbursers) very elaborate cost-finding systems that measure every provider activity and allocate costs accordingly. Providers, in turn, seek to "tweak" the systems to maximize their reimbursements.
- These activities place an administrative "tax" of about 8% on health care expenditures without much, or possibly any, positive impact on patient care, outcomes or efficiency.

A considerable amount of this "tax" (between one third and one half) is spent on IT (either in-house or supplied by an information services provider).

There is also considerable IT activity in clinical systems (e.g., orders, lab, inventory management). However, these so far have not demonstrated significant impacts on efficiency or patient care; clinical systems have not been central to providers' well-being the way that reimbursement systems are.

Exhibit 1 illustrates this traditional processing environment.

EXHIBIT 1



IT in a Managed Care Environment

In a managed care environment the traditional, reimbursement-driven processing more-or-less goes away. Does IT also shrink? INPUT sees the reverse occurring: the role of IT changes from event-driven *processing* to the management of very large *databases*.

There are several key characteristics of IT in this database environment:

- The "underwriting" function becomes critical for a managed care organization.
 - Each managed care organization must have group selection criteria that maximize its position in the marketplace.
 - This applies equally to understanding the characteristics of each covered family/person.
- The database of past services, demographics and provider characteristics will enable managed care organizations to design service packages that are both cost-effective and appeal to the largest number of prospective customers ("customers" are a combination of individuals, employer units and other insurers).
- Providers of service must be rigorously tracked and monitored. (This monitoring applies equally to providers controlled by the managed care organization and those that it contracts with.) Monitoring includes such activities as:
 - Costs
 - Outcomes
 - Patient care practices
 - Efficiency of delivery
 - Patient satisfaction

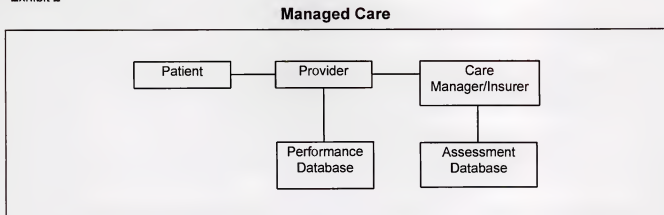
At the least, providers must have access to the same kind of information and analysis, if only to defend themselves at the time of negotiation with managed care organizations. The more advanced providers (i.e., the survivors) will want to be more proactive in their use of databases. E.g.:

- Unification of "financial" and "clinical" systems
- Cost/profitability modeling
- Provider network modeling
- Marketing

This new environment is deceptively simple in schematic form (Exhibit 2). In practice, initiating, maintaining and mining these databases will be complex and difficult.



Exhibit 2



Health Care Megabases

As these databases develop further, they will become very large as:

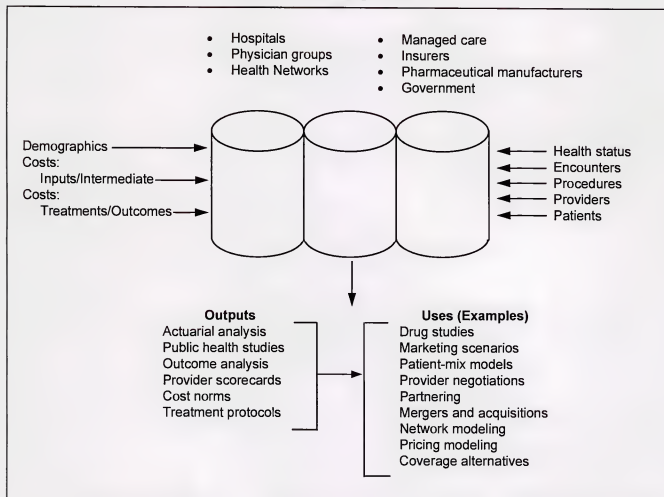
- Data becomes more available.
- Users understand better how to "mine" and apply the data.
- Competition increases the use of data.

There are some analogous databases already well established in other business areas, such as credit or insurance databases.

However, managed care-driven databases will be several orders of magnitude larger and more complex. Because of this, INPUT has coined the term, *health care megabase*[®] to bring home the level of change that is underway. A schematic is shown in Exhibit 3.



Exhibit 3

Health Care Megabases[®]

The megabase-driven world will have both winners and losers with, hopefully, the winners predominating. The period of transition itself promises to be a painful one for both users, creators and operators of health care megabases since the journey will, in large part, be into uncharted territory.

