



# The Impact of E-Path Technology on the Ontario Cancer Registry Operations

Presented at the NAACCR 2002  
Cancer Informatics Workshop  
Toronto, Ontario  
June 2002



Darlene Dale  
Manager, Ontario Cancer Registry  
Cancer Care Ontario



Pathology LIS



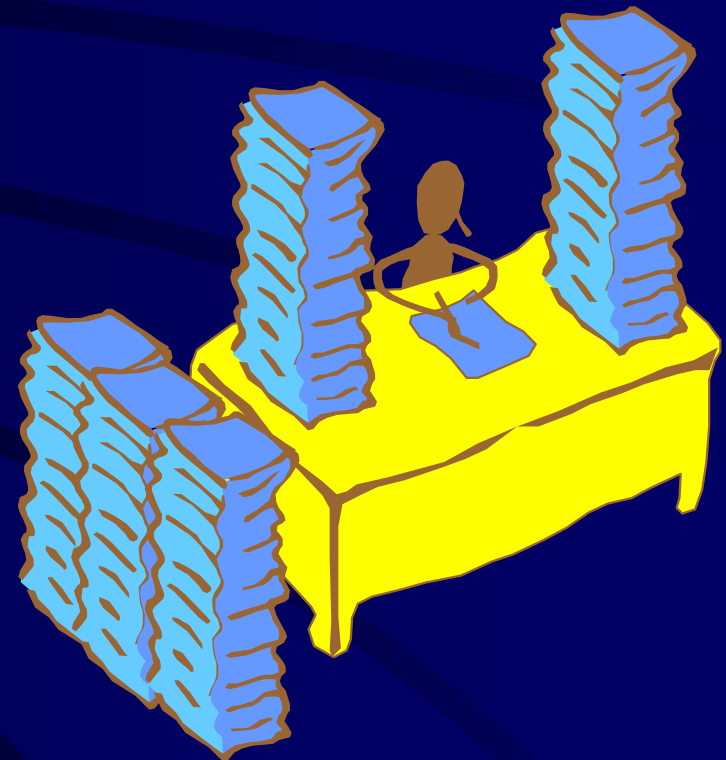
EDI



PIMS

# Outline

- ◆ Overview, Ontario Cancer Registry
- ◆ Problems with Paper Pathology Processing
- ◆ Evaluation of PIMS
- ◆ Current Status
- ◆ Conclusions



# Ontario Cancer Registry

## Current Operations

Register all invasive neoplasms:  
ICD-9 sites 140-208  
excluding 173

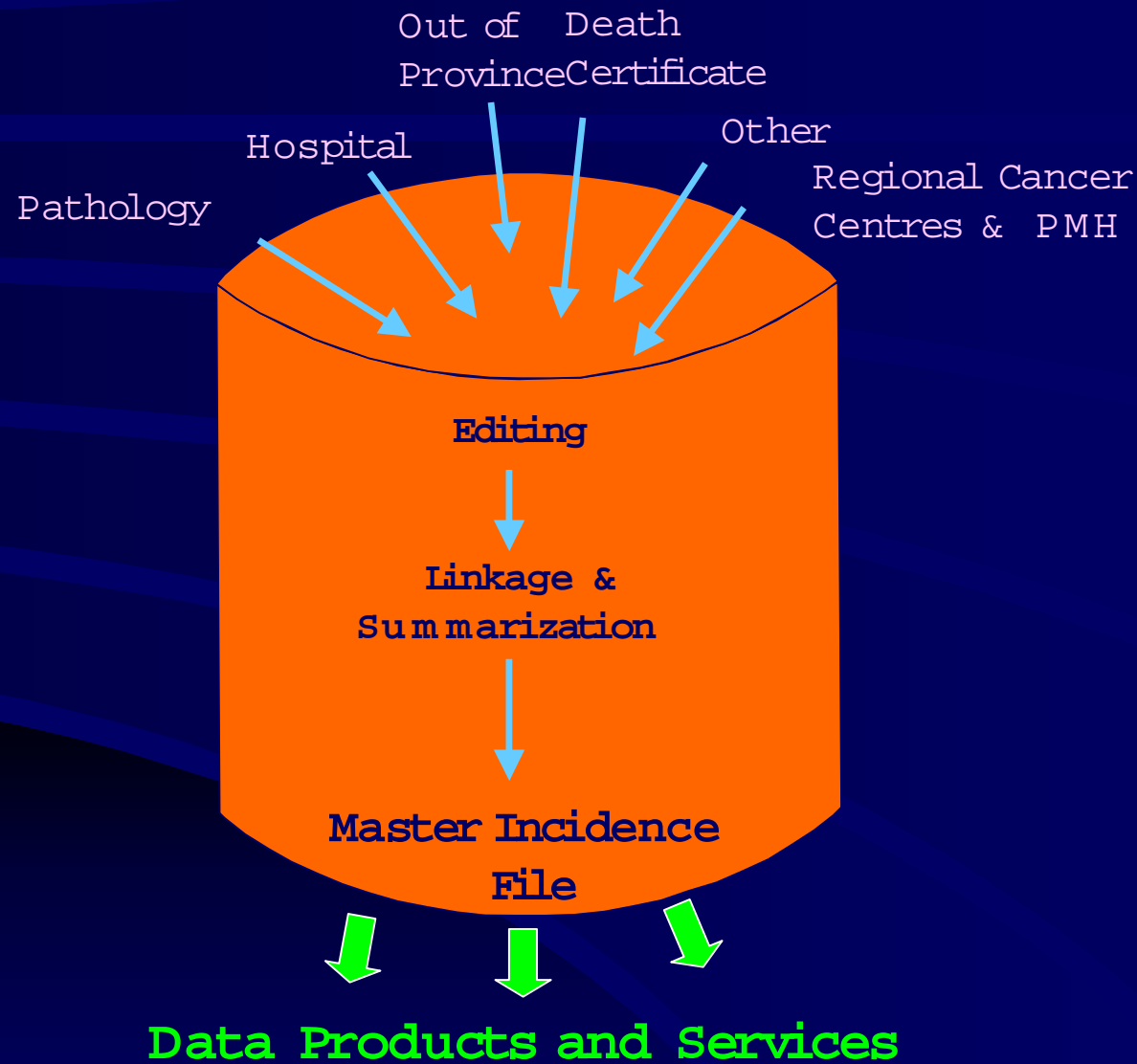
1964-2000  
1,229,583  
incident cases



9,841,493  
individual  
source records

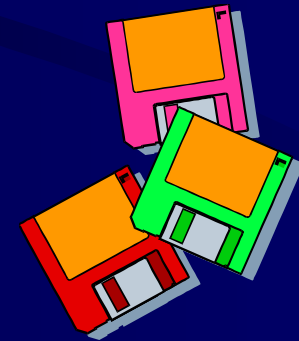
51,608  
cases in 2000

# OCR Processing Steps



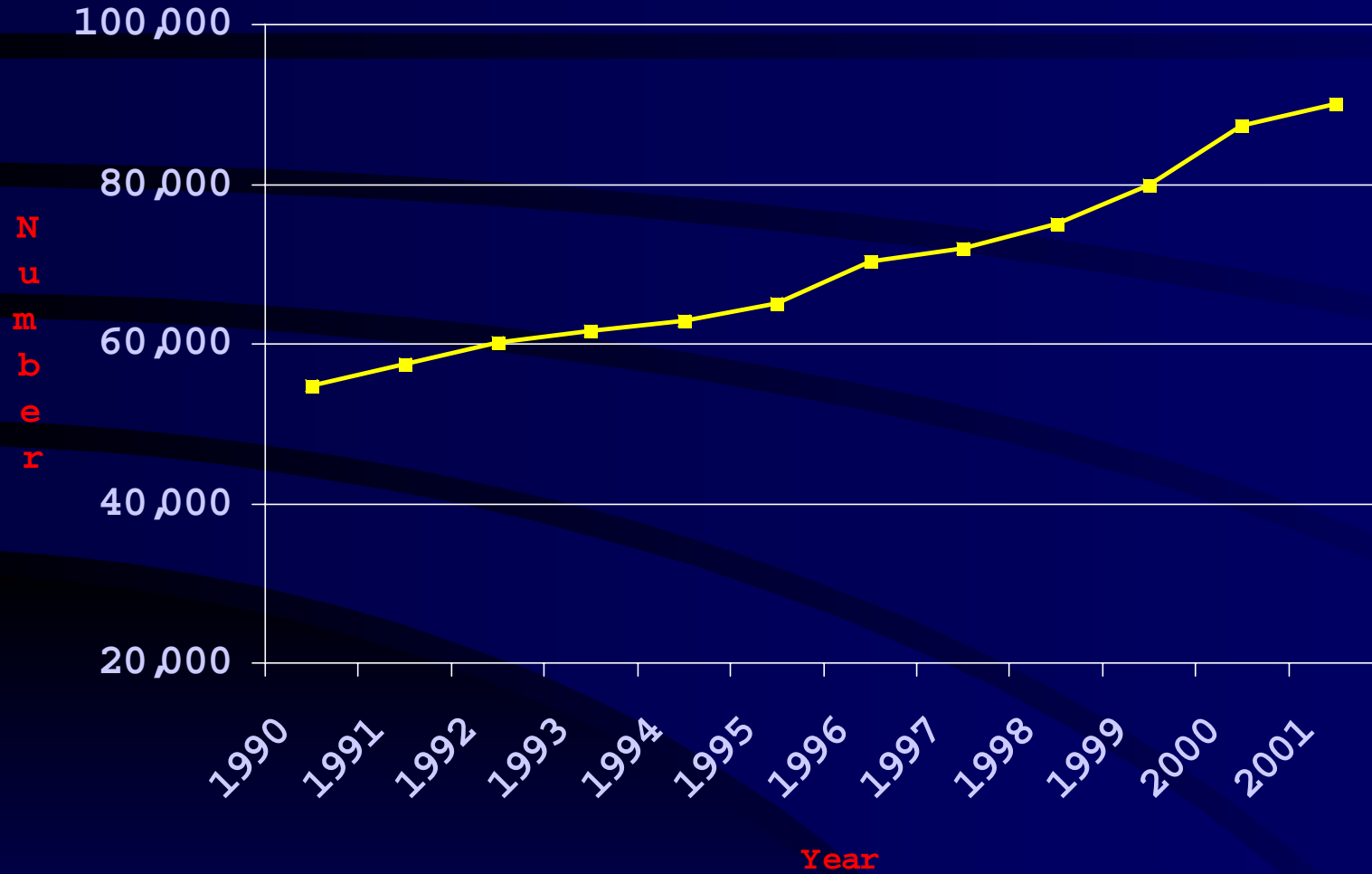
# Current Pathology Processing

- ◆ Entry of demographic and cancer diagnosis information from 85 anatomical pathology labs, ~ 90,000 paper reports in 2001
- ◆ Problems
  - ◆ missing reports
  - ◆ delays in receiving the reports
  - ◆ missing information on reports sent
  - ◆ labs no longer want to send paper
  - ◆ retrieval costs

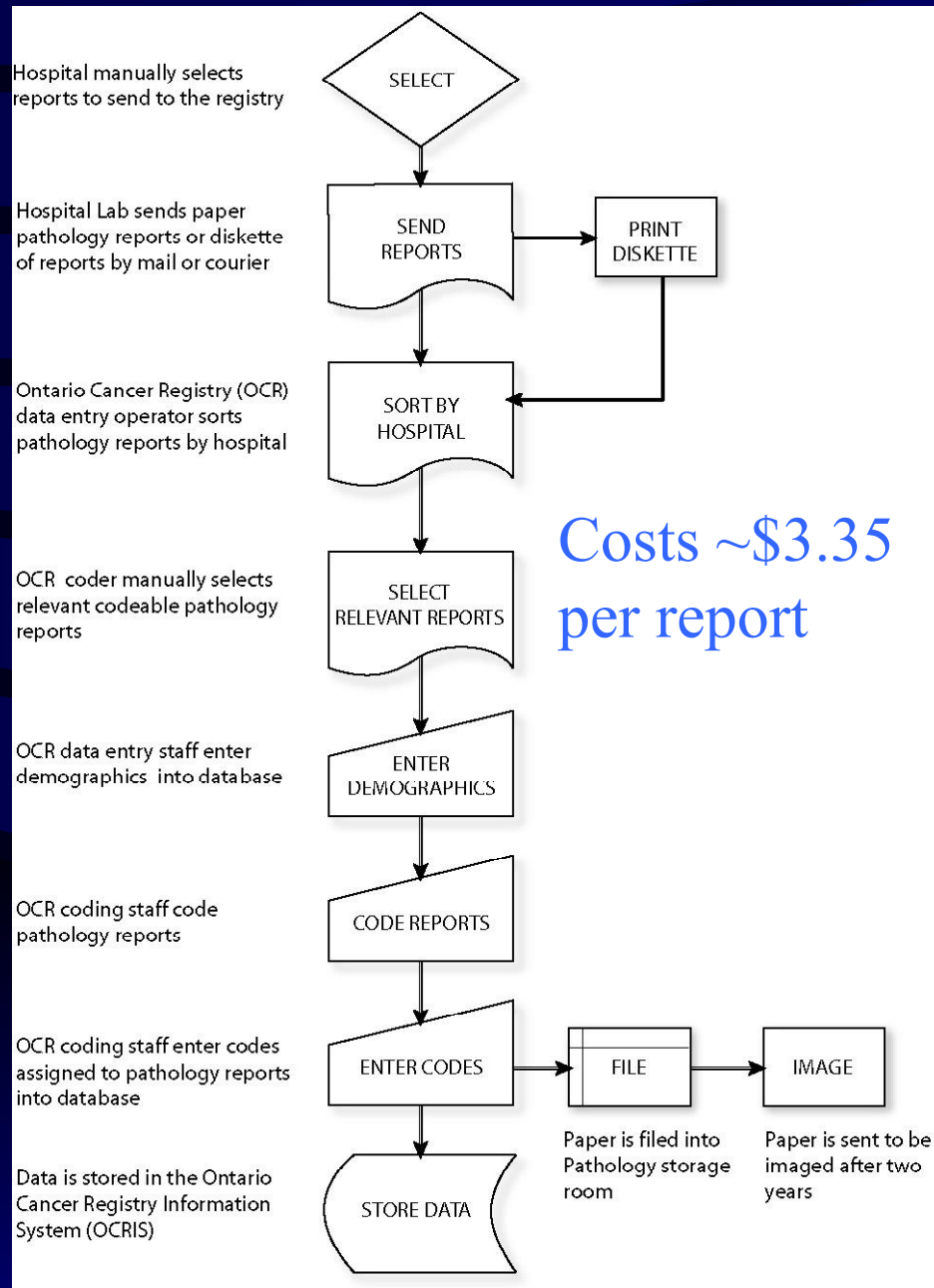


# Number of Pathology Reports

By Year  
1990 to 2001



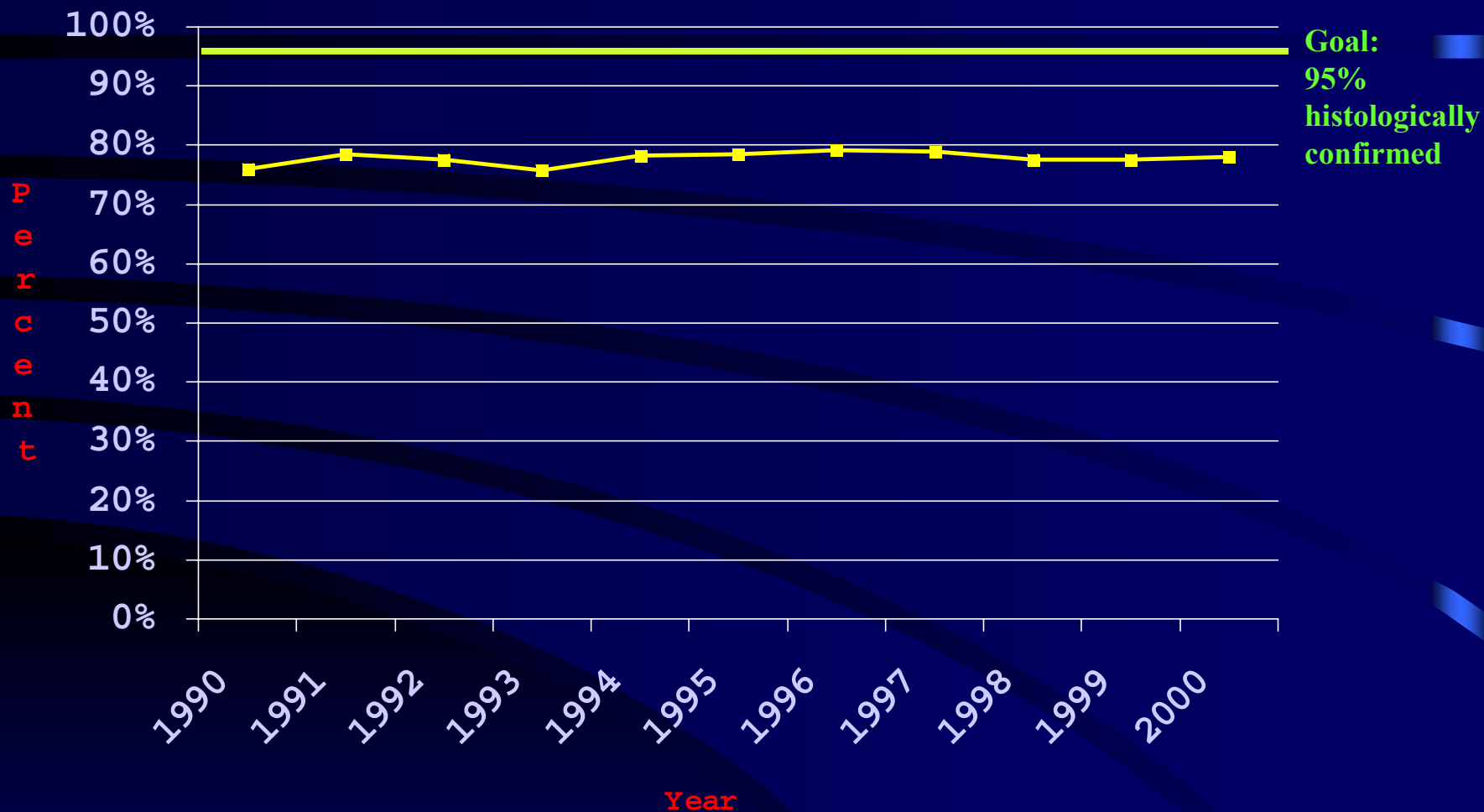
# Paper Processing



# Cases with Histological Verification

## Presence of a Pathology Report

1990 to 2000





# Pathology Information Management System (PIMS)

## Purpose

- ◆ To improve the **timeliness, completeness** and **quality** of pathology reporting to the Ontario Cancer Registry.
- ◆ To **reduce the costs** of processing pathology reports for the labs and the Ontario Cancer Registry.

## How

A network connecting pathology laboratories throughout Ontario with the Ontario Cancer Registry; the network is **rapid, hands free** and **highly secure** including comprehensive auditing and acknowledgement mechanisms.

## Funding

Pilot Project through Health Canada's Health Infostructure Support Program (HISP) April 1999 to March 2001

# Filter-For Case Finding

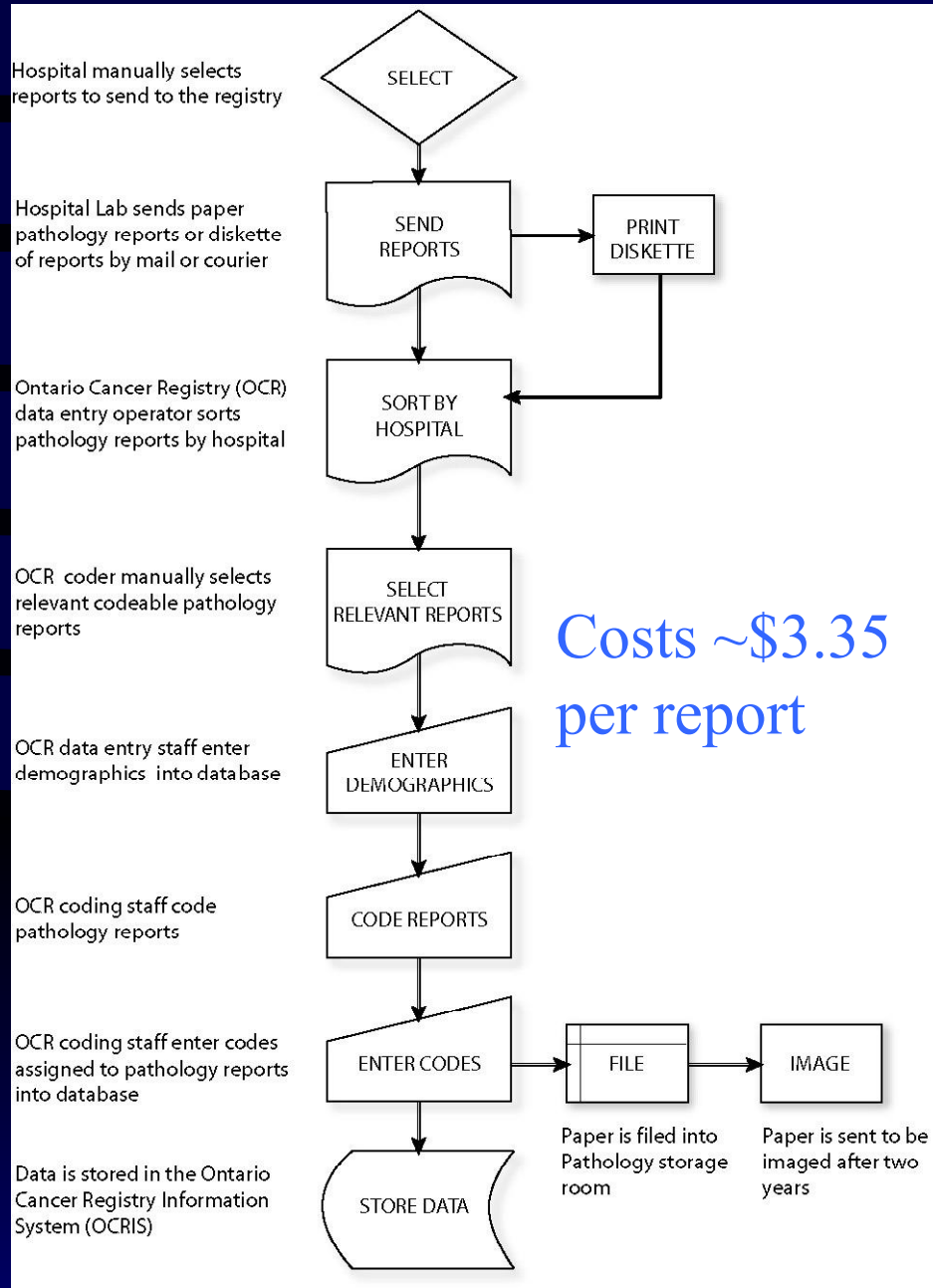
- ◆ Filtering at each lab using a SNOMED/ICDO-2/3 auto-coding engine integrated with the EDI.
- ◆ Transforms the text in the path report to topography and morphology codes.
- ◆ Automated filtering logic examines these T & M codes , then based on registry reporting requirements selects reports for submission to the registry.

# Evaluation-Pilot Test

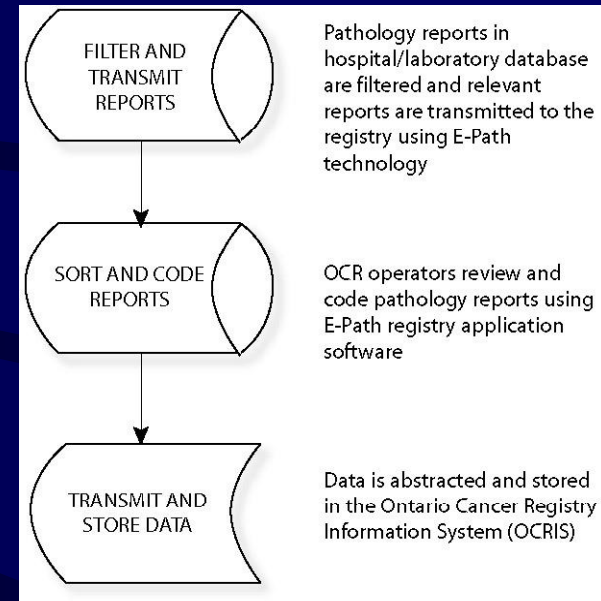
## Paper Versus Electronic Filter

Laboratory	Percent Missed By Paper
<b>Lab A, January 1999</b>	<b>17.1%</b>
<b>Lab A, October 1999</b>	<b>124.7%</b>
<b>Lab B, January 1999</b>	<b>8.2%</b>
<b>Lab B, October 1999</b>	<b>10.2%</b>
<b>Lab C, January 2001</b>	<b>21.7%</b>
<b>Lab C, October 2001</b>	<b>108%</b>

# Paper Processing



# Electronic Processing



**Costs  
~\$1.63  
per report**

# Comparison of Timeliness in Pathology Reporting

(From Date of Surgery until Received by the OCR)

August 1, 2002 to October 31, 2001

	Paper-Based	E-Path
Mean (weeks)	5.1	1.3
Median (weeks)	4.7	0.9

# Comparison of Timeliness in Pathology Reporting

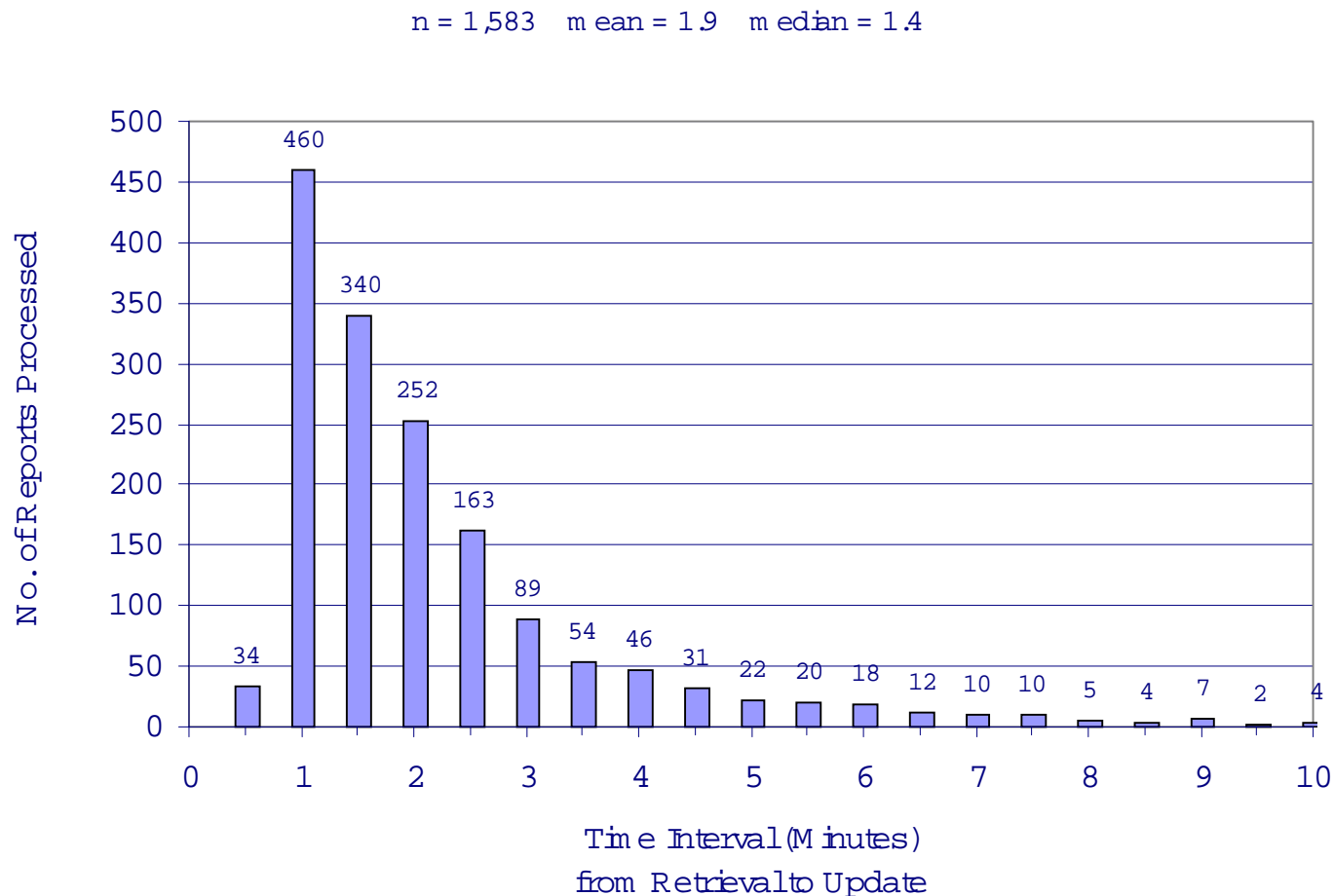
(From Date of Surgery until Processed by the OCR)

August 1, 2001 to October 31, 2001

	Paper-Based	E-Path
Mean (weeks)	10.8	1.9
Median (weeks)	10.9	1.4

# Time Taken to Review/Code Electronic Pathology Reports Using E-Path

August 1, 2001 to October 31, 2001



# Quality of Reports

## Additional Variables

- ◆ Complete Date of Birth, rather than Age
- ◆ Health Insurance Number
- ◆ Complete Address including
  - ◆ street
  - ◆ city
  - ◆ postal code
- ◆ Physician Information;
  - ◆ Name of Pathologist
  - ◆ Name of Surgeon, Attending



# Current Status

- ◆ Working with 6 additional labs, 3 are very large ~11,000 reports annually
- ◆ Operate in ICD-O-3
- ◆ Improving Filter
  - ◆ Dealing with Negative Terms
- ◆ Look at completeness of cancer incidence reporting by the labs in PIMS, histological verification

# Current Status - Cont'd

- ◆ Coding Consistency Audit
  - ◆ Between the 2 PIMS coders for the same path reports
  - ◆ Between PIMS coders and non-PIMS coders for the same path reports
- ◆ Newfoundland, through Colo-rectal research grant, hook up all 7 labs in the Province



# Conclusions



- ◆ E-Path reporting works:
  - ◆ Improves the **timeliness** of reporting from date of surgery until receipt in the OCR.
  - ◆ Improves the **completeness** of reporting, getting all the relevant cancer reports, in-situs, standard case finding tool
  - ◆ **streamlines** the processing of the reports
  - ◆ Improves the **quality** of the reports, complete data elements; date of birth, postal code, health insurance number
  - ◆ **Standardized format** of reports, assist with staging, can accommodate synoptic reporting
- ◆ However needs the complete support of the labs in order for a timely and efficient connection with the labs.
- ◆ Need to have the majority of labs connected to see the real benefit.

# Demonstration

