

Action	Current work flow	Potential work flow with automated system	Benefits with Automated system
REFERING OFFICE	Specimen collected from patient and slide prepared; requisition form filled out (typed or hand written) to be sent to the laboratory with the specimen; this process repeated with each Pap smear.	Office utilizes menu-driven form generator program to prepare floppy disk and human readable/computer scannable requisition form; Computer program prompts for information to avoid incomplete forms or partial patient data; Office checks for accuracy prior to sending to laboratory; patient data file available to requisition future Pap tests and to manage patient recall	Provides easier in-office generation of requisition forms Assures completion of all necessary patient information Assures more accurate patient data for laboratory. Offers customer convenience as value added service from laboratory.
SPECIMEN LOG IN	Laboratory staff logs in specimen; data/time stamp requisition form; checks name on requisition form, writes accession number on slide(s) and sends slide(s) for staining; transfers information on form to work sheet to accompany slide(s) through scanning process; calls referring office to check spelling and DOB on forms not clearly written or request additional patient information if form incomplete; calls up patient history(ies) from LIS for correlation; reassembles stained slide(s) with work sheet and requisition form.	Upon receipt in laboratory, stain resistant bar code labels are affixed to requisition form and slide(s); Requisition form data scanned in or downloaded from floppy disk; Automatic date/time notation; Automatic call up of patient history(ies) from LIS for correlation; Data verified for accuracy; Bar coded slides sent for staining.	Assures positive specimen identification and patient/specimen correlation throughout; Automates data entry into system; Documents time, Accesses patient history for use by cytotechnologist during scan; Provides accuracy check; Ensures positive slide identification
WORK ALLOCATION	Reassembled slides and work sheets are allocated to cytotechnologists (CT), slides loaded into cardboard trays for transport to CT along with corresponding work sheets.	System designates work allocation to each CT, subject to pre-set criteria as to number, level of risk, rescreens, etc.; Slides loaded into initialized cassette For transport through entire screening process.	Automates work allocation to CTs; Identifies slide batch by operator, Facilitates slide transport and handling

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PRIMARY SCREENING	CT receives tray of slides, removes slides one at a time, verifying patient name and number of slides with work sheet information; refers to patient history; loads each slide on to microscope stage; manually scans material in pattern to be sure all specimen material on slide is screened; manually adjusts focus and magnification as needed.	<p>CT receives cassette of slides, loads cassette into system;</p> <p>Each slide loads on to microscope automatically,</p> <p>Using bar code to bring up patient data on screen;</p> <p>Automatic scan of each slide in pre-set pattern/speed with designated overlap of field;</p> <p>Power adjustment of focus and magnification</p>	<p>Provides easy handling of slides at work station;</p> <p>Automates slide loading for convenience and verifies specimen ID;</p> <p>Gives easy access to patient data;</p> <p>Automates scanning process and Assures 100% screening</p> <p>Minimizes operator fatigue.</p>
CELL ANALYSIS	CT notices suspect material, interrupts patterned scan for analysis; adjusts focus and/or magnification to examine suspect material, examines neighborhood for relative material; uses reference for assistance in determining cell type, if necessary; manually dots suspect material with a pen to identify location for referral and later review; makes notes on suspect area; resumes patterned scan for completion of specimen screening.	<p>CT notices suspect material, easily moves from automated scan to mouse controlled manual scan of suspect material and neighborhood;</p> <p>Uses mouse to adjust focus and/or magnification to examine material;</p> <p>Immediate access to on-line reference guide with related patient data automatically flagged for CT attention,</p> <p>Electronic memory of both XY coordinates and focus as well as physical dotting of suspect material:</p> <p>Resumes auto scan at point of interruption.</p>	<p>Provides seamless technology for automated and self directed scanning;</p> <p>Offers comfortable and convenient control of microscopy;</p> <p>Provides customized guide for cell comparison and instant access to relevant patient data;</p> <p>Automates recall of suspect material and saves time in dotting material;</p> <p>Assures no material missed on specimen.</p>
SLIDE DISCHARGE	<p>CT makes determination about cell material and specimen, writes findings on work sheet; removes slides from microscope and loads it into cardboard for</p> <p>filing (normal) or review (suspicious for abnormality)</p>	<p>CT makes determination about cell material and specimen and inputs findings into data management system with free text or</p> <p>Using mouse to click on customized classification menu;</p> <p>Auto discharge of slide</p> <p>Automatic slide sorting with „normal“ slides going back into main cassette and „review“ slides going into review cassette module for further processing</p>	<p>Provides immediate data capture at point diagnosis</p> <p>Offers quick and error free nomenclature for patient report</p> <p>Automates slide handling;</p> <p>Provides automatic slide sorting for maximum laboratory productivity</p>

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REVIEW OF ABNORMALS	Supervisor receives slides and sorts for „normal“ and „review“ categories, checks to assure work sheets and slides still together;	Supervisor receives sorted cassette, with assurance of correlation between slide and CT assessment through bar coding	Provides immediate access to CT diagnosis
	Examines suspect material in review slides (loads slide onto microscope, locates dotted material, adjusting microscope focus and magnification); examines specimen for additional material, dotting material with distinctive color of mark, and writes comments and new or modified diagnosis on work sheet; refers to cytopathologist for review, diagnosis and sign out.	<p>Loads review cassette module for automatic loading of slides</p> <p>Call up of patient information and</p> <p>Recall of suspect material at predesignated focus;</p> <p>Supervisor dots additional suspect material with differentiation of electronic and physical dots;</p> <p>Rotes review cassette module to cytopathologist for auto review.</p>	<p>Facilitates easy slide review.</p> <p>Access to patient data and</p> <p>Relocation of review material in focus;</p> <p>Tracks identification by operator of all diagnosis, dotting and comments;</p> <p>Facilitates referral through laboratory work flow.</p>
DIAGNOSIS AND SIGN OUT	Cytopathologist receives slides for review, checks work sheet and refers to patient history for background information; notes location of market material of primary screener as well as supervisor, loads slide onto microscope and locates market material for review, adjusting focus and magnification; explores other slide material for additional information; makes diagnosis and indicates findings on work sheet; dictates findings for final report; returns slide and work sheet to supervisor for filing, sends dictation to clerical staff for typing final report.	<p>Cytopathologist receives review cassette module for automatic loading of slides as well as</p> <p>Bar code calls up patient data and relocation of suspect material at designated focus;</p> <p>Uses mouse controlled manual override to explore additional area;</p> <p>Makes diagnosis and indicates findings in data system for optional immediate sign out;</p> <p>Slide returned to cassette, with data system updated automatically and</p> <p>Report printed or transmitted immediately</p>	<p>Provides easy review mode for time savings and</p> <p>Ensures accurate communication of all diagnostic information from previous reviewers;</p> <p>Allows easy manual use,</p> <p>Offers immediate release of diagnosis from pathologist workstation;</p> <p>Facilitates slide handling throughout and Maintains integrity in patient data and</p> <p>Provides immediate access to patient report</p>

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10% NEGATIVE RESCREEN	Supervisor selects slides for 10% negative rescreen (random selection and target high risk); rescreens selected slides, dotting with different color from original screener; adds comments along with new or modified diagnosis to work sheet.	Automatic selection of slides for 10% rescreen (both random and target high risk); Supervisor rescreens selected slides, with both electronic and physical dotting differentiated by dotter; Supervisor inputs comments and diagnosis into system	Assures desirable mix for rescreen, by random and high risk categories; Tracks diagnosis and dotting by operator; Immediate update of patient data report out purposes.
PATIENT REPORTING	Clerical staff types final report or inputs data into report generator program; report printed/returned to supervisor and cytopathologist for review, correction/verification and sign out.	Customized reports automatically generated with Optional sign out at cytopathologist or supervisor work station.	Improves turn around time and customer service and Allows immediate access to patient diagnosis at sign out.
COMPLIANCE REPORTING	Manual record keeping of laboratory operation relative to 1) CT functioning, including number of slides screened, time spent per day in screening, correlation of screening with diagnosis, retrospective correlation with previous patient material (cytology/histology) and 2) lab functioning, including turn around time, number of slides screened and rescreened, statistical breakdown by diagnosis category, CT and referring office/MD; correlation between prescreening and sign out.	Automatic recording of laboratory operation relative to 1) CT functioning including slides screened, time per slide, % screened, dotting relative to slide location, result by time of day screened, correlation with sign out relative to over and under call, retrospective correlations and 2) lab functioning, including turn around time, number of slides screened and rescreened, statistical breakdown by diagnosis category, CT and referring office/MD; correlation between prescreening and sign out.	Provides capture and documentation of all aspects of screening process by operator and laboratory.

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QUALITY MANAGEMENT REPORTING	Manual record keeping of CT and cytopathologist performance for evaluation, feed back and continuing education purposes including correlation between screening, diagnosis and patient outcome.	Automatic recording of necessary aspects of CT and cytopathologist performance.	Offers flexible reporting of productivity and performance data.
CLIENT SERVICES	Laboratory provides preprinted requisition forms, reporting, call in result access.	Laboratory provides menu driven program for requisition form generation, with master patient data and recall features, for in office use; customized reporting, on line result access and back up patient recall system.	Provides value added services to referring office.