

Current Skill Sets: What do we know about the current skill sets of those who support the practice of cytopathology today that is relevant to this strategic question? What do we wish we knew?

These statements were gathered during discussion of the preceding question over the duration of all Summit activities, including the Future of Cytopathology Summit on November 13, 2009. They have been compiled by topic and content.

ROLE/ISSUE	WHAT WE KNOW	WHAT WE DON'T KNOW	HOW WE FEEL
<p>Cytotechnologists</p>	<ul style="list-style-type: none"> ▪ CTs can do multiple high complexity testing; can expand their scope of practice in other lab areas. ▪ We know we don't know so we need adaptability ▪ Morphologic skills exist and are strong, and are needed for new technologies and activities, like selection of tissue for testing, but these activities do not have any technical reimbursement to support assignment of cytotechnologists to these duties. Focus on patient-centric care and "bundling" may change this. ▪ Cytotechnologists are adaptable if given the opportunity, and can expand into new areas. ▪ Locator skills, considered to be a core skill, are declining in the current environment due to computer-assistance. Based upon survey most cytotechnologists are doing traditional cytotechnologist jobs ▪ Screening skill is less important, morphology skill in more important ▪ Screening skill is more important to helping the pathologist, since the pathologist has the morphologic skill but is less willing to screen ▪ Screening skills can be used in other areas (Core biopsies for prostate, core biopsy of breast) ▪ Morphology interpretation ▪ Do different jobs as a function of environment ▪ Have core skills related to morphology and understanding of disease ▪ Are using skills outside of what they learned in school (morphology based ancillary skill set) 	<ul style="list-style-type: none"> ▪ Acceptance of a cytotechnologist doing a traditional med tech job i.e. molecular- Hard to get job placement ▪ Should we be training our CTs for an MT test or should we be training them in morphology based skills? ▪ Prescreening images for key regions of interest in decrease time per case for surgical pathologist (second set of eyes) ▪ What do cytotechnologists really want to do? ▪ We don't know a lot about the current practice, the way cytotechnologists are being used. What are the drivers? What do different labs need- commercial, university, hospital? ▪ Why don't CTs reach higher administrative positions in hospitals? ▪ Do CTs really know operation and troubleshooting of automated instruments? ▪ Is there a role for CTs in screening some surgical cases? ▪ Do pathologists need cytotechnologists to do molecular testing? ▪ Do we need to focus on something else for cytotechnologists to do? ▪ Data on outcomes based upon CT screening (or not) of non-GYN specimens, cell blocks, special stains, etc. ▪ Outcomes data on value-added by CT performance of molecular testing. ▪ What are pathologists looking to off-load that an expanded cytopractitioner could do? ▪ If there is a staffing void between CTs and 	<ul style="list-style-type: none"> ▪ Current cytotechnologist does not always meet needs of employer – need broader skills: economically driven. ▪ As Paps decline, cytology/CT's may shift away from large volume Pap laboratories. ▪ Need to see breadth of patients cases ▪ Expanded skill set may be required in the new marketplace ▪ Hands on assistance with imaging in radiology (Endocrinology) ▪ Patient – provider interaction questionable ▪ Need a tech that can work independently and work well with a pathologists ▪ Need to recognize different personality types and meet their needs. Core curriculum but with different tracks. Niche market for dedicated Pap screening.

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<p>Cytotechnologists (Continued)</p>	<ul style="list-style-type: none"> ▪ Locator skills expanded outside of traditional cyto specimen (e.g. Acid fast bacteria detection) ▪ Cytopreparation ▪ Continuous Quality Improvement ▪ Managing complex stains – immunohistochemistry and in situ, FISH – use screening and diagnostic abilities ▪ Basic anatomy and histology ▪ Correlate clinical history with clinical findings and pathology ▪ “Molecular” is broad reaching area that has different niches and requirements. Basic knowledge is common but some does not apply to what cytotechnologists and pathologist are very good at. ▪ Areas driven by morphology FISH, circulating tumor cells, selecting areas in tissue ▪ Can do lab administration, finance, IT, Quality Assurance- not as prepared as should be ▪ Prep techs became prominent when the number of cytology cases increased and time of effort became critical ▪ Limited testing in molecular biology (HPV, FISH) ▪ Key management skills, test validation, lab operations etc. ▪ Core skill set is anatomic disease and understanding of disease ▪ Lab administrators frequently start as Med Techs not Cytotechnologists ▪ Problem solving ▪ Test evaluation ▪ Growing need for digitization – cytotechnologists taking images, adding 	<p>CPs, who will fill that void?</p>	
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<p>Cytotechnologists (Continued)</p>	<p>descriptions and clinical</p> <ul style="list-style-type: none"> ▪ Growing need for practitioners with morphologic skills to assist pathologists: a.) Adequacy evaluation – fits with telepath. b.) Telepathology: Growing role for minimally invasive biopsy methods that need adequacy evaluation (cores, FNAs, – who should perform? Efficiency to have cytotechnologist prep and read – send via telecytology or get technical payment for doing this??) FISH and Tele-FISH, Select areas of section (tissue/cell blocks) for molecular testing. ▪ Examination of gynecologic slides with triage of abnormal cases to pathologists and sign-out of normal cases. ▪ Fine needle aspiration biopsy preparation, evaluation, adequacy checks and referral to pathologists. ▪ Acquisition, review, organization and integration of patient history and clinical data to facilitate optimal diagnostic reporting. ▪ Performance and/or supervision of cytopreparatory work. ▪ Trouble shooting stain and equipment issues. ▪ Triage of specimens for ancillary testing. ▪ QA, QC duties with cytologic-histologic correlation and reconciliation of discrepant information. ▪ Provision of patient and professional education. ▪ Professional and ethical behavior. ▪ Morphologic excellence ▪ Locator and interpretative capability ▪ Integration of clinical data with morphology ▪ QC, QA, Management and general laboratory operations 		
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	<ul style="list-style-type: none"> ▪ Support of regulatory requirements and certification ▪ Cytopreparation ▪ Grossing ▪ Data Management ▪ Statistical analysis ▪ Correlation of cytology with histology ▪ Assistance with image-guided FNA specimen acquisition ▪ Operation and trouble-shooting of automated instruments ▪ Examination of FISH specimens 		
<p>Pathologists</p>	<ul style="list-style-type: none"> ▪ Pathologists do not uniformly want patient contact, but not required to be recognized as part of the health care team ▪ Morphologic skills for digitization selection CAP addressing new need for certifications ▪ Practice medicine (Doctor first) – integrate clinical information ▪ Patient – provider interaction questionable ▪ Lab administration, finance, IT, Quality Assurance (some of this is wish we knew) ▪ Pathology reporting is becoming more complex; asking for more information and comprehensive analysis of that information ▪ Not recognized for full value, still perceived as a commodity ▪ Contribute to care of patient on the table in CT or US but maybe not valuable financially in the context of limited reimbursement ▪ Statistical skills, sensitivity and specificity ▪ Role of employer in assisting in career development ▪ FNAs - Practice dependent, referral dependent, primary care ▪ FNAs preliminary diagnosis ▪ FNA volumes drop in pathologist- performed 	<ul style="list-style-type: none"> ▪ Should pathologists be doing the endoscopies and biopsies ▪ Should we do more beyond US guided FNA ▪ Why don't more pathologists become chiefs of staff, etc? ▪ Is there a true shortage of pathologists (versus uneven distribution)? 	<ul style="list-style-type: none"> ▪ Tissue banking doesn't need to be in the pathologist list. ▪ More clerical tasks being pushed to the pathologist: i.e. Transcription – other duties need to be pushed to others, but what?? ▪ <u>Pathologists</u> want to be recognized by patients as physicians on the team ▪ Not incorporating digital opportunities well ▪ Need to change work flow ▪ Need to move from scope based to screen based ▪ Need more time for re-education ▪ Need to understand molecular issues and digital issues ▪ Need to devote more time to helping other clinicians than straightforward review ▪ Cytopathology can lead with way in routine usage of imaging and screen based diagnosis ▪ Models of practice are so variable by site, that may be detrimental to

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<p>Pathologists (Continued)</p>	<ul style="list-style-type: none"> but increased in image guided FNA ▪ Pathologists doing US guided FNA ▪ Pathologists know the correct test to order- prevent waste and inefficient ordering of tests ▪ Consultant services on tumor boards and individual consults, but not seeing patients as much as they should ▪ Pathologists does a lot of subspecialty education of residents in other areas without reimbursement ▪ Pathology referral on slide reads can be the entry to patients for surgery ▪ Tissue banking ▪ Physician, not just someone with medical training ▪ Communication /consultative liaison between physicians and lab and admin ▪ Educators of other physicians, patients, administrators ▪ Selection of appropriate testing ▪ Medical training and knowledge of morphology ▪ Independent medical judgment (interpretation and diagnosis) ▪ Patient management ▪ Performing procedures ▪ Application of new technologies and ancillary testing ▪ Administrative functions embracing CLIA- required activities ▪ Consultation with pathologists and clinicians ▪ Tissue banking 		<p>our field</p> <ul style="list-style-type: none"> ▪ Competency as a mechanism of unification , rather than guidelines ▪ The end of glass in the lab, moving to digital pathology , as long as it is ▪ just as fast and just as efficient ▪ Activities too “siloized” ▪ Pathologists give away free services and become commodity
<p>Other Laboratory Professionals and Medical</p>	<ul style="list-style-type: none"> ▪ UroVysion done by Med Techs not cytotechnologists who should be doing this because it’s morphology based ▪ New cytotechnologist grads must move to 	<ul style="list-style-type: none"> ▪ Laboratory workforce ▪ Why is there a shortage of histotechnologists? ▪ Will histotech salaries go up to CT levels? 	<ul style="list-style-type: none"> ▪ In sufficient personnel with the skill set to ensure high quality prep in all AP lab fields -Automation of prep might also diminish this role.

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<p>Specialists</p>	<p>find jobs Histotechnologists process tissue, special stains and cell blocks but do not interpret.</p> <ul style="list-style-type: none"> ▪ Medical Technologists (CLSs) perform HPV molecular testing, flow cytometry. FISH, testing for sexually transmitted diseases. ▪ Pathologists' Assistants do gross pathology, cut and stain frozen sections and perform autopsies under the supervision of pathologists ▪ Cytopreparatory technicians process specimens. ▪ Laboratory Information Specialists maintain information network. ▪ Laboratory Administrators/Technical Supervisors are responsible for management, budgets, inventory, scheduling, inspections, human resources, safety, materials management, test validation, recruitment. ▪ Educators are responsible for curriculum development and planning, educational accreditation, standards, recruitment, job placement, provision of CE. ▪ Radiologic imaging, digital imaging, archiving ▪ Treatment decisions ▪ Consultation with pathologists and other physicians ▪ Instrument and test validation ▪ Tissue banking 	<ul style="list-style-type: none"> ▪ Data on other lab profession looking for increase or change in scope of practice – i.e., PA, nurse practitioners, histotechnology. 	<ul style="list-style-type: none"> ▪ Need to address dissatisfaction in all lab professions.
<p>Education and Employment</p>	<ul style="list-style-type: none"> ▪ Funding for CT training does not exist – no specific stimulus funding for lab programs. CT programs have no dedicated funding. ▪ Schools are closing for financial reasons. Very expensive to train ▪ Huge effort required to produce competency: Gyn vs. Non-Gyn 	<ul style="list-style-type: none"> ▪ What is the current vacancy rate in cytotechnology or need for cytotechnologists? ▪ Institutional imperatives (allied health schools): CT programs at risk - budgets, number of students – mergers the solution, combining resources, centralizing 	<ul style="list-style-type: none"> ▪ Too much emphasis on qualification – not enough emphasis on competence. ▪ School closure may not be a bad thing....the education structure needs to be a re-structure ▪ Curriculum: change pre-requisite

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<p>Education and Employment (Continued)</p>	<ul style="list-style-type: none"> ▪ 	<p>resources, elearning.</p> <ul style="list-style-type: none"> ▪ Why are nursing schools, physical therapists, OTs, so much more successful in attracting students and support? Many offer greater flexibility, higher degrees. ▪ Other allied health professions do a great job instilling a sense of mission to their students. How do we inculcate a “sense of place” to CT students so that they have a sense of themselves in the workplace environment? Are we too focused on cubicle morphology rather than health problem solving? ▪ How do we train such without a rigid certification program? Small labs need people with greater flexibility with skills – cytotechnologist, histotechnologist, med tech. ▪ Where are cytotechnologist students going? Re-locating or staying where they are trained? ▪ How many CT programs are teaching histology? ▪ How ready are recent grads to cross train in histology or other laboratory areas? 	<ul style="list-style-type: none"> for those entering school ▪ We can’t depend on CT schools to do training in ancillary testing (HPV testing, etc.) because they don’t get support from vendors ▪ Cytotechnology programs need to adjust their programs ▪ Need different educational models ▪ Other skills on are on the job training ▪ May need some sort of proof of competency ▪ Need more certification programs for proof of competency ▪ Cytotechnologists needs confidence in being able to learn (key is learning to learn) ▪
<p>Technology</p>	<ul style="list-style-type: none"> ▪ HPV vaccine-15% are getting the vaccine; Australia has up to 80% ▪ Digital imaging evolving system – need to assess application ▪ Need organized knowledge-sharing, particularly for education program development. 	<ul style="list-style-type: none"> ▪ HPV testing has an impact-Impact may be underestimated ▪ Hologic new screening may cut down the number of screening...slide can screen in 90 significant 	<ul style="list-style-type: none"> ▪ Pathology in general should have more influence on what kind of lab testing should be available – (utilization)
<p>Cytopathology Community</p>	<ul style="list-style-type: none"> ▪ Turf wars with evolving professions i.e. Pas 	<ul style="list-style-type: none"> ▪ When do we become “we”? Why are we in isolation (our organizations)? We are fragmented. Some feel that we are not a changing organization...How can we move forward? 	<ul style="list-style-type: none"> ▪ The cytology community is fragmented ▪ Lots of “perception” among stakeholders, but not a lot of data. ▪ Not getting our message out

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<p>Cytopathology Community (Continued)</p>		<ul style="list-style-type: none"> ▪ How do we get people to know what we do? ▪ What are we going to do besides Paps? (EUS is new) ▪ Are we coming up with too many indefinite diagnoses? ▪ What is our weakest link? ▪ Why are we invisible to patients? ▪ How can we have a more global approach to training and practice? If imaging and diagnostics are going more global, what could we offer the world based on our expertise? 	<p>beyond our “inner circle”.</p> <ul style="list-style-type: none"> ▪ Not working closer together – creating an “Industry” vision: many societies coming together to build a common vision – ?role for the CETC.
<p>Guidelines and Practice Changes</p>	<ul style="list-style-type: none"> ▪ Cervical cancer screening guidelines are only followed by 15-20%-Risk and liability issues; pap often brings in the annual exam; Many women are still unscreened ▪ Paps are declining but not as much as expected ▪ Changes in utilization are often driven by personnel and revenue ▪ Based upon GYNs and family practice surveyed, did not feel the volume would change much 	<ul style="list-style-type: none"> ▪ Change in GYN cytology is coming but don't know what it is exactly- Variable in practice and across the country ▪ Will tissue ablation replace tissue samples? ▪ Without cervical cancer, what new need does the future hold for cytology? 	<ul style="list-style-type: none"> ▪ Gyn volume will drop: There will be a huge impact from the HPV vaccine and in particular the next generation of vaccine, and HPV testing. ▪ Pap Smears are going away ▪ We don't believe that the Pap volume will not go down in 10 years (as per the survey in the document). ▪
<p>Billing, Payment and Regulations</p>	<ul style="list-style-type: none"> ▪ Salary differentials CT vs. MT ▪ Bundled payment structure encourages other areas to take tests that can be done in CytoPath i.e. FNA's, molecular 	<ul style="list-style-type: none"> ▪ Payment changes may force changes in way we test and practice ▪ Data on primary MD screening of Pap tests through PT and data of benefit of adequacy evaluation on reducing non-diagnostic rates 	<ul style="list-style-type: none"> ▪ Fear about payment structure may be driving the need to be recognized ▪
<p>Current Economy</p>		<ul style="list-style-type: none"> ▪ What is the future of health care in the US? How will it impact pathology 	<ul style="list-style-type: none"> ▪ What economy wants is spending the least money possible