# Implementation of novel standardized ovarian cyst/cancer system into ultrasound reports accurately estimates risk and informs appropriate follow-up

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| Challenge | **No established evidence-based, integrated decision systems exist for evaluating ovarian or adnexal masses/cysts. If achieved, it would identify high risk women for prompt surgical evaluation and avoid unnecessary surgery and morbidity for women at low risk.**  |
| Existing Evidence | Adnexal masses/cysts are common, present in 7–12% of asymptomatic women. The high prevalence of incidentally discovered benign masses on ultrasound, low cancer prevalence, and overlap between benign and malignant ultrasound characteristics explains the lack of benefit of ovarian cancer screening. However, ultrasound detection leads to concerns regarding ovarian cancer, subsequent surgical removal, or serial monitoring with ultrasound. Standardized risk assessment methods have been adopted for other abnormal imaging findings, such as the Breast Imaging Reporting and Data System (BIRADS) for mammography, the Fleischner system for lung nodules. Algorithms have been proposed for adnexal masses, but none have been widely adopted.  |
| Target Population | Average-risk women undergoing ultrasonography. |
| Intervention or Exposure | Risk stratification system for adnexal masses based on standardized ultrasound characteristics. |
| Outcomes/Key Findings | **A new evidence-based risk stratification system for ovarian cysts/masses, with follow-up recommendations, was developed, validated, and integrated into radiology reports.** Reporting categories 1, 2, 3, and X allowed risk stratification (table) relative to women with normal examinations (category 0). Categories 1, 2, 3, and X were associated with increasing risks of ovarian cancer diagnosis: 0.2% (95% CI 0.05–0.3%) for category 1, 1.3% (95% CI 0.7–1.9%) for category 2, 6.0% (95% CI 3.0–8.9%), for category 3, and 13.0% (95% CI 9.5–16.4%) for category X while Category 0 studies were associated with a risk of 0.1% (95% CI 0.07–0.14%).  |
| Resulting Action/Change | **This category system provides the first standardized risk stratification system for adnexal masses integrated into routine care through radiology reporting in a community-based setting. This is changing current care and will further inform ongoing data-driven care.** |
| Additional recommendations | Development, validation, and implementation of similar risk estimating methods for other conditions requiring surveillance can inform evidence-based follow-up and decrease patient and provider uncertainty for care intervals. |
| Implementation Tools  | Radiology reporting templates with evidence-based classification system and a Practice Resource that provides clinical recommendations. |
| Implementation and Follow-up Measures | Utilization of risk stratification and appropriate follow-up (implementation); cancer detection (effectiveness); use of surgery and ultrasound (utilization). |
| Reference(s) [Key Figure if applicable] | -Suh-Burgmann E, et al. Prospective Validation of a Standardized Ultrasonography-Based Ovarian Cancer Risk Assessment System. Obstet Gynecol. 2018 Nov;132(5):1101-1111. -Suh-Burgmann EJ, Flanagan T, et al. Large-Scale Implementation of Structured Reporting of Adnexal Masses on Ultrasound. J Am Coll Radiol. 2018 May;15(5):755-761

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| **Risk of ovarian cancer by ultrasound reporting category by baseline ultrasound findings** | Incidence rate  | Incidence rate | Number needed to examine to detect onc |
| Ultrasound Category | women at risk  | Ovarian cancer | Cancer or borderline | Ovarian cancer | Cancer/ borderline | Cancer | Cancer or borderline |
| 0  | 36,768 | 38 | 42 | 0.10% | 0.11% | **967** |  **875** |
| 1  | 4813 | 8 | 19 | 0.17% | 0.39% | **500** |  **253**  |
| 2  | 1404 | 18 | 33 | 1.28% | 2.35% | **77** |  **43** |
| 3  | 251 | 15 | 26 | 5.98% | 10.36% | **17** |  **10** |
| X  | 370 | 48 | 70 | 12.97% | 18.92% | **8**0-6) |  **5** |

DOI: 10.1097/AOG.0000000000002939https://pubmed.ncbi.nlm.nih.gov/30303910/ |