

A Method For Medical Screening And A System Thereof

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ABSTRACT

Embodiments of the present disclosure provide a method and a portable system for screening cervical cancer at point-of-sample collection. In one embodiment, a sample collected from a user is disposed on a slide and stained with suitable reagents. The stained sample on the slide is then disposed on the system for capturing one or more images of the stained sample. The captured images are then processed to classify the processed images into one or more cell types and stages of cancer. Based on the classification, one or more reports are generated and forwarded to experts or cytotechnologist or cyto-pathologists for further analysis. Thus, the present disclosure enables the interpretation and screening of the samples at the point-of-sample collection centre and avoids the delay in forwarding the sample to the centralized place for experts analysis and interpretation report being sent back to the point of sample collection.

KEY APPLICATION AREAS

- 1.Cervical cancer screening and early diagnosis.
- 2.Digital pathology and cytology.
- 3.Point-of-care diagnostics.
- 4.AI/ML-assisted medical image analysis.
- 5.Telepathology and remote diagnostics.
- 6.Automated laboratory sample staining and screening.

POTENTIAL USE

- 1.Automated cervical cancer screening from stained cervical cell slides using AI-based image analysis.
- 2.Point-of-care cancer diagnosis in clinics and primary healthcare centers, reducing dependence on centralized laboratories.

3. Telepathology workflows, enabling remote review by cytologists and pathologists.
4. Automated cell segmentation, classification, and cancer staging with confidence scoring and report generation.
5. Portable cancer screening in rural and resource-limited settings using a lightweight, easy-to-operate system.
6. Continuous AI model improvement through expert feedback and updated machine learning models for enhanced diagnostic accuracy.