Policy Briefing:

Companion Diagnostics: Building on Cameroon's Laboratory Base

---

Overview:

This policy briefing synthesizes key insights from the Cameroon Townhall for Healthcare Professionals meeting held on September 21, 2024, focusing on the theme "Companion Diagnostics: Advancing Personalized Medicine," presented by Dr. Obadia Mfuh Kenji of Stanford Health Care.

Context:

Companion diagnostics link a test to a treatment so that patients receive drugs that will work for them. Cameroon already has PCR machines and some sequencers from the COVID-19 response, many of them underused, but lacks laboratory regulation, reliable reagent storage, and a central testing network.

Key Issues:

1. **Underused equipment:** PCR and sequencing capacity built for COVID-19 is idle as COVID testing has fallen.
2. **No formal laboratory regulation:** There is no national body inspecting laboratories or certifying staff, though some are ISO accredited.
3. **Working conditions:** Power cuts spoil reagents, workloads are heavy, and laboratories and clinicians rarely communicate.
4. **Pathology bottleneck:** Immunohistochemistry is cheap but needs skilled interpretation and quality antibodies.
5. **Data and representation:** Genetic data need protection, and most tests and trials have been validated outside Africa.

Discussion Highlights:

- Participants agreed labs can start with validated PCR assays and build towards NGS.
- Advocacy made CD4 testing affordable and could do the same for molecular tests.

- Digital pathology and AI could extend scarce pathologists through remote reading.
- A tiered testing network with a central laboratory was proposed.

Recommendations:

- **Create a national laboratory regulator:** MINSANTE should establish an independent body to license laboratories by level, inspect them against a checklist, and certify laboratory directors and staff, building on ISO and WHO accreditation. First step: publish minimum standards for each level of facility.
- **Repurpose COVID-era molecular equipment:** MINSANTE, the national public health laboratory and reference hospitals should map existing PCR and sequencing machines and validate assays for priority markers (for example EGFR, HIV drug resistance, TB resistance). First step: an inventory of machines and their use.
- **Build a tiered testing network:** MINSANTE should define which tests each level performs and set up sample transport to central laboratories with results in one to two days, avoiding sending samples abroad.
- **Protect reagents and data:** Hospitals should secure power and cold storage for reagents, and MINSANTE should adopt data protection rules and data sharing agreements for genetic testing.
- **Pilot digital pathology:** University hospitals, with diaspora pathologists, should pilot slide scanning and remote reading with peer review. First step: one scanner in a reference hospital linked to volunteer pathologists.
- **Strengthen lab and clinician dialogue:** Training schools and professional societies should include joint sessions between laboratory staff and clinicians on test selection and interpretation.

Next Steps: Dr. Kenji offered the town hall's laboratory experts to help any laboratory implementing PCR or NGS. The next session was planned for two weeks later.

Conclusion: Participants agreed that Cameroon does not need to start from scratch: skilled laboratory staff and equipment from the COVID-19 response give a base for companion diagnostics. Regulation, quality, communication and advocacy are the steps that would turn this base into better treatment choices.

Prepared by the Co-Moderators, Cameroon Townhall for Healthcare Professionals, from the session of September 21, 2024. Recording: https://www.youtube.com/watch?v=Dtt6GamvCXQ