Baseline Survey Report on Noncommunicable Disease Program Management and Hospital Service Delivery in Kampong Cham Province

The Noncommunicable Disease Control Project

September 2024

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យើងខ្ញុំសូមថ្លែងអំណរគុណយ៉ាងជ្រាលជ្រៅ ចំពោះក្រុមការងារនាយកដ្ឋានការពារសុខភាព នៃក្រសួងសុខាភិបាល ដែលបានផ្តល់ការគាំទ្រ និងការប្តេជ្ញាចិត្តក្នុងអំឡុងពេលការស្ទង់មតិកន្លងមកនេះ។ ការរួមចំណែកនេះ គឺពិតជាមានសារៈសំខាន់យ៉ាងខ្លាំងក្នុងការសម្រេចគោលបំណង នៃការស្ទង់មតិនេះ។

យើងខ្ញុំ ក៏សូមថ្លែងអំណរគុណចំពោះមន្ទីរសុខាភិបាលខេត្តកំពង់ចាម ចំពោះកិច្ចសហការ និងការផ្តល់ធាតុចូលដ៏មានគុណតម្លៃ ដែលរួមចំណែកដ៏សំខាន់ក្នុងការជួយឱ្យយើងខ្ញុំយល់កាន់តែច្បាស់អំពីបញ្ហាប្រឈម និងឱកាសក្នុងវិស័យថែទាំសុខភាពក្នុងខេត្តនេះ។ ការគាំទ្រជាប់ជាប្រចាំពីគ្រប់ភាគីពាក់ព័ន្ធទាំងអស់ ពិតជាមានអត្ថប្រយោជន៍ដល់ភាពជោគជ័យនៃការស្ទង់មតិនេះ។

យើងខ្ញុំក៏សូមសម្តែងនូវការដឹងគុណយ៉ាងជ្រាលជ្រៅចំពោះប្រធាន និងបុគ្គលទំនាក់ទំនងផ្នែកជំងឺមិនឆ្លង នៃការិយាល័យសុខាភិបាលស្រុកប្រតិបត្តិ ប្រធានមន្ទីរពេទ្យ អ្នកផ្តល់សេវាថែទាំសុខភាព និងមន្ត្រីសុខាភិបាលនៅខេត្តកំពង់ចាម ដែលបានចែករំលែកបទពិសោធន៍ និងទស្សនៈយល់ឃើញរបស់ខ្លួន។ ធាតុចូលទាំងនេះ បានផ្តល់ជាគោលគំនិតដ៏សំខាន់ចំពោះស្ថានភាពបច្ចុប្បន្ននៃការគ្រប់គ្រងកម្មវិធីជំងឺមិនឆ្លង និងសេវាសុខាភិបាលនៅតាមមន្ទីរពេទ្យទាំងអស់ក្នុងខេត្តកំពង់ចាម។

ខ្ញុំក៏សូមថ្លែងអំណរគុណចំពោះសហការីមកពីក្រុមការងារនៃទីភ្នាក់ងារសហប្រតិបត្តិការអន្តរជាតិជប៉ុន លោកស្រីវេជ្ជបណ្ឌិត Haruyama Rei លោកស្រី Otaki Junko លោក Ogasawara Tadashi លោក ឈុន ច័ន្ទវិទ្ធ លោកស្រី រស់ សុភាសាវតី និងលោក ឈិត យ៉ូស្វេ ចំពោះសកម្មភាពប្រកបដោយវិជ្ជាជីវៈ និងការប្តេជ្ញាចិត្ត ដែលរួមចំណែកជាផ្នែកមួយដ៏សំខាន់ក្នុងការបញ្ចប់របាយការណ៍នេះ។

យើងខ្ញុំក៏សូមថ្លែងអំណរគុណជាពិសេសចំពោះលោកវេជ្ជបណ្ឌិត Yokobori Yuta លោកស្រីវេជ្ជបណ្ឌិត Aoyagi Kanako និងលោកស្រីវេជ្ជបណ្ឌិត Haruyama Rei ក្នុងការផ្តល់ប្រឹក្សាការគ្រប់គ្រងជំងឺមិនឆ្លង (ជំងឺទឹកនោមផ្អែម និងជំងឺលើសសម្ពាធឈាម ការពិនិត្យ និងការព្យាបាលជំងឺមហារីកមាត់ស្បូន) ដែលធ្វើឱ្យខ្លឹមសារ និងផ្នែកអនុសាសន៍នៃរបាយការណ៍នេះកាន់តែមានភាពគ្រប់ជ្រុងជ្រោយ។

ជាចុងក្រោយ យើងខ្ញុំសូមថ្លែងអំណរគុណយ៉ាងជ្រាលជ្រៅបំផុតចំពោះគ្រប់អ្នកផ្តល់ការសម្ភាសន៍ និងភាគីពាក់ព័ន្ធទាំងអស់ដែលបានចូលរួមចំណែកនៅក្នុងការស្ទង់មតិនេះ។ មតិយោបល់របស់លោកអ្នក ពិតជាមានគុណតម្លៃមិនអាចកាត់ថ្លៃបាន ហើយយើងខ្ញុំសង្ឃឹមថា របាយការណ៍នេះ នឹងជួយរួមចំណែកក្នុងការកែលម្អប្រកបដោយអត្ថប្រយោជន៍លើការគ្រប់គ្រងកម្មវិធី និងការផ្តល់សេវាជំងឺមិនឆ្លងតាមមន្ទីរពេទ្យនៅក្នុងខេត្តកំពង់ចាម។

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សេចក្តីសង្ខេបប្រតិបត្តិ

របាយការណ៍នៃការស្នង់មតិមូលដ្ឋាននេះ បង្ហាញអំពីលទ្ធផលនៃការវាយតម្លៃគ្រប់ជ្រុងជ្រោយ ដែលបានអនុវត្តដោយគម្រោងគ្រប់គ្រងជំងឺមិនឆ្លង ដោយរួមសហការអនុវត្តរវាងក្រសួងសុខាភិបាល មន្ទីរសុខាភិបាលខេត្តកំពង់ចាម និងទីភ្នាក់ងារ JICA ចាប់ពីខែមិថុនា ដល់ខែកក្កដា ឆ្នាំ២០២៤។ គោលបំណងចម្បងនៃការអង្កេតនេះ គឺដើម្បីវាយតម្លៃលើស្ថានភាពបច្ចុប្បន្ននៃការគ្រប់គ្រងកម្មវិធីជំងឺមិនឆ្លង និងការផ្តល់សេវាសុខាភិបាលក្នុងមន្ទីរពេទ្យខេត្តកំពង់ចាម ប្រទេសកម្ពុជា។ ការអង្កេតនេះផ្តល់នូវមូលដ្ឋានគ្រឹះដ៏សំខាន់ក្នុងការកំណត់រកភាពខ្លាំង ភាពខ្សោយ និងចំណុចត្រូវពង្រឹងបន្ថែមនៅក្នុងការគ្រប់គ្រងជំងឺមិនឆ្លង ជាពិសេស ជំងឺទឹកនោមផ្អែម ជំងឺលើសសម្ពាធឈាម និងជំងឺមហារីកមាត់ស្បូននៅក្នុងប្រព័ន្ធសុខាភិបាលខេត្ត។

គោលបំណង៖

ការអង្កេតនេះ មានគោលបំណងដាក់លាក់ដូចខាងក្រោម៖

១. **វាយតម្លៃទៅលើការផ្តល់សេវាជំងឺមិនឆ្លងនាពេលបច្ចុប្បន្ននៅក្នុងមន្ទីរពេទ្យខេត្ត និងមន្ទីរពេទ្យបង្អែកស្រុក៖** វាយតម្លៃលទ្ធភាព និងការផ្តល់សេវាជំងឺទឹកនោមផ្អែម ជំងឺលើសសម្ពាធឈាម និងជំងឺមហារីកមាត់ស្បូន នៅក្នុងមន្ទីរពេទ្យខេត្ត និងមន្ទីរពេទ្យបង្អែកស្រុកធៀបនឹងតួនាទីដែលបានរំពឹងទុករបស់ពួកគេ។

២. **ពិនិត្យអំពីស្ថានភាពនៃការគ្រប់គ្រងកម្មវិធីជំងឺមិនឆ្លងនៅមន្ទីរសុខាភិបាលខេត្ត និងការិយាល័យសុខាភិបាលស្រុកប្រតិបត្តិ៖** វាយតម្លៃទៅលើលទ្ធភាព និងភាពគ្រប់គ្រាន់នៃធនធានហេដ្ឋារចនាសម្ព័ន្ធ និងបុគ្គលិកក្នុងផ្នែកគ្រប់គ្រងកម្មវិធីជំងឺមិនឆ្លង។

៣. **ផ្តល់នូវអនុសាសន៍ដែលអាចអនុវត្តបាន៖** បង្កើតអនុសាសន៍ដែលអាចអនុវត្តបាន ដើម្បីពង្រឹងការគ្រប់គ្រងកម្មវិធីជំងឺមិនឆ្លង និងការផ្តល់សេវាមន្ទីរពេទ្យក្នុងខេត្តកំពង់ចាម។

លទ្ធផលរកឃើញ និងអនុសាសន៍សំខាន់ៗ៖

តាមរយៈការអង្កេតការនេះ គម្រោងគ្រប់គ្រងជំងឺមិនឆ្លងបានទទួលការយល់ដឹងយ៉ាងសំខាន់ពីភាពខ្លាំង និងគម្លាតនាពេលបច្ចុប្បន្នក្នុងការគ្រប់គ្រង និងការផ្តល់សេវារបស់មន្ទីរពេទ្យនៃកម្មវិធីជំងឺ

មិនឆ្លងក្នុងខេត្តកំពង់ចាម។ ខណៈពេលដែលវឌ្ឍនភាពសំខាន់ៗបានធ្វើឡើងដើម្បីរកឱ្យឃើញពីចំណុចដែលត្រូវកែលម្អ នឹងបញ្ហាប្រឈមជាច្រើនដែលនៅតែមាន។ អនុសាសន៍ខាងក្រោមមានគោលបំណងដោះស្រាយលើបញ្ហាដែលប្រឈមទាំងនេះ ដើម្បីធានាបាននូវការពង្រឹងជាបន្តបន្ទាប់លើការផ្តល់សេវារបស់មន្ទីរពេទ្យ និងការគ្រប់គ្រងកម្មវិធីជំងឺមិនឆ្លងឱ្យកាន់តែមានប្រសិទ្ធភាពឆ្ពោះទៅមុខ។

១. សេវាជំងឺទឹកនោមផ្អែម និងជំងឺលើសសម្ពាធឈាម

លទ្ធផលរកឃើញសំខាន់ៗ៖

- **គម្លាតក្នុងការផ្តល់សេវាមានដូចជា៖** ការផ្តល់សេវាជំងឺទឹកនោមផ្អែម និងជំងឺលើសសម្ពាធឈាម មិនទាន់ស្របទៅនឹងគោលការណ៍ណែនាំ និងនីតិវិធីប្រតិបត្តិស្តង់ដារបច្ចុប្បន្ន។ នៅក្នុងមន្ទីរពេទ្យបង្អែក មានតែថ្នាំពីរប្រភេទប៉ុណ្ណោះសម្រាប់ការព្យាបាល។ ការតាមដាន និងនីតិវិធីបញ្ជូនអ្នកជំងឺមិនមានសង្គតិភាព ហើយការវាយតម្លៃ និងការព្យាបាលផលវិបាកនៃជំងឺទឹកនោមផ្អែមមិនទាន់អនុវត្តបានគ្រប់ជ្រុងជ្រោយនៅឡើយ។ នៅមន្ទីរពេទ្យខេត្ត មានថ្នាំអាំងស៊ុយលីន ប៉ុន្តែស្តុកមានបរិមាណតិចតួច។ ការវាយតម្លៃផលវិបាកនៃអ្នកជំងឺទឹកនោមផ្អែមមិនបានធ្វើឡើងជាប្រចាំទេ ហើយការព្យាបាលជំងឺដំបៅជើង ក៏នៅមានកម្រិតផងដែរ។
- **ការធ្វើតេស្តប្រតិករ និងឱសថ៖** សម្រាប់ជំងឺទឹកនោមផ្អែម មន្ទីរពេទ្យបង្អែកជាទូទៅមានឧបករណ៍វាស់កម្រិតជាតិស្ករក្នុងឈាម (Glucometers) ថ្នាំគ្រាប់ Metformin និង Glibenclamide ប៉ុន្តែមិនមានប្រតិករតេស្ត HbA1C និងអាំងស៊ុយលីននោះទេ ដែលធ្វើឱ្យការគ្រប់គ្រងជំងឺទឹកនោមផ្អែមនៅមានកម្រិត។ សម្រាប់ជំងឺលើសសម្ពាធឈាម មន្ទីរពេទ្យបង្អែកមានឧបករណ៍វាស់សម្ពាធឈាម ថ្នាំ calcium-channel blocker និង beta blocker ប៉ុន្តែមន្ទីរពេទ្យភាគច្រើនមិនមាន ACE inhibitor/Angiotensin receptor blockers និងថ្នាំបញ្ចុះទឹកនោមនោះទេ។

អនុសាសន៍ចំពោះគម្រោងគ្រប់គ្រងជំងឺមិនឆ្លង៖

- **ធានាឱ្យមានការគ្រប់គ្រងជាតិស្ករក្នុងឈាម និងការបញ្ជូនអ្នកជំងឺសមស្រប៖**
  - ពិនិត្យ និងពិភាក្សាវិធីសាស្ត្រក្នុងការទិញប្រតិករតេស្ត HbA1c
  - ពិនិត្យឡើងវិញលើសៀវភៅណែនាំអំពីជំងឺទឹកនោមផ្អែម
  - បង្កើតសម្ភារអប់រំស្តីពី HbA1c

- រៀបចំគំនូសព្រាងអំពីតារាងលំហូរនៃការថែទាំនៅមន្ទីរពេទ្យបង្អែក ដោយក្នុងនោះបញ្ចូលទាំងការបញ្ជូនអ្នកជំងឺទៅមន្ទីរពេទ្យខេត្តផងដែរ។

- **ការពង្រឹងសមត្ថភាពព្យាបាលជំងឺទឹកនោមផ្អែមនៅមន្ទីរពេទ្យខេត្ត និងមន្ទីរពេទ្យបង្អែក៖**
  - គាំទ្រការប៉ាន់ប្រមាណបរិមាណឱសថ និងថ្លៃចំណាយ
  - ពិនិត្យ និងកែសម្រួលគោលការណ៍ណែនាំវេជ្ជសាស្ត្រ
  - ផ្តល់ការបណ្តុះបណ្តាលរំលឹកសម្រាប់វេជ្ជបណ្ឌិត។
- **ពង្រឹងសមត្ថភាពលើការវាយតម្លៃ និងការថែទាំជំងឺដំបៅជើងដោយទឹកនោមផ្អែមនៅមន្ទីរពេទ្យបង្អែក៖** បង្កើន និងផ្តល់ការបណ្តុះបណ្តាលជាក់ស្តែងអំពីការវាយតម្លៃ និងការថែទាំជំងឺដំបៅជើងដោយទឹកនោមផ្អែម។
- **កំណត់សូចនាករដែលអាចវាស់វែងបានដើម្បីតាមដានវឌ្ឍនភាព។**

២. ការពិនិត្យ និងការព្យាបាលជំងឺមហារីកមាត់ស្បូន

លទ្ធផលរកឃើញសំខាន់ៗ៖

- **គម្លាតក្នុងការផ្តល់សេវា៖** ការផ្តល់សេវានៅមន្ទីរពេទ្យបង្អែកលើការពិនិត្យសុខភាពមាត់ស្បូនដោយតេស្ត VIA និងការព្យាបាលដោយស្នាមានកម្រិត ដោយសារកង្វះការយល់ដឹងរបស់ស្ត្រីទាក់ទងនឹងការពិនិត្យសុខភាពមាត់ស្បូនរកជំងឺមហារីក និងដោយសារមិនមានការបញ្ជូនស្ត្រីមកពីមណ្ឌលសុខភាព។ ចំណែកឯមន្ទីរពេទ្យខេត្ត នៅមានការខ្វះខាតសម្ភារៈចាំបាច់មួយចំនួន រួមទាំងមន្ត្រីដែលបានទទួលការបណ្តុះបណ្តាលពីការព្យាបាលដោយ LEEP ។
- **ការបណ្តុះបណ្តាលស្តីពីការពិនិត្យ និងព្យាបាលជំងឺមហារីកមាត់ស្បូន៖** ចាំបាច់ត្រូវផ្តល់ការបណ្តុះបណ្តាលដល់ឆ្មប និងវេជ្ជបណ្ឌិតដើម្បីពង្រឹងចំណេះដឹង ជំនាញ និងទំនុកចិត្តក្នុងការផ្តល់សេវាពិនិត្យ និងព្យាបាលជំងឺមហារីកមាត់ស្បូន។

អនុសាសន៍ចំពោះគម្រោងគ្រប់គ្រងជំងឺមិនឆ្លង៖

- **ពិចារណាជាក់ឱ្យប្រើប្រាស់តេស្ត HPV សម្រាប់ការពិនិត្យសុខភាពមាត់ស្បូន រកជំងឺមហារីក៖** គួរពិចារណាក្នុងការប្រើប្រាស់តេស្ត HPV ជាជាងការពង្រីកសេវាពិនិត្យសុខភាពមាត់ស្បូនរកជំងឺមហារីក ដោយតេស្ត VIA ។

- **ការពង្រឹងសមត្ថភាពនៃការព្យាបាលជំងឺបៅមុនមហារីក៖** រៀបចំវគ្គបណ្តុះបណ្តាលស្តីពីការប្រើប្រាស់ម៉ាស៊ីនស្ពំ (Thermal Ablation) នៅមន្ទីរពេទ្យបង្អែក និងណែនាំការព្យាបាលដោយ LEEP នៅមន្ទីរពេទ្យខេត្ត។
- **កំណត់សូចនាករវាស់វែងដើម្បីតាមដានវឌ្ឍនភាព។**

៣. ការគ្រប់គ្រងកម្មវិធីជំងឺមិនឆ្លង (ជំងឺទឹកនោមផ្អែម ជំងឺលើសសម្ពាធឈាម និងជំងឺមហារីកមាត់ស្បូន)

លទ្ធផលរកឃើញសំខាន់ៗ៖

- **ផែនការប្រតិបត្តិប្រចាំឆ្នាំស្តីពីជំងឺមិនឆ្លង៖** មន្ទីរសុខាភិបាលខេត្ត និងការិយាល័យសុខាភិបាលស្រុកប្រតិបត្តិមិនបានបង្កើត ផែនការប្រតិបត្តិប្រចាំឆ្នាំស្តីពីជំងឺមិនឆ្លងនោះទេ ដែលជាហេតុមិនមានថវិកាជាក់លាក់សម្រាប់ដំណើរការកម្មវិធីជំងឺមិនឆ្លង លើកលែងតែសកម្មភាពក្នុងគម្រោង H-EQIP 2 ។
- **ថវិកាសម្រាប់ទិញប្រតិករ HbA1C និងអាំងស៊ុយលីន៖** មន្ទីរសុខាភិបាលខេត្ត និងការិយាល័យស្រុកប្រតិបត្តិ ពុំធ្លាប់បានបញ្ជាទិញប្រតិករ HbA1C និងអាំងស៊ុយលីននោះទេ និងត្រូវបានរំពឹងថាមន្ទីរពេទ្យត្រូវទិញប្រតិករ HbA1C និងអាំងស៊ុយលីនដោយខ្លួនឯង ដោយប្រើប្រាស់ថវិការបស់គម្រោង H-EQIP 2។
- **ការចុះអភិបាលនៅការិយាល័យសុខាភិបាលស្រុកប្រតិបត្តិ និងមន្ទីរពេទ្យបង្អែក៖** មន្ទីរសុខាភិបាលខេត្តបានចុះអភិបាលនៅការិយាល័យសុខាភិបាលស្រុកប្រតិបត្តិ និងមន្ទីរពេទ្យបង្អែកមិនទៀងទាត់នោះទេ។ ការិយាល័យស្រុកប្រតិបត្តិ មានការប្រជុំប្រចាំខែជាមួយនឹងមន្ទីរពេទ្យបង្អែក ដើម្បីផ្លាស់ប្តូរព័ត៌មានអ្នកជំងឺ និងពិភាក្សាអំពីបញ្ហាទូទៅ ប៉ុន្តែកិច្ចប្រជុំនេះ មិនត្រូវបានចាត់ទុកថាជាការចុះអភិបាលផ្លូវការនោះទេ។
- **ទិន្នន័យសម្រាប់ការតាមដានវឌ្ឍនភាពកម្មវិធីជំងឺមិនឆ្លង៖** ទិន្នន័យជំងឺទឹកនោមផ្អែម ជំងឺលើសសម្ពាធឈាម និងជំងឺមហារីកមាត់ស្បូន ដែលប្រមូលក្នុងប្រព័ន្ធគ្រប់គ្រងព័ត៌មានសុខាភិបាល បង្ហាញតែចំនួនអ្នកជំងឺសរុបជារៀងរាល់ខែប៉ុណ្ណោះ។ ទិន្នន័យដែលបានប្រមូលផ្តុំនៅក្នុងសៀវភៅកត់ត្រាអ្នកជំងឺមិនទាន់មានភាពគ្រប់គ្រាន់សម្រាប់ការតាមដានវឌ្ឍនភាពនៃកម្មវិធីជំងឺមិនឆ្លងនោះទេ។

អនុសាសន៍ចំពោះគម្រោងគ្រប់គ្រងជំងឺមិនឆ្លង៖

- **បង្កើតក្រុមការងារបច្ចេកទេសរបស់មន្ទីរសុខាភិបាលខេត្ត៖** ដាក់ឱ្យដំណើរការក្រុមការងារបច្ចេកទេសស្តីពីជំងឺមិនឆ្លង ដើម្បីផ្តល់ការគាំទ្របច្ចេកទេសដល់មន្ទីរសុខាភិបាលខេត្ត ស្រុកប្រតិបត្តិ មន្ទីរពេទ្យខេត្ត និងមន្ទីរពេទ្យបង្អែក។
- **បង្កើតផែនការសកម្មភាពជំងឺមិនឆ្លង៖** បង្កើតផែនការសកម្មភាពជំងឺមិនឆ្លងដោយរួមបញ្ចូលនូវថវិកាសម្រាប់ការបណ្តុះបណ្តាលសំខាន់ៗ ការចុះអភិបាល ឱសថសារវ័ន្ត និងសម្ភារៈបរិក្ខារ។
- **ពង្រឹងការចុះអភិបាលគាំទ្រនៅតាមមន្ទីរពេទ្យបង្អែកដោយមន្ទីរសុខាភិបាលខេត្ត និងស្រុកប្រតិបត្តិ៖** មន្ទីរសុខាភិបាលខេត្ត និងស្រុកប្រតិបត្តិត្រូវពង្រឹងការចុះអភិបាលគាំទ្រដល់មន្ទីរពេទ្យបង្អែកឱ្យបានទៀងទាត់។
- **ពិនិត្យមើលការប្រមូលទិន្នន័យ និងកំណត់សូចនាករវាស់វែង៖** កំណត់ និងតាមដានសូចនាករសម្រាប់ការអនុវត្តន៍ក្នុងកម្មវិធីជំងឺមិនឆ្លង។

សេចក្តីសន្និដ្ឋាន

លទ្ធផលរកឃើញនៃការអង្កេតនេះ បង្ហាញអំពីផ្នែកសំខាន់ៗដែលតម្រូវឱ្យមានកិច្ចអន្តរាគមន៍តាមគោលដៅ។ អនុសាសន៍នេះ មានគោលបំណងផ្តល់ជាការណែនាំដល់គម្រោងគ្រប់គ្រងជំងឺមិនឆ្លងក្នុងការបង្កើត និងអនុវត្តយុទ្ធសាស្ត្រ ដើម្បីពង្រឹងការគ្រប់គ្រងកម្មវិធីជំងឺមិនឆ្លង និងការផ្តល់សេវាមន្ទីរពេទ្យក្នុងខេត្តកំពង់ចាម។ តាមរយៈការដោះស្រាយចំណុចខ្វះខាតដែលបានរកឃើញនេះ និងប្រើប្រាស់ធនធានដែលមានស្រាប់ គម្រោងមានគោលបំណងពង្រឹងសេវាថែទាំសុខភាព និងគ្រប់គ្រងជំងឺមិនឆ្លងឱ្យកាន់តែមានប្រសិទ្ធភាព ជាពិសេសគឺកែលម្អការផ្តល់សេវាសុខាភិបាលប្រកបដោយគុណភាពជូនប្រជាពលរដ្ឋក្នុងខេត្តកំពង់ចាម។

Executive Summary

This Baseline Survey Report presents the findings of an extensive assessment conducted by the Noncommunicable Disease (NCD) Control Project, implemented by the Ministry of Health, Kampong Cham Provincial Health Department and JICA, from June to July 2024. The primary objective of this survey was to evaluate the current state of NCD program management and hospital service delivery in Kampong Cham Province, Cambodia. This survey provides a critical foundation for identifying strengths, weaknesses, and areas for improvement in the management of NCDs, particularly diabetes, hypertension, and cervical cancer, within the provincial healthcare system.

Objectives

The specific objectives of the survey were as follows:

1. **Assess the current service delivery of NCDs at the provincial hospital (PH) and district referral hospitals (RHs)**: To evaluate the availability and provision of diabetes (DM), hypertension (HT), and cervical cancer (CC) services at the PH and RHs against their expected roles.
2. **Examine the situation of NCD program management at provincial health department (PHD) and operational district (OD) offices**: To assess the availability and adequacy of resources, infrastructure, and personnel dedicated to NCD program management.
3. **Provide actionable recommendations**: To develop actionable recommendations to improve NCD program management and hospital service delivery in Kampong Cham Province.

Key Findings and Recommendations

Through this survey, the NCD Control Project has gained critical insights into the current strengths and gaps in NCD program management and hospital service delivery in Kampong Cham Province. While significant progress was made in identifying areas requiring improvement, several challenges remain. The following recommendations are aimed at addressing these challenges to ensure the continuous enhancement of hospital service delivery and more effective NCD program management moving forward.

1. Diabetes and Hypertension (DM and HT) Service

Key Findings:

- **Gaps in service delivery:** Significant gaps in the availability and provision of DM and HT services were identified compared to what is expected of PH and RHs in the existing clinical practice guidelines (CPGs) and standard operational procedures (SOPs). At RHs, only two oral medicines were used for treatment, follow-up and referral procedures were inconsistent, and assessment and treatment of DM complications were rarely done. At PH, insulin was available, but stock was limited, assessment of complications was not done regularly, and treatment of complications was limited to DM foot ulcers.
- **Testing reagents and medicines:** For DM, Glucometers, Metformin and Glibenclamide were generally available at RHs, but HbA1C reagents and insulin were not, limiting the management of DM. For HT, blood pressure meters, calcium-channel blocker and beta blocker were available; however, most hospitals did not have ACE inhibitor/ARB and thiazide diuretics.

Recommendations to the NCD Control Project:

- **Ensure appropriate blood glucose control and referral:** Discuss ways to procure HbA1c test reagents, revise the DM handbook, develop educational materials on HbA1c, draft a care flow chart at RHs including referral to PH.
- **Strengthen DM treatment capacity at the PH and RHs:** Support the estimation of medicine quantities and costs for budgeting, review and revise CPGs, and conduct refresher training for doctors.
- **Improve DM foot assessment and care at RHs:** Develop and conduct practical training on DM foot assessment and care.
- **Set measurable indicators to measure progress.**

2. Cervical Cancer Screening and Treatment (CCS&T)

Key Findings:

- **Gaps in service delivery:** Although visual inspection with acetic acid (VIA) and thermal ablation were available, their provision was very limited at RHs, aggravated by the low awareness of CC screening among women and absence of referral cases from health centers (HCs). At PH, the necessary equipment and trained staff for further treatment (LEEP) were lacking.
- **Training on CCS&T:** There were needs for training for midwives and doctors to enhance their knowledge, skills and confidence in providing CCS&T.

Recommendations to the NCD Control Project:

- **Consider the introduction of HPV test for CC screening:** Instead of pursuing the expansion of VIA for CC screening, transition to HPV test may be considered.
- **Strengthen the capacity of precancer treatment:** Establish a training program for thermal ablation at RHs and introduce LEEP at PH.
- **Set measurable indicators to measure progress**.

3. NCD Program Management

Key Findings:

- **NCD Annual Operating Plans (AOP):** NCD AOP has never been developed at the PHD and OD offices, resulting in the absence of a specific budget to run the NCD program, except for H-EQIP 2 activities.
- **Budgeting for HbA1C reagents and insulin:** HbA1C reagents and insulin have never been ordered from PHD and OD offices and are expected to be purchased by the hospitals on their own using the H-EQIP 2 fund.
- **Supervision to ODs and RHs:** Supervision from the PHD is conducted irregularly. ODs have monthly meetings with RHs to exchange patient data and discuss general issues, but these meetings do not function as formal supervision.
- **Data for monitoring progress of the NCD program:** DM, HT and CC data collected in the HMIS only reflect the cumulative number of patients seen every month. Data collected in the paper-based registries are also insufficient to monitor the progress of NCD programs.

Recommendations to the NCD Control Project:

- **Activate PHD's Technical Group:** Activate the NCD Technical Group to provide technical support for PHD, ODs, PH and RHs.
- **Develop NCD action plan:** Create NCD action plans including the budget for necessary training, supervision, medications and equipment.
- **Strengthen supportive supervision to RHs by PHD and ODs:** Regularize and enhance supervision practices to RHs by PHD and ODs.
- **Review data collection and set measurable indicators:** Define and monitor performance indicators for NCD program.

Conclusion

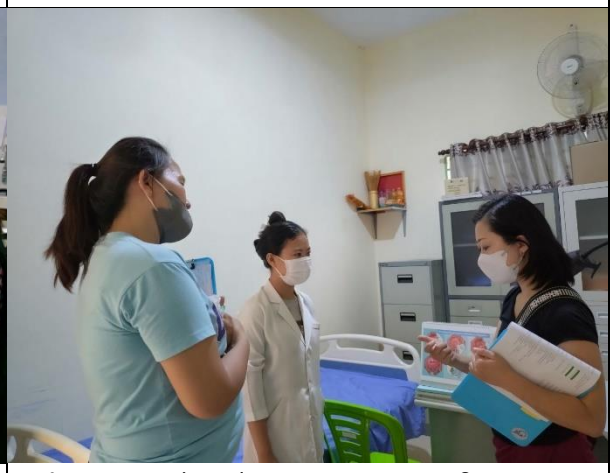
The findings of this survey highlight critical areas requiring targeted interventions. The recommendations are intended to guide the NCD Control Project in developing and implementing strategies to improve NCD program management and hospital service delivery in Kampong Cham Province. By addressing the identified gaps and leveraging existing resources, the project aims to enhance healthcare services and manage NCDs more effectively, ultimately improving health outcomes for the population of Kampong Cham Province.

Visual Overview of Survey Activities

Picture 1: Technical assessment on NCD program management

Picture 2: Technical assessment on NCD program management

Picture 3: Technical assessment on DM/HT



Picture 4: Technical assessment on CCS&T

Picture 5: Opening in the Workshop on the Baseline Survey Results

Picture 6: Group work in the Workshop (Group 1: NCD Program Management)

Picture 7: Group work in the Workshop
(Group 2: DM/HT)

Picture 8: Group work in the Workshop
(Group 3: CCS&T)

Picture 9: Group Photo of All Workshop Participants

Abbreviation Table

AOP	Annual Operating Plan
CCS&T	Cervical Cancer Screening and Treatment
CPG	Clinical Practice Guidelines
DM	Diabetes Mellitus
HbA1C	Hemoglobin A1c
HC	Health Centre
H-EQIP	Health Equity and Quality Improvement Project
HMIS	Health Management Information System
HPV	Human Papillomavirus
HT or HTN	Hypertension
JICA	Japan International Cooperation Agency
KC or KCM	Kampong Cham
LEEP	Loop Electrosurgical Excision Procedure
MoH	Ministry of Health
NCD	Noncommunicable Disease
NCGM	National Center for Global Health and Medicine
OD	Operational District
PHD	Provincial Health Department
PH	Provincial Hospital
PMD	Preventive Medicine Department
RH	Referral Hospital
SOP	Standard Operating Procedures
VHSG	Village Health Support Group
VIA	Visual Inspection with Acetic Acid
WHO	World Health Organization

1. Introduction

1.1 Background Information

NCDs, such as diabetes, cardiovascular disease, and cancer, are leading causes of morbidity and mortality globally[1]. In Cambodia, the burden of NCDs has been steadily increasing, posing significant challenges to the healthcare system[2]. The growing burden of NCDs across the country necessitates a comprehensive evaluation of the current healthcare services and their effectiveness in managing these conditions.

The NCD Control Project (hereafter, the Project) is a four-year joint project initiated in February 2024 with an aim to strengthen the capacities of the Ministry of Health and Kampong Cham Province to control DM, HT and CC (Figure 1). Based on the agreed plan, the first step of the Project was to conduct a baseline survey to assess the state of NCD program management and hospital service delivery in Kampong Cham. This survey aimed to identify strengths, weaknesses, and gaps in the existing healthcare framework, providing a foundation for targeted interventions and improvements.

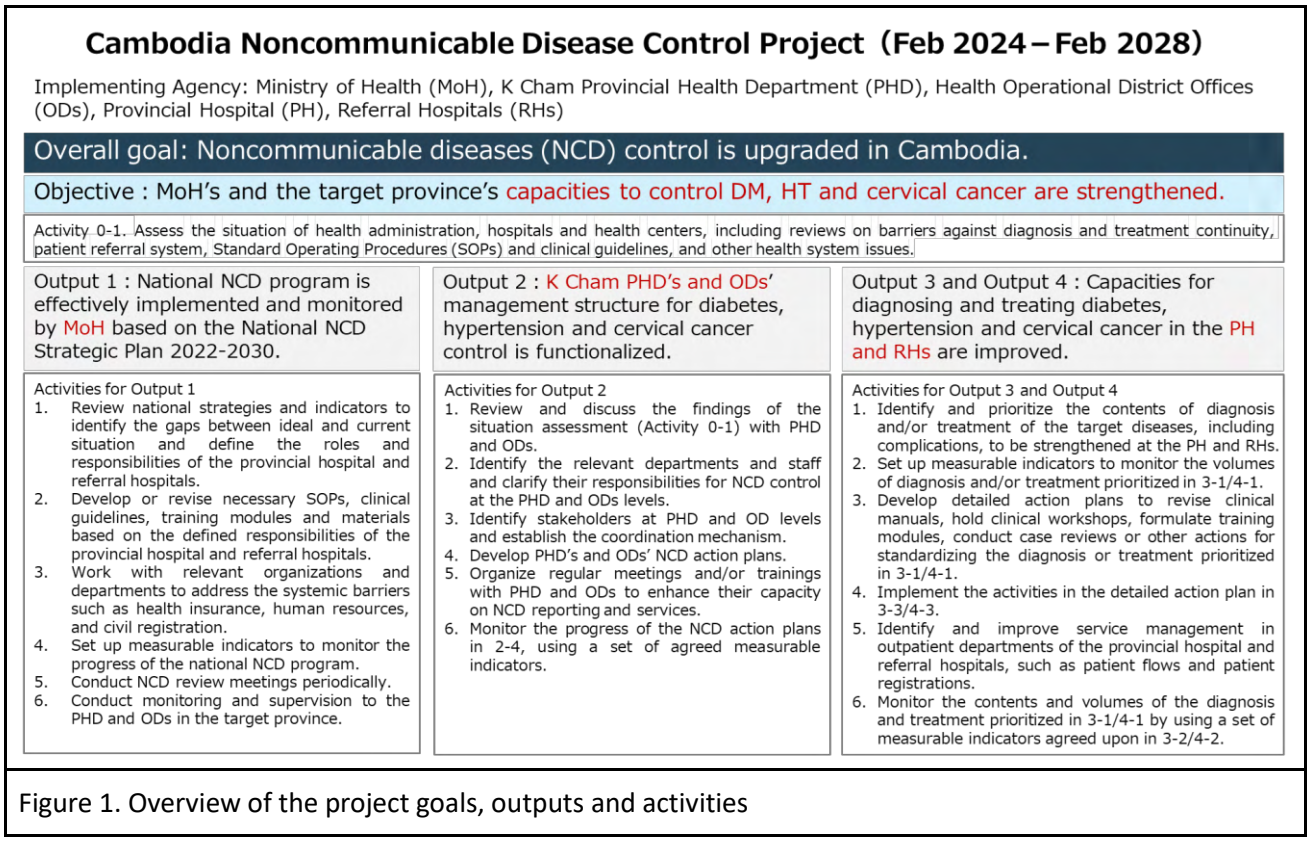


Figure 1. Overview of the project goals, outputs and activities

[1] WHO. NCD Factsheet

[2] UNIATF. Prevention and Control of Noncommunicable Diseases in Cambodia: The Case for Investment

1.2 Purpose and Objectives of the Survey

The specific objectives of the survey were as follows:

1. **Assess the current service delivery of NCDs at the provincial hospital (PH) and district referral hospitals (RHs)**: To evaluate the availability and provision of DM, HT, and CC services at the PH and RHs against their expected roles. Assessment of HCs was out of the scope of this survey.
2. **Examine the situation of NCD program management at provincial health department (PHD) and operational district (OD) offices**: To assess the availability and adequacy of resources, infrastructure, and personnel dedicated to NCD program management.
3. **Provide actionable recommendations**: To develop actionable recommendations aimed at improving NCD program management and hospital service delivery in Kampong Cham Province.

This survey provides a foundation for targeted interventions and improvements, helping to shape the areas of action for the NCD Control Project.

2. Methodology

The survey was designed to provide a comprehensive understanding of the situation of NCD program management and hospital service delivery through a mixed-method approach. The primary tool used for data collection was the Hospital Baseline Survey Questionnaire, which was designed to assess the current state of NCD service delivery in PH and RHs. Additionally, interview questionnaires were developed to assess NCD program management practices at the PHD and OD offices. The names of ODs, hospitals and the number of HCs in the respective ODs are listed in Table 1.

Table 1. The names of ODs, hospitals and the number of HCs

Name of ODs	Name of hospitals	Number of HCs in the OD
Kampong Cham - Kg. Siem OD	(CPA3) Kampong Cham Provincial Hospital	15
Chamkar Leu OD	(CPA2) Chamkar Leu Referral Hospital	12
Cheung Prey OD	(CPA2) Cheung Prey Referral Hospital	7
Batheay OD	(CPA2) Batheay Referral Hospital	10
Kang Meas OD	(CPA1) Kang Meas Referral Hospital	11
Koh Sotin OD	(CPA1) Koh Sotin Referral Hospital	7
Prey Chhor OD	(CPA1) Prey Chhor Referral Hospital	11
Srey Santhor OD	(CPA2) Srey Santhor Referral Hospital	9
Stueng Trang OD	(CPA1) Hun Sen Stung Trang Referral Hospital	12

2.1 Development of the Hospital Baseline Survey Questionnaire

The Hospital Baseline Survey Questionnaire was carefully developed based on the national guidelines, SOPs and other national standards related to NCDs in consultation with the PMD of the MoH, and the PHD of Kampong Cham. The national standards referenced are listed in Table 2. The questionnaire consisted of six parts: General Information, Diabetes Mellitus/Hypertension (DM/HT), Cervical Cancer Screening and Treatment (CCS&T), Pharmacy, Laboratory, and Medical Imagery. These sections were tailored to capture detailed information on various aspects of hospital service delivery and NCD program management.

Table 2. National standards related to NCDs

Name	Year of publication	English version
General		
Guidelines on Complementary Package of Activities for Referral Hospital Development	2014	✓(official)
List of Essential Medicines, 10th Edition	2024	✓(official)
DM and HT		
Clinical Practice Guidelines for Type 2 Diabetes	2015	✓(official)
Clinical Practice Guidelines for Arterial Hypertension	2015	✓(official)
National SOP for DM and HT Management in Primary Care	2019	✓(official)
[Updated] National SOP for the Management of HT/DM at PHC	2024	✓(official)
National SOP for DM and HT Services at Referral Hospitals	2021	✓(preliminary)
Diabetic Foot Care Guideline	2022	✓(preliminary)
CC		
National SOP for Cervical Cancer Screening	2018	✓(official)
[Updated] National SOP for Cervical Cancer Screening and Management	2024	✓(official)
Technical Notice for Additional Treatment Method of Cervical Pre-cancer Lesion	2019	✓(official)

2.2 Pilot of the Hospital Baseline Survey Questionnaire

To ensure the clarity of the questionnaire, a pilot survey was conducted at two selected hospitals, namely the Kampong Cham PH and Prey Chhor RH. This was followed by preliminary assessments through site visits. Feedback from this pilot phase was crucial in identifying ambiguities and inconsistencies in the questionnaire. Based on the insights gained, necessary amendments were made to improve the questionnaire's accuracy.

2.3 Full Survey Implementation

After refining the hospital baseline survey questionnaire, the full survey for the hospitals was conducted. The survey process, including the NCD program management, involved four main phases:

1) Hospital Baseline Survey Questionnaire distribution: The questionnaires were sent to the remaining seven RHs (Cheung Prey RH, Srey Santhor RH, Batheay RH, Chamker Leu RH, Koh Soutin RH, Steung Trang RH, Kang Meas RH), and responses were collected to gather data.

2) Preliminary assessments: Following the collection of questionnaire responses, preliminary assessments were conducted by the JICA team (Technical Expert and Technical Assistants). These assessments involved site visits to gather basic information about hospital services and NCD management practices in the hospitals.

3) Technical assessments on NCD service delivery: Subsequent to the preliminary data collection, technical assessments were conducted by a Japanese general practitioner for DM/HT services

and a gynaecologist for CC services. These assessments provided a detailed evaluation of the technical and clinical aspects of service delivery in the hospitals.

4) Technical assessments on NCD program management: Upon the arrival of the short-term health administration expert in Kampong Cham, technical assessments were conducted with directors and NCD focal personnel of the PHD and selected OD Offices to further evaluate NCD program management practices and identify areas for improvement.

The detailed instructions on data entry and preliminary assessments for the hospital baseline survey are presented in **Appendix 1**. **Appendix 2** contains the specific assessment criteria and questions used during hospital evaluations. The interview questionnaire used with the PHD and OD Offices is provided in **Appendix 3**.

2.4 Data Collection and Analysis

Prior to the technical assessments, the team analyzed the preliminary data to identify key areas of focus. This initial analysis helped to shape specific areas requiring detailed evaluation and allowed the team to tailor the technical assessments accordingly.

Then, the team conducted comprehensive technical assessments and gathered additional data through direct observations and interviews. The collected data were then analyzed to derive meaningful insights and identify patterns and trends.

Based on the analysis, the team drafted the results and formulated preliminary proposals to address the identified gaps and challenges in NCD program management and hospital service delivery. These proposals were aimed at enhancing the effectiveness of NCD programs and improving the overall quality of healthcare services in Kampong Cham Province.

3. Survey Implementation Schedule

Below is the schedule that the project has implemented for the baseline survey on NCD program management and hospital service delivery in Kampong Cham Province. After the preliminary assessments, the JICA team conducted technical assessments, during which they were divided into two teams: one focused on NCD program management and the other on hospital service delivery.

The detailed schedule, including specific dates and tasks for each team, is provided in **Appendix 4**.

Table 3: Baseline Survey Implementation Schedule

Date	Task	Remarks
～6/3	Draft, 1st finalization of the pilot hospital survey	The draft was amended with comments from the PMD MoH & KC PHD NCD team
6/4-5	Meeting with the KC PH & Prey Chhor RH for the pilot survey arrangement	
6/4	KC PHD Director issued the official letter to commence the Baseline survey	
6/5-10	Baseline Survey: PH and Prey Chhor RH	Distributed the Baseline Survey Questionnaire to both hospitals
6/10-12	Preliminary assessment for the PH and Prey Chhor RH	

6/13	Finalization of the hospital survey questionnaire	
6/14, 17	Hospital survey questionnaire distribution visit	RH: Steung Trang, Chamkar Leu, Batheay, Chung Prey, Srey Santhor, Kang Meas and Koh Soutin
6/24-28	Preliminary assessment	
7/3	Complete the preliminary assessment data entry	
7/9 ～	Technical assessment for 1) Cervical Cancer Screening and Treatment (CCS&T) 2) Diabetes, Hypertension (DM/HT)	1) Dr. HARUYAMA Rei, Chief Advisor to the JICA NCD Control Project 2) Dr. AOYAGI Kanako, National Center for Global Health and Medicine (NCGM)
7/15～	Technical assessment for PHD and OD Offices on NCD program management	Dr. YOKOBORI Yuta, NCGM
7/23	Pre-Workshop Meeting with PMD MoH, PHD & JICA Team	Discuss proposal & contents of the Workshop
7/24	Assessment Feedback Workshop (WS) at the KC PHD Agenda 1) Overview of the Project and the Baseline Survey 2) Feedback: Assessment results on NCD Management, DM/HT and CCS&T 3) Way Forward	WS 8:00-12:00; Participants: PMD MoH, KC PHD, and hospitals' authorities

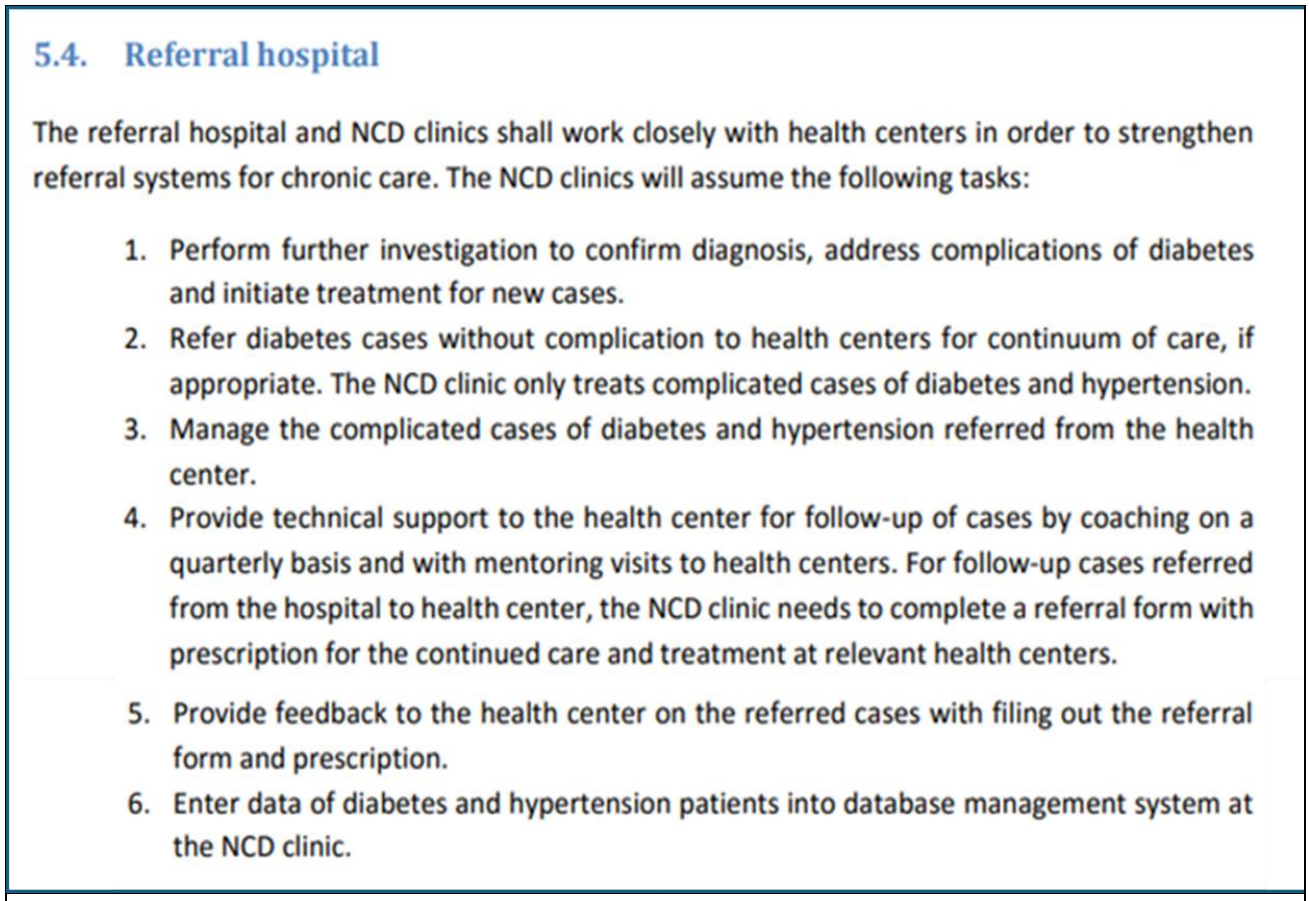
The key baseline survey results, including general information, NCD services, referral systems, and human resources across CPA 1, 2, and 3, have been extracted and are provided in **Appendix 5.**

4. Findings and Recommendations

4.1 Diabetes and Hypertension Diagnosis and Treatment Services

4.1.1 Expected Flow of Service Delivery and Roles of RH and PH

As of June 2024, the National Standard Operating Procedure for Diabetes and Hypertension Management in Primary Care 2019 (SOP PC 2019) serves as the guiding document for diabetes (DM) and hypertension (HT) service delivery[3]. According to this SOP, all referral hospitals (RHs) are expected to have a NCD clinic (outpatient service for DM/HT care) aside from the general outpatient department. The role of NCD clinics includes confirmation of diagnosis, initiation of treatment, management of complications, and addressing complex cases from HCs (Figure1). The specific role of provincial hospitals (PHs) and referral criteria from RHs to PH are not written in the SOP.



5.4. Referral hospital

The referral hospital and NCD clinics shall work closely with health centers in order to strengthen referral systems for chronic care. The NCD clinics will assume the following tasks:

1. Perform further investigation to confirm diagnosis, address complications of diabetes and initiate treatment for new cases.
2. Refer diabetes cases without complication to health centers for continuum of care, if appropriate. The NCD clinic only treats complicated cases of diabetes and hypertension.
3. Manage the complicated cases of diabetes and hypertension referred from the health center.
4. Provide technical support to the health center for follow-up of cases by coaching on a quarterly basis and with mentoring visits to health centers. For follow-up cases referred from the hospital to health center, the NCD clinic needs to complete a referral form with prescription for the continued care and treatment at relevant health centers.
5. Provide feedback to the health center on the referred cases with filing out the referral form and prescription.
6. Enter data of diabetes and hypertension patients into database management system at the NCD clinic.

Figure 1. Roles and responsibilities of RHs described in the SOP PC 2019

[3] MoH. National Standard Operating Procedure for Diabetes and Hypertension Management in Primary Care 2019

Regarding clinical aspect, Clinical Practice Guidelines for Type 2 Diabetes 2015 (CPG DM 2015)[4] and Clinical Practice Guidelines for Arterial Hypertension in Adult 2015 (CPG HT 2015)[5] exist as standards.

CPG DM 2015 states that the focus of care for type 2 DM is blood glucose control and prevention of complications. Blood glucose and HbA1c testing are recommended at the initial visit and every 3-6 months. The treatment algorithm (Figure 2) includes lifestyle measures and medication using biguanide (Metformin), sulfonylurea (Gliclazide, Glibenclamide), insulin (rapid-acting, long-acting, and pre-mixed insulin), alpha-glucosidase inhibitor, DPP-4 inhibitor, or thiazolidinedione.

However, the National Essential Medicines List (EML) 2024 [6] lists only biguanide (Metformin), sulfonylurea (Gliclazide, Glibenclamide), insulin (short-acting, intermediate-acting, long-acting, pre-mixed), and empagliflozin, showing discrepancies with the medicines listed in the CPG (Figure 3 and 4).

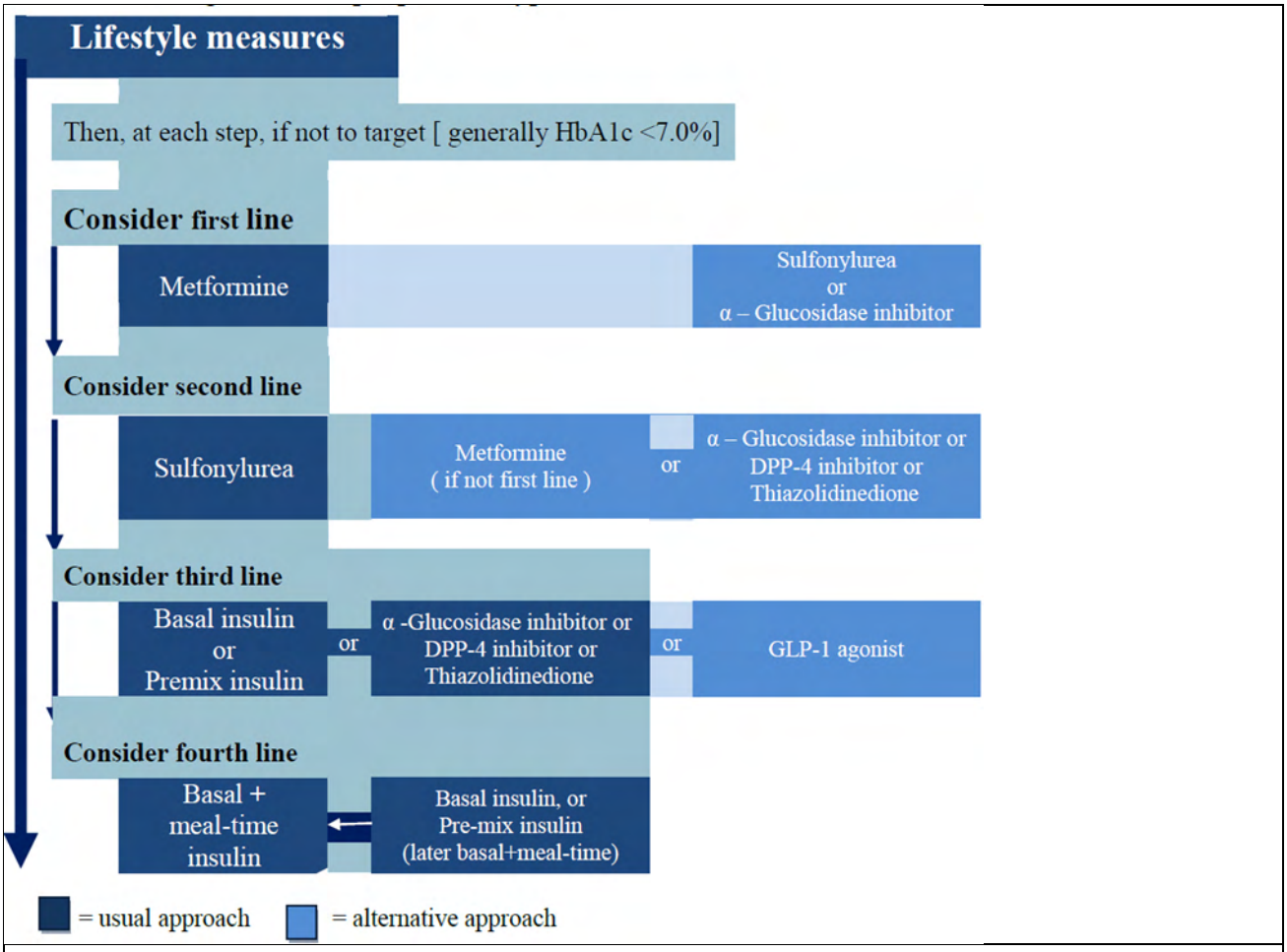


Figure 2. Type 2 DM treatment Algorithm

[4] MoH. Clinical Practice Guidelines for Type 2 Diabetes 2015
[5] MoH. Clinical Practice Guidelines for Arterial Hypertension in Adult 2015
[6] MoH. Essential Medicines List. 10th Edition. 2024.

CMS code	Name	ATC code	Dosage form	Strength	Adults	Children	MPA	CPA1	CPA2	CPA3	V'E'N
18.2 Medicines for diabetes											
18.2.1 Insulins											
	Insulin, injection soluble	A10AC01	Injection	100 IU/mL in 10-mL vial	Adults	Children'	/	SN	SN	SN	V
	Insulin, intermediate acting	A10AC01	Injection	40 IU/mL in 10 mL vial	Adults		/	SN	SN	SN	V
				100 IU/ mL in 3mL cartridge or pre-filled pen	Adults	Children'	/	SN	SN	SN	V
NK0031	Insulin, long- acting	A10AE04	Injection	100 IU/ mL in 3mL cartridge or pre-filled pen	Adults	Children'	/	SN	SN	SN	V
NK0034	Premixed Insulin 70/30	A10AD01	Injection	100 IU/mL			/	/	SN	SN	V
18.2.2 Oral hypoglycemic agents											
	Empagliflozin	A10BK03	Tablet	10 mg	Adults						
				25 mg	Adults						
	Gliclazide	A10BB09	Solid oral dosage form: (controlled-release tablets)	30 mg;	Adults		*	*	*	*	V
				60 mg;	Adults		*	*	*	*	V
				80 mg	Adults		*	*	*	*	V
	Glibenclamide [NB]	A10BB09	Tablet	5 mg	Not over 60 years old		SN	SN	SN	SN	N
			NB – Glibenclamide – is not suitable for use in adults above 60 years of age								
NK0040	Metformin	A10BA02	Tablet	500 mg (hydrochloride)	Adults	Children	SN	*	*	*	V

Figure 3. List of medicines for diabetes in the EML 10th edition

Medicine	CPG p.20 (treatment algorithm)	CPG p.22 (table of oral glucose-lowering agents)	Essential Medicine List
Biguanide (Metformin)	✓	✓	✓
Sulfonylurea (Glibenclamide)	✓	✓	✓
Thiazolidines (Pioglitazone)	✓	✓	-
Alpha-glucosidase inhibitors	✓	✓	-
DPP4 inhibitor	✓	-	-
Glinide	-	✓	-
GLP-1 agonist	✓	-	-
SGLT2 inhibitor	-	-	✓

Figure 4. Comparison of oral medicines listed in the CPG DM 2015 and EML 10th edition

As for the prevention of complications, CPG DM 2015 recommends:

- Cardiovascular risk assessment at first visit and annually
- Eye (retinopathy) screening at first visit and every 1-2 years
- Kidney (nephropathy) screening at first visit and annually
- Foot (neuropathy) care at first visit and annually. Guidelines on Prevention and Management of Diabetic Foot Disease 2022 also exist to guide care[7].

[7] MoH. Guidelines on Prevention and Management of Diabetic Foot Disease 2022

CPG HT 2015 states that the care of HT involves lifestyle interventions and medication. If blood pressure does not stabilize with lifestyle changes, thiazide-type diuretic, ACE inhibitor/ARB, or calcium channel blocker, alone or in combination, are recommended depending on the presence of diabetes and chronic kidney disease and patient's age (Figure 5). In the National Essential Medicines List 2024, these three medicines (thiazide-type diuretic, ACE inhibitor/ARB, and Calcium channel blocker) are included, as well as others such as beta-blocker, methyldopa, and combination tablets (Figure 6).

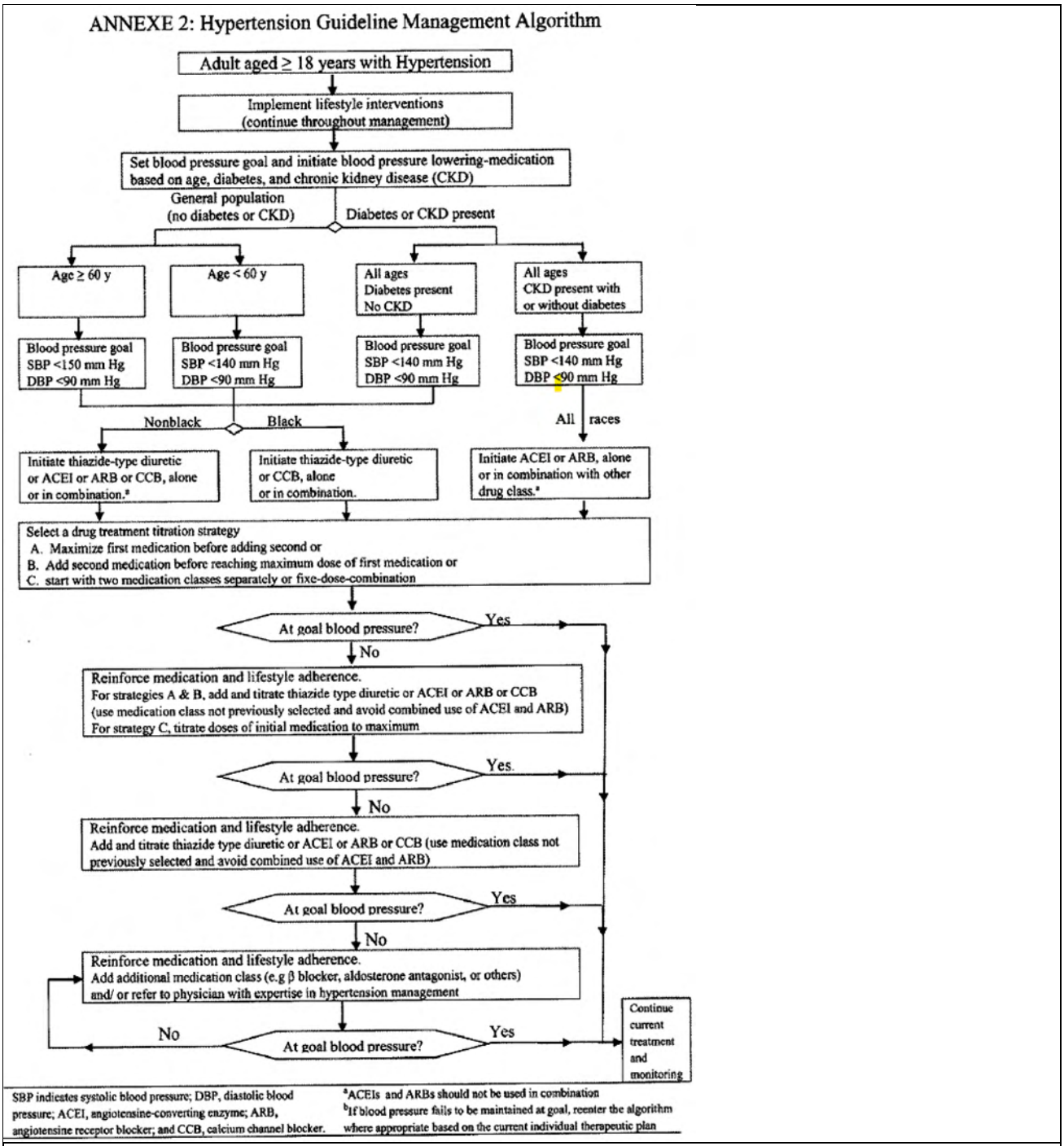


Figure 5. Hypertension treatment algorithm

CMS code	Name	ATC code	Dosage form	Strength	Adults	Children	MPA	CPA1	CPA2	CPA3	V'E'N
12.3 Antihypertensive medicines											
AA0081	Amlodipine	C08CA01	Tablet	5 mg (as maleate, mesylate or besylate)			*	*	*	*	V
AA0080	Atenolol [NB]	C07AB03	Tablet	50 mg	Not older than 60 years		*	*	*	*	V
			NB – atenolol should not be used as a first-line agent in uncomplicated hypertension in patients > 60 years								
	Bisoprolol	C07AB07	Tablet	2.5 mg	Adults		*	*	*	*	V
				5 mg	Adults		*	*	*	*	V
	Enalapril	C09AA02	Tablet	2.5 mg (as hydrogen maleate)	Adults	Children	*	*	*	*	V
				5 mg (as hydrogen maleate)	Adults		*	*	*	*	V
AA0202				10 mg (as hydrogen maleate)	Adults		*	*	*	*	V
AB0240	Hydralazine [NB]	C02DB02	Powder for injection	20 mg (hydrochloride) in ampoule	Adults		SN	*	*	*	V
AA0250			Tablet	25 mg (hydrochloride)	Adults		*	*	*	*	V
			NB – Hydralazine is listed for use only in the acute management of severe pregnancy-induced hypertension. Its use in the treatment of essential hypertension is not recommended in view of the evidence of greater efficacy and safety of other medicines.								
AA0260	Hydrochlorothiazide	C03AA03	Solid oral dosage form (tablet or capsule)	25 mg	Adults		*	*	*	*	V
	Lisinopril + amlodipine	C09BB03	Tablet	10 mg + 5 mg	Adults		SN	SN	SN	SN	N
				20 mg+ 5 mg	Adults		SN	SN	SN	SN	N
				20 mg+ 10 mg	Adults		SN	SN	SN	SN	N
	Lisinopril + hydrochlorothiazide	C09BA03	Tablet	10 mg + 12.5 mg	Adults		SN	SN	SN	SN	N
				20 mg + 12.5 mg	Adults		SN	SN	SN	SN	N
				20 mg + 25 mg	Adults		SN	SN	SN	SN	N
	Losartan	C09CA01	Tablet	25 mg	Adults		*	*	*	*	V
				50 mg	Adults		*	*	*	*	V
AA0290	Methyldopa [NB]	C02AB01	Tablet	250 mg	Adults		SN	*	*	*	V
			NB – Methyldopa is listed for use only in the management of pregnancy-induced hypertension. Its use in the treatment of essential hypertension is not recommended in view of the evidence of greater efficacy and safety of other medicines.								
	Telmisartan + amlodipine	C09DB04	Tablet	40 mg + 5 mg	Adults		SN	SN	SN	SN	N
				80 mg + 5 mg	Adults		SN	SN	SN	SN	N
				80 mg + 10 mg	Adults		SN	SN	SN	SN	N
	Telmisartan + hydrochlorothiazide	C09DA07	Tablet	40 mg + 12.5 mg	Adults		SN	SN	SN	SN	N
				80 mg + 12.5 mg	Adults		SN	SN	SN	SN	N
				80 mg + 25 mg	Adults		SN	SN	SN	SN	N

Figure 6. List of medicines for hypertension in the EML 10th edition

4.1.2 Findings from the Survey

4.1.2.1 NCD clinic

Among the nine hospitals, PH and two RHs (Batheay RH and Cheung Prey RH) had a NCD clinic established aside from the general OPD. Three RHs (Kang Meas RH, Chamkar Leu RH and Cheung Prey RH) had a contract with a private service operated by MoPoTsyo every 1-2 weeks. Some of these hospitals were totally dependent on MoPoTsyo in terms of DM and HT service delivery and even referred patients with NSSF and HEF to this private service regardless of their affordability. On the

other hand, there was a hospital that strengthened their NCD clinic and reduced the proportion of patients using the private service.

4.1.2.2 Type 2 DM: Blood glucose control

In the survey, we examined whether the glucometer, HbA1c and essential medicines exist at the PH and RHs. The results are shown in Figure 7. All RHs/PH had point-of-care glucometers and HbA1c test device. However, HbA1c could not be tested at five RHs because the reagents (test kits) were either expired or gone. Some hospitals requested replenishment from the Central Medical Store but have never received it. Doctors also mentioned that some patients do not agree to be tested or cannot afford to pay for the test because of its high cost (30,000-40,000 KHR). It also seems that some doctors are not fully aware of the significance of the test and forget to offer it every three to six months. When we reviewed the medical records of 10 patients (six random and four under insulin use) at the PH, five cases were tested at the initial visit but not regularly during follow-up (Figure 8).

As for treatment, most hospitals had IEC materials to explain about diabetes, but the staff mentioned that they lacked knowledge on diet therapy. All RHs except one had two kinds of medication: Metformin and Glibenclamide (Kang Meas RH had only Metformin). The stock in the pharmacies appeared sufficient, although the prescription quantities were adjusted by one to two weeks to avoid shortages in some hospitals. None of the RHs had insulin or any other medicines listed in the CPG DM 2015 and EML. Some doctors mentioned that insulins cannot be used in CPA 1-2 because they are not included in the hospital EML and cannot be ordered from the Central Medical Store. On the other hand, most doctors agreed that they should be able to prescribe insulin at RHs. At PH, in addition to Metformin and Glibenclamide, there were three types of insulin (rapid-acting, long-acting, and premixed) at the time of our survey visit, but the pharmacy staff and doctors mentioned that they are sometimes out of stock.

In this situation, where insulin cannot be prescribed at RHs, patients whose glucose is not controlled with two oral medications should be referred to PH. However, the number of patients referred to PH was only one to two per month, suggesting that a certain number of patients are not receiving appropriate treatment. Also of note, in Kampong Cham, pen-type insulin does not exist (even at private pharmacies), posing various risks and difficulties to patients.

			
Glucometer	HbA1c test device (procured by MoH)	IEC leaflet	Poster

	Kang Meas RH	Steung Trang RH	Prey Chhor RH	Koh Soutin RH	Chamkar Leu RH	Bathe ay RH	Srey San-thor RH	Cheurng Prey RH	Kampong Cham PH
	CPA 1	CPA 1	CPA 1	CPA 1	CPA 2	CPA 2	CPA 2	CPA 2	CPA 3
Glucometer	✓	✓	✓	✓	✓	✓	✓	✓	✓
HbA1c (equipment)	✓	✓	✓	✓	✓	✓	✓	✓	✓
HbA1c (reagent)	-	-	-	✓	-	✓	-	✓	✓
Metformin	✓	✓	✓	✓	✓	✓	✓	✓	✓
SU	-	✓	✓	✓	✓	✓	-	✓	✓
Insulin	-	-	-	-	-	-	-	-	✓ some times no
Patient referred from RH									1-2/month

Figure 7. Availability of medical devices and medicines for blood glucose control

Patient	First visit	1 month	2 month	3 month	4 month	5 month	6 month	7 month	8 month	9 month	10 month	11 month	12 month
Patient A	×	×	×	×	×	×	×	×	×	×	×	×	
Patient B	8.0		×	×	×								
Patient C	7.2	×	×	×	×	×		×		×		×	
Patient D	7.3	×		×		×							
Patient E	×		×		×								
Patient F	13.3	×	12	×	×	×	9.2	×	×	×			
Patient G	6.1	×	×	×	×				×				
Patient H	×		×	×	×	×	×	×	×	×			
Patient I	×	×		×	×	8.4	×						
Patient J	×	×	×	9.0	×								

Figure 8. Frequency of HbA1c test for ten DM patients at provincial hospital (*X indicates that the patient visited the hospital but was not tested for HbA1c)

4.1.2.3 Type 2 DM: Prevention of complication

For DM chronic complications, we examined whether 1) neuropathy/foot disease, 2) retinopathy, 3) nephropathy, and 4) CVD risk were routinely assessed, whether the necessary equipment and medical devices existed, and whether treatment was available upon diagnosis.

1) DM neuropathy/foot disease

At RHs, there were no instruments (reflex hammer, 128 Hz tuning fork, monofilament, etc.) to properly assess neuropathy. Some physicians used a pen to check for loss of sensation (Figure 9). If a foot ulcer was found, it was either cared for at RH or sent to PH, depending on the size. At PH, a reflex hammer was used for evaluation and foot ulcers were treated by an infectious disease specialist or a surgeon if amputation was necessary.

	Kang Meas RH	Steung Trang RH	Prey Chhor RH	Koh Soutin RH	Chamkar Leu RH	Batheay RH	Srey San-thor RH	Cheurng Prey RH	Kampong Cham PH
	CPA 1	CPA 1	CPA 1	CPA 1	CPA 2	CPA 2	CPA 2	CPA 2	CPA 3
DM foot Guideline	-	-	✓	-	-	✓	-	-	✓
Routine check	-	✓	✓	-	-	-	-	✓	✓
Tendon reflex	-	-	-	-	-	-	-	-	✓
Tuning fork	-	-	-	-	-	-	-	-	-
Monofilament	-	-	-	-	-	-	-	-	-
Foot ulcer treatment	-	-	-	-	-	-	-	-	✓ (Infectious Disease doctor)

Figure 9. Availability of medical devices and treatment for DM neuropathy/foot disease

2) DM retinopathy screening

At RHs, there were no instruments (fundoscopy, slit lamp with 90D lens, retinal imaging) to examine retinopathy; at PH, two slit lamps with 90D lens were used to examine the fundus condition (Figure 10). According to the chief of the ophthalmology unit, if retinopathy is suspected, patients are referred to a national hospital for more accurate diagnosis and laser treatment.

	Kang Meas RH	Steung Trang RH	Prey Chhor RH	Koh Soutin RH	Chamkar Leu RH	Batheay RH	Srey San-thor RH	Cheurng Prey RH	Kampong Cham PH
	CPA 1	CPA 1	CPA 1	CPA 1	CPA 2	CPA 2	CPA 2	CPA 2	CPA 3
Ophthalmologist	-	-	-	-	-	-	-	-	✓
Routine check	-	-	-	-	-	-	NA	-	✓
Fundoscopy	-	-	-	-	-	-	-	-	-
Slit Lump + 90D	-	-	-	-	-	-	-	-	✓
Retinal imaging	-	-	-	-	-	-	-	-	-
Laser	-	-	-	-	-	-	-	-	-

Figure 10. Availability of medical devices and treatment for DM retinopathy

3) DM nephropathy screening

Urinalysis and blood tests for nephropathy were available in most RHs and PH; however, they were not routinely evaluated (Figure 11). ACE inhibitors and ARBs, which are recommended for use in patients with proteinuria and low eGFR, were also not available in six RHs. Hemodialysis services do not exist in PH.

Baseline survey result: Nephropathy									
	Kang Meas RH	Steung Trang RH	Prey Chhor RH	Koh Soutin RH	Chamkar Leu RH	Batheay RH	Srey San-thor RH	Cheurng Prey RH	Kampong Cham PH
	CPA 1	CPA 1	CPA 1	CPA 1	CPA 2	CPA 2	CPA 2	CPA 2	CPA 3
Routine check	-	-	-	-	-	-	✓	-	✓
Proteinuria	-	✓	✓	✓	✓	✓	✓	✓	✓
BUN/Cre	✓	✓	-	✓	✓	✓	✓	✓	✓
Potassium	-	-	-	-	-	✓	-	-	✓
ACE/ARB	-	-	-	-	✓	-	-	-	✓

Figure 11. Availability of tests and treatment for DM nephropathy

4) Cardiovascular disease risk assessment

At all RHs and PH, lipid profiles could be tested but CVD risk was not routinely assessed (Figure 12). ECG was available in only three RHs and the PH. A physician stated that he would immediately refer any patient with chest pain to a national hospital.

Baseline survey result: CVD risk									
	Kang Meas RH	Steung Trang RH	Prey Chhor RH	Koh Soutin RH	Chamkar Leu RH	Batheay RH	Srey San-thor RH	Cheurng Prey RH	Kampong Cham PH
	CPA 1	CPA 1	CPA 1	CPA 1	CPA 2	CPA 2	CPA 2	CPA 2	CPA 3
Routine check	-	-	✓	-	-	-	-	-	-
Lipid profile	✓	✓	✓	✓	✓	✓	✓	✓	✓
Troponin T	-	-	-	-	-	-	-	-	-
ECG	-	-	✓	-	-	✓	-	✓	✓

Figure 12. Availability of tests and treatment for CVD risk

4.1.2.4 Hypertension: blood pressure control

For hypertension, we examined whether blood pressure meter and essential medicines exist at the RHs/PH. All hospitals had blood pressure meter, calcium channel blocker (Amlodipine, Nifedipine) and beta blocker (Atenolol); however, most hospitals did not have ACE inhibitor (Enalapril) and thiazide diuretics (Figure 13).

	Kang Meas RH	Steung Trang RH	Prey Chhor RH	Koh Soutin RH	Chamka rLeu RH	Batheay RH	Srey San-thor RH	Cheurng Prey RH	Kampong Cham PH
	CPA 1	CPA 1	CPA 1	CPA 1	CPA 2	CPA 2	CPA 2	CPA 2	CPA 3
Blood pressure measuring device	✓	✓	✓	✓	✓	✓	✓	✓	✓
Ultrasound	✓	-	✓ poor	✓ poor	✓	✓	✓	✓ poor	✓
ECG	-	-	✓	-	-	✓	✓	✓	✓
Ca-blocker	✓	✓	✓	✓	✓	✓	✓	✓	✓
ACE/ARB	-	-	-	-	✓	-	-	-	✓
B-blocker	✓	✓	✓	✓	✓	✓	✓	✓	✓
Thiazide	-	-	✓	-	-	✓	-	-	-

Figure 13. Availability of medical device and treatment for hypertension

Alongside the findings discussed in this section, additional results from the baseline survey on the availability of medicines, as well as tests and equipment for DM/HT in Kampong Cham Province, are included in **Appendix 6** and **Appendix 7**, respectively.

4.1.3 Recommendations to the NCD Control Project

4.1.3.1 Ensure appropriate blood glucose control and referral

The most important aspect of DM management is adequate blood glucose control. HbA1c test reflects average blood glucose levels over the previous two to three months and is known to have substantial predictive value for diabetes complications. At the PH and RHs in Kampong Cham, HbA1c was not tested routinely due to unstable reagent supply and reluctance of both patients and doctors to test. Within the scope of the Project, to ensure appropriate blood glucose control at the PH and RHs, the Project could:

- Discuss ways to procure HbA1c test reagents. According to a supplier (Medicom Co., Ltd.), the price of the HbA1c reagent is 95 USD per 30 tests (3.2 USD per test). There is a need to estimate the quantity and cost required and discuss how to procure them.
- Revise the DM handbook to more easily monitor HbA1c and assessment of complications (Figure 14).
- Develop educational materials that show the importance of HbA1c. Examples from other countries are shown in Figure 15.
- Draft a care flow chart at RHs, including referral to PH when glucose control is suboptimal.

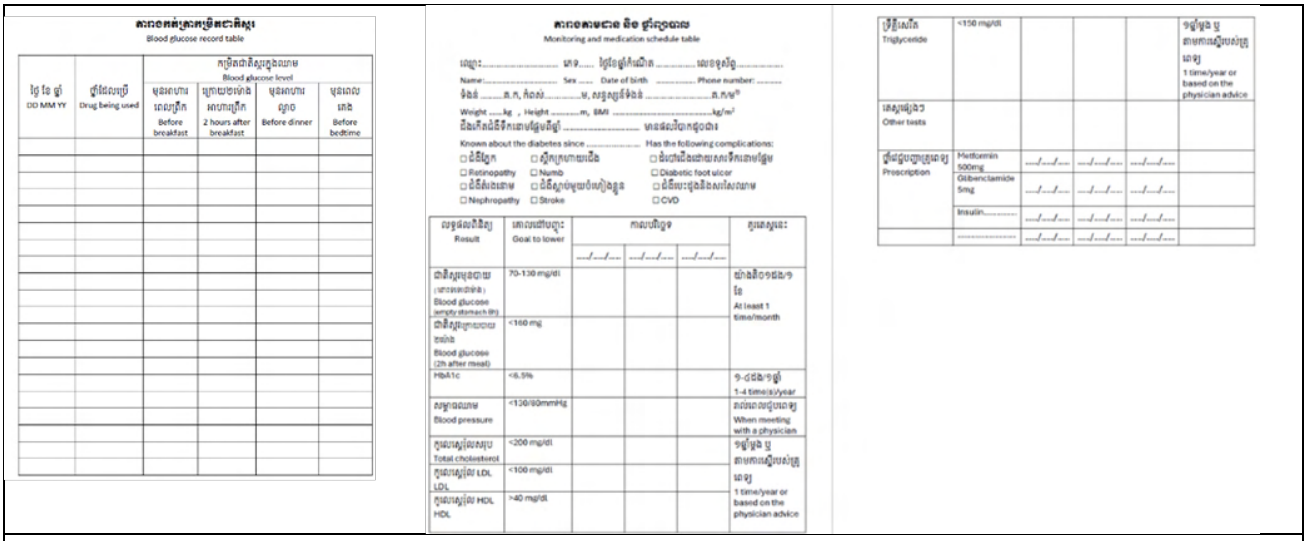


Figure 14. Existing DM handbook “Self-care practices in daily life for people with DM”

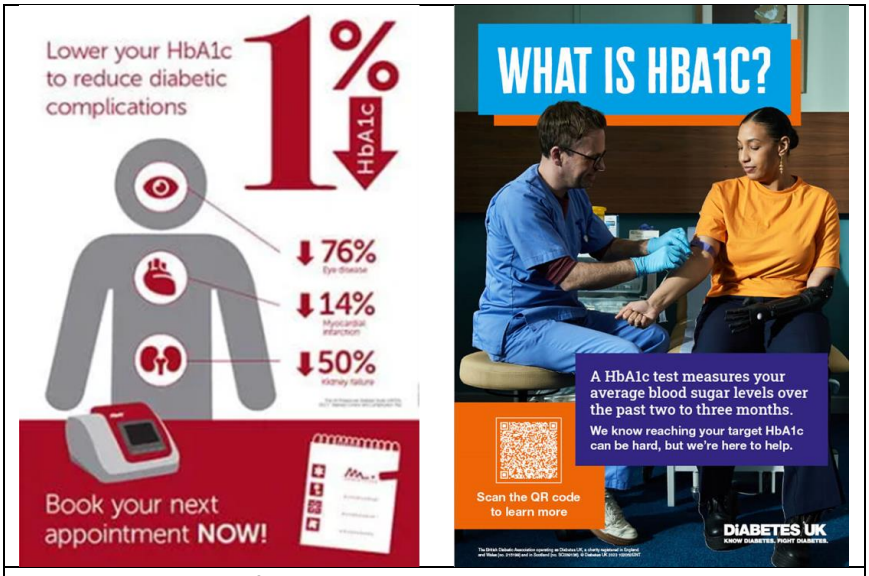


Figure 15. Example of posters about HbA1c

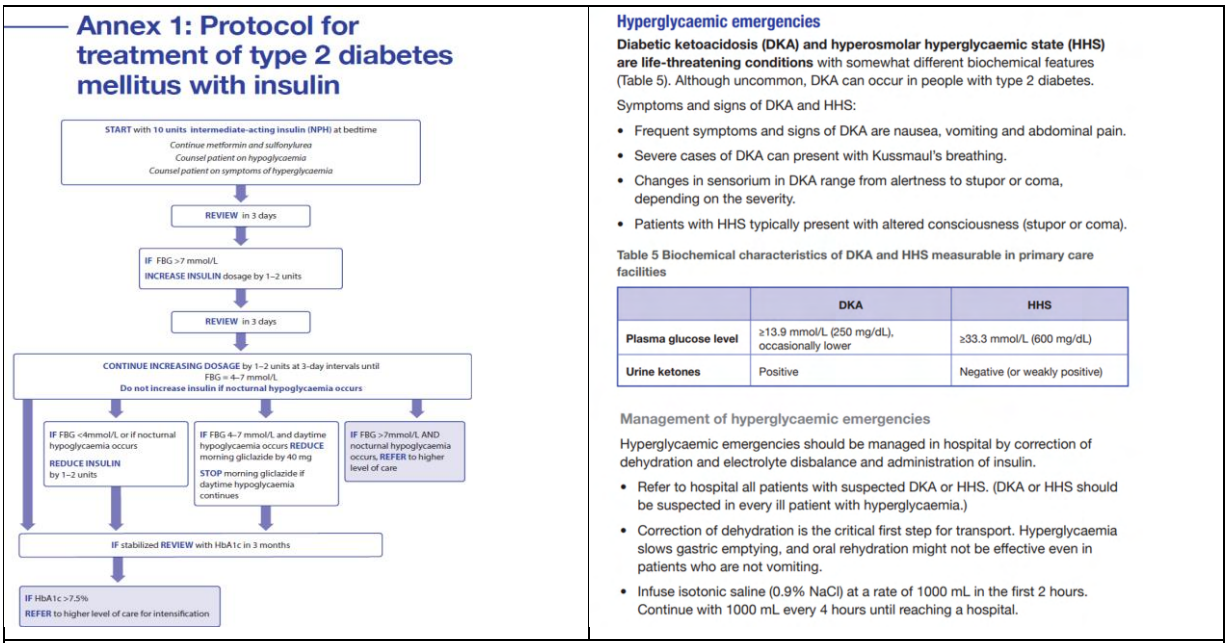
4.1.3.2 Strengthen DM treatment capacity at RHs and PH

Although the role of RHs and PH is to address complex cases from HCs, our baseline survey showed that only two oral medicines can be prescribed at RHs, and patients needing insulin are not appropriately referred to PH. Even if patients are referred to the PH, insulin is sometimes out of stock and physicians are not able to prescribe it. To strengthen the technical capacity of DM treatment at the PH and RHs, the Project could:

- Support the estimation of medicine quantities and costs for budgeting (See also Section 4.3.3)
- Review and revise CPG for Type 2 DM management. Topics that could be revised or added are treatment algorithm, insulin treatment protocol, and management of acute complications (diabetic ketoacidosis and hyperosmolar hyperglycaemic syndrome).
    - Medications included in the treatment algorithm should be consistent with those listed in the EML
    - The examples of insulin treatment protocol and description of acute complications can be

found in the WHO HEARTS-D[8] (Figure 16). Setting health facility criteria for insulin introduction may also be beneficial.

- Review and revise the training materials for PH and RHs doctors focusing on their advanced roles. Some topics that can be added include adjusting insulin doses, managing sick days, using rapid insulin, symptoms of hypoglycemia, and diet therapy.
- Conduct refresher training to PH and RHs doctors based on the revised training materials



Hyperglycaemic emergencies

Diabetic ketoacidosis (DKA) and hyperosmolar hyperglycaemic state (HHS) are life-threatening conditions with somewhat different biochemical features (Table 5). Although uncommon, DKA can occur in people with type 2 diabetes.

Symptoms and signs of DKA and HHS:

- Frequent symptoms and signs of DKA are nausea, vomiting and abdominal pain.
- Severe cases of DKA can present with Kussmaul's breathing.
- Changes in sensorium in DKA range from alertness to stupor or coma, depending on the severity.
- Patients with HHS typically present with altered consciousness (stupor or coma).

Table 5 Biochemical characteristics of DKA and HHS measurable in primary care facilities

	DKA	HHS
Plasma glucose level	≥13.9 mmol/L (250 mg/dL), occasionally lower	≥33.3 mmol/L (600 mg/dL)
Urine ketones	Positive	Negative (or weakly positive)

Management of hyperglycaemic emergencies

Hyperglycaemic emergencies should be managed in hospital by correction of dehydration and electrolyte disbalance and administration of insulin.

- Refer to hospital all patients with suspected DKA or HHS. (DKA or HHS should be suspected in every ill patient with hyperglycaemia.)
- Correction of dehydration is the critical first step for transport. Hyperglycaemia slows gastric emptying, and oral rehydration might not be effective even in patients who are not vomiting.
- Infuse isotonic saline (0.9% NaCl) at a rate of 1000 mL in the first 2 hours. Continue with 1000 mL every 4 hours until reaching a hospital.

Figure 16. Examples of insulin treatment protocol and description of acute complications

4.1.3.3 Improve DM foot assessment and care at RHs

In Kampong Cham, none of the four major DM complications (neuropathy/foot disease, retinopathy, nephropathy and CVD risk) were routinely assessed or treated at RHs. All of these areas could be strengthened, but improving the assessment and care of neuropathy/foot disease seemed most needed. The Project could:

- Develop of a flow chart for DM foot assessment and care based on the existing guidelines[9]
- Conduct practical training on DM foot assessment and care (including overseas training in Japan)

4.1.3.4 Set measurable indicators to monitor progress

The Project's design matrix (PDM) sets two indicators for monitoring progress of the Project activities. However, both indicators need to be more detailly defined. Table 1 shows the indicators as written in the PDM and those proposed by the survey team.

[8] WHO. Diagnosis and management of type 2 diabetes (HEARTS-D).

[9] MoH. Guidelines on Prevention and Management of Diabetic Foot Disease 2022

Table 1. Indicators to monitor progress of the Project activities

As written in PDM	Percentages of RHs/PH that actually provide the diagnosis and/or treatment prioritised by the Project are at least ●●% of the total number of target hospitals.	The figures of the indicators agreed to monitor the volumes of the diagnosis and/or treatment is improved.
Proposed	• Percentage of RHs/PH that provide HbA1c test (availability of reagents and trained providers) • Percentage of RHs/PH that provide DM foot assessment (availability of space, instruments and trained doctors)	• Percentage of patients who received HbA1c test among first-visit DM patients in a month • Percentage of patients who received foot assessment among first-visit DM patients in a month • Percentage of patients who held DM handbook among follow-up DM patients in a month • Percentage of patients whose fasting blood glucose is <130 mg/dl among DM patients in a month

While waiting for the development of NCD EMR (see Section 4.3.3), to measure these indicators, it is necessary to:

- Add a few columns on HbA1c, foot assessment, and DM handbook to the existing paper-based DM/HT registry (Figure 17) or the new one currently being updated by the MoH (Figure 18)
- Conduct training to data officers

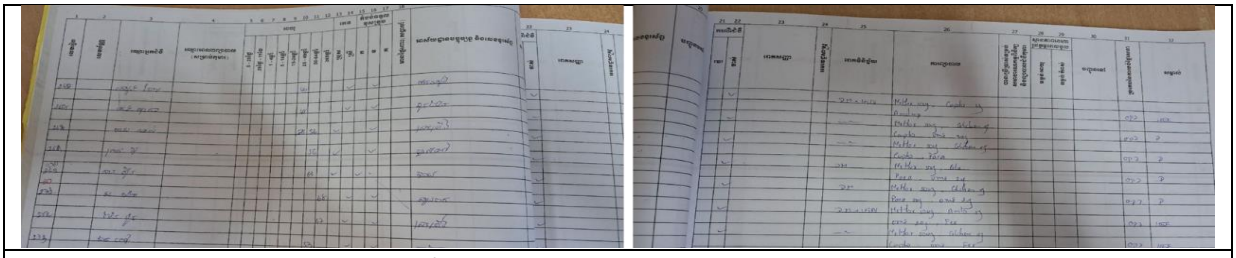


Figure 17. Existing paper-based DM/HT registry
Data that can be captured are type of visit (new or follow-up), diagnosis, treatment, and referral. Follow-up patients are counted at each visit.

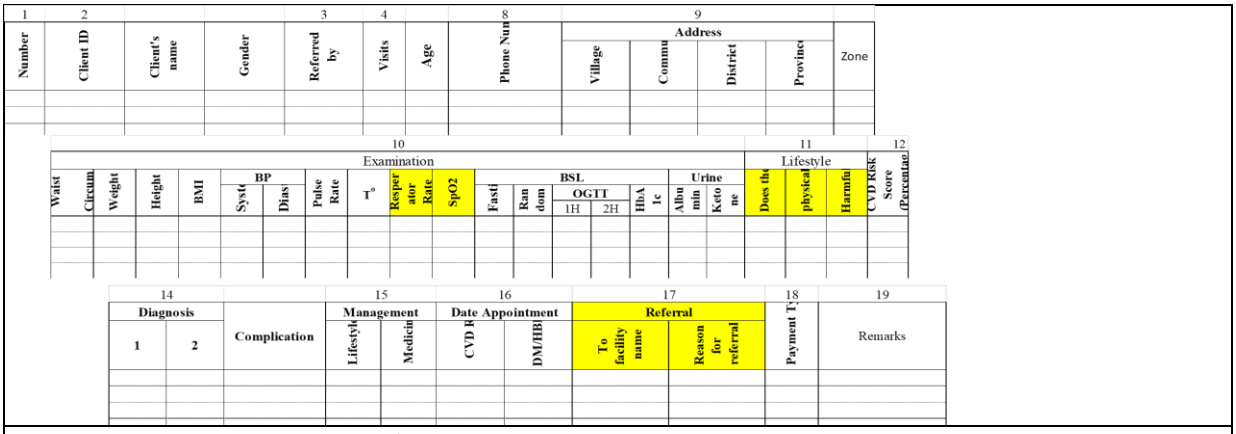


Figure 18. New paper-based DM/HT registry suggested by the MoH

4.2 Cervical Cancer Screening and Treatment (CCS&T) Services

4.2.1 Expected Flow of Service Delivery and Roles of RH and PH

As of June 2024, the National Standard Operating Procedures for Implementing Cervical Cancer Screening 2018 (SOP CC 2018) serves as the guiding document for cervical cancer screening and treatment services[10]. According to this SOP CC 2018, the roles of Village Health Support Group (VHSG), health centers (HCs), referral hospitals (RHs), and provincial hospitals (PHs) are as follows (Figure 1):

- VHSG: Provide health education on cervical cancer and encourage eligible women (i.e. aged 30-49 years) to receive VIA screening at a HC
- HC: Provide counselling on cervical cancer prevention, perform VIA, and when VIA is positive, refer women to a district RH
- RHs: Rescreen with VIA, determine eligibility for cryotherapy[11], and perform cryotherapy upon informed consent. From 2019, thermal ablation was added as a treatment method compatible with cryotherapy[12]. Women ineligible for cryotherapy are expected to be referred to a PH.
- PHs: Provide further evaluation, determine eligibility for loop electrosurgical excision procedure (LEEP) and conization[13], and perform the treatment upon informed consent. Women suspected of invasive cervical cancer are expected to be referred to a national hospital for cancer diagnosis and management.

Under the H-EQIP 2 Project (2022-2027), MoH has so far provided VIA training to midwives and thermal ablation training to doctors at 22 PHs, 85 RHs, and 678 HCs across the country.

[10] MoH. National Standard Operating Procedures for Implementing Cervical Cancer Screening 2018

[11] Eligibility for cryotherapy and thermal ablation: acetowhite lesion that covers <75% of the surface of the cervix and does not extend onto the vaginal wall (SOP page 33)

[12] MoH. Technical Notice on Thermal Ablation as a Method for the Treatment of Cervical Precancerous Lesions, December 2019

[13] There is no clear guidance on LEEP or conization

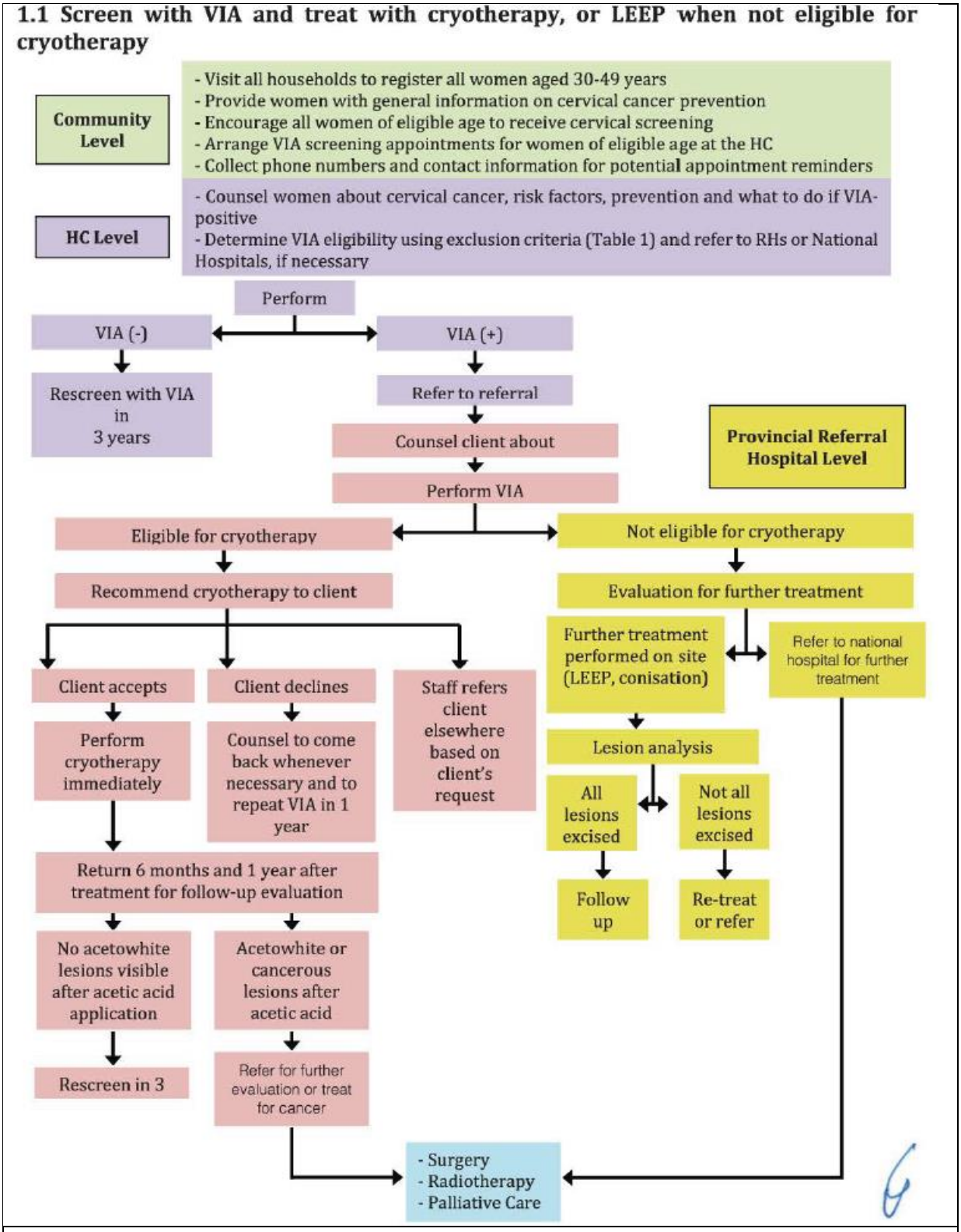


Figure 1. Cervical cancer screening and treatment flow in the SOP 2018

4.2.2 Findings from the Survey

In the survey, we examined the availability of SOP CC 2018, medical devices for VIA, thermal ablation, colposcopy and LEEP, and trained health providers as well as the utilization of services. The results are shown in Figure 2. Among the nine hospitals, SOP was used in five RHs. In all hospitals, VIA instruments (e.g. speculum, forceps) and thermal ablation devices were available; however, colposcope and LEEP device were not in any including the PH. There were a few midwives and doctors trained for VIA and thermal ablation under the MoH program, except for Batheay RH where the two trained doctors are no longer present (transferred to a different department or hospital). The biggest issue was the low utilization of services; VIA was only offered to a few women and thermal ablation to almost none in a month.

	Kang Meas RH	Steung Trang RH	Prey Chhor RH	Koh Soutin RH	Chamkar Leu RH	Batheay RH	Srey San-thor RH	Cheung Prey RH	Kampong Cham PH
	CPA 1	CPA 1	CPA 1	CPA 1	CPA 2	CPA 2	CPA 2	CPA 2	CPA 3
SOP 2018	✓	×	×	✓	✓	×	✓	✓	×
Materials for VIA	✓	✓	✓	✓	✓	✓	✓	✓	✓
Thermal ablation	✓ (Liger)	✓ (Liger)	✓ (Wisap)	✓ (Liger)	✓ (Wisap)	✓ (Wisap)	✓ (Liger)	✓ (Wisap)	✓ (Liger)
Colposcopy	×	×	×	×	×	×	×	×	× (broken)
LEEP	×	×	×	×	×	×	×	×	×
VIA-trained MW	2	2	5	2	5	1	2	4	4
TA-trained Dr	2	2	3	2	1	0	2	3	4
VIA price	10,000 R	0 R	20,000 R	0 R	20,000 R	15,000 R	40,000 R	-	0 R
TA price	10,000 R	0 R	20,000 R	0 R	20,000 R	NA	80,000 R	-	0 R
VIA/month	< 1 (+2 f/u)	NA	2 (+2 f/u)	0	2 (+1 f/u)	3 (+2 f/u)	10	0	10 (+3 f/u)
Thermal ablation /month	0	0	1	0	0	0	0	0	1
Referral/month	0	NA	0-2	0	0	0	0	0	NA

f/u: follow up patient, NA: not available, R: Khmer riel
*Liger and Wisap are the names of thermal ablation devices

Figure 2. Cervical cancer screening and treatment service availability and use

Photo: Thermal ablation devices available at the RHs (Left: Ligar HTU-110, Right: Wisap C3 THERMO-COAGULATOR)

During the on-site visits, midwives and doctors cited women's ignorance and embarrassment and the fact that VIA is now offered at HCs as reasons for women not visiting RHs for cervical cancer screening. Some also felt uncomfortable providing the service as they have little experience and confidence in the procedures.

The results of the interview regarding the expectations for the NCD Control Project are shown in Figure 3. Many of the hospitals expressed the need for refresher training for midwives and doctors.

	Kang Meas RH	Steung Trang RH	Prey Chhor RH	Koh Soutin RH	Chamkar Leu RH	Batheay RH	Srey San-thor RH	Cheurng Prey RH	Kampong Cham PH
	CPA 1	CPA 1	CPA 1	CPA 1	CPA 2	CPA 2	CPA 2	CPA 2	CPA 3
Expectation to the NCD Control Project	-To have refresher training on CCST (midwives: VIA, doctors: TA)	- To provide training on Pap smear to attack more patients to come to have screening - To have ultrasound machines that are good quality and last longer	- To providing proper training for midwives - To procure additional medical equipment such as colposcopy devices	- To provide refresher training (TA for the doctors and screening, counseling for midwives)	- To have CCS to function in the hospital. -To include CCST in the health education at HCs.	-To have more training on CCST -To have refresher training -To have more staff assist in CCST	-To train other midwives - To provide refresher training for doctors on Pap smear, HPV test and TA. - To have a new set of medical equipment for CCST.	NA	-To provide training for staff such as: colpo-scopy, Pap smear, HPV test. - To increase advocacy on benefit of CCST

CCST: cervical cancer screening and treatment, NA: not available, TA: thermal ablation, VIA: visual inspection with acetic acid,

Figure 3. Expectations to the NCD Control Project

4.2.3 Recommendation to the NCD Control Project

4.2.3.1 Consider introduction of HPV test for cervical cancer screening

While VIA is a simple and inexpensive method, interpretation of the result is subjective. It is known that there is a high variability in the test accuracy between health providers (sensitivity 22-91%, specificity 47-99% for detection of CIN 2+)[14]. Due to the inherent challenges with quality assurance, rapid transition to HPV test is being recommended in the most recent WHO guidelines[15]. MoH has also outlined a plan to gradually introduce HPV test as a primary method in the National Action Plan for Cervical Cancer Prevention and Control 2019-2023[16] and developed an updated National Standard Operating Procedures for Implementing Cervical Cancer Screening and Management 2024, which includes HPV test-based screening algorithm[17].

[14] WHO. Accuracy of tests used for cervical cancer screening. 2021. https://iris.who.int/bitstream/handle/10665/342366/9789240030886-eng.pdf

[15] WHO. Guideline for screening and treatment of cervical pre-cancer lesions for cervical cancer prevention, second edition. 2021

[16] MoH. National Action Plan for Cervical Cancer Prevention and Control 2019-2023.

[17] MoH. National Standard Operating Procedure for Cervical Cancer Screening and Management in Cambodia

In the NCD Control Project, provision of VIA training will not be an option, because of the obvious difficulty in ensuring quality. If any activities were to be conducted on screening, introduction of HPV test will be the only recommended option.

If HPV test is to be introduced, the Project activities will include:

- Selection of 2-4 target ODs for implementation
- Training of health care providers in cervical cancer and HPV test (what it is, how to provide counselling, how to teach self-sampling, etc.)
- Careful discussion on the service delivery system. While the future vision will be to collect samples from women in the community and HCs, the short-term goal will be to set up a feasible system at the RH and PH levels, in which samples are collected at RHs, tested at PH, and results are returned to women from the RHs (Figure 4). The potential benefits and challenges are described in Table 1.
- Determination on whether to deliver as a routine service or as a campaign. To collect enough numbers of specimens to run the HPV test assay, the latter may be more feasible. Establishing a specific target age for HPV test (e.g., age 30, 35, 40, 45 and 50) should also be considered to avoid testing a woman multiple time.
- Procurement of HPV test assay, reagents and consumables
- Training of laboratory techniques for HPV assay at PH
- Development of operation manual for HPV test-based screening
- Conduct HPV test-based screening (either as a routine service or as a campaign). Although the Project's focus is on capacity building of providers at PH and RHs, some degree of advocacy and health education to general women may be needed.

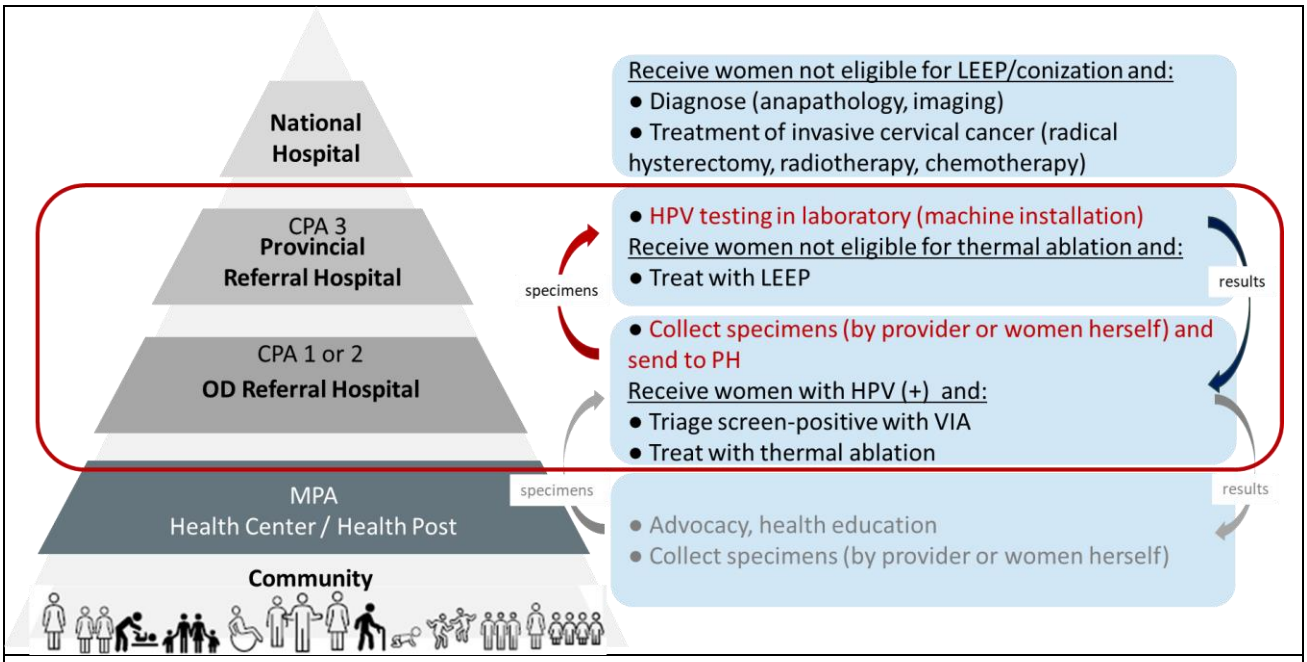


Figure 4. Example of service delivery of HPV test based cervical cancer screening and treatment

Table 1. Potential benefits and challenges to introducing HPV test-based screening

Benefits	Challenges
• Accuracy is higher than VIA • Screening interval can be extended to 5-10 years • Women can collect samples by herself • Easier to calculate cervical cancer screening rate and test positivity rate	• Need to deliver specimens from RHs to PH (where HPV test assay platform will be set up) • Need to deliver test results from PH to RHs • Need to find a sustainable financing mechanism (maintenance of machine and procurement of reagents/consumables)

4.2.3.2 Strengthen the capacity of precancer treatment

Our survey found that thermal ablation devices were available at all RHs but were never or rarely used. Establishing a practical training program on thermal ablation for RH doctors will be recommended. At PH, LEEP may be introduced so that at least the treatment of precancerous lesions is completed in the province.

If the above are agreed, the Project activities will include:

- Review of protocols and development of videos on thermal ablation, colposcopy and LEEP
- Training of doctors at RHs and PH

4.2.3.3 Set measurable indicators to monitor progress

The Project design matrix (PDM) sets two indicators for monitoring progress of the Project activities. However, both indicators need to be more detailly defined by the Project after it has been determined which cervical cancer diagnosis and treatment are prioritised. Table 2 shows the indicators as written in the PDM and those proposed.

Table 2. Potential indicators to monitor progress of the Project activities

As written in PDM	Percentages of RHs/PH that actually provide the diagnosis and/or treatment prioritized by the Project are at least ●●% of the total number of target hospitals.	The figures of the indicators agreed to monitor the volumes of the diagnosis and/or treatment is improved.
Proposed	• Percentage of RHs/PH that provide HPV test (availability of brush, tubes, trained providers, and delivery system of samples and results) • Percentage of RHs/PH that provide thermal ablation (availability of thermal ablation device and certified doctors) • Percentage of OD/RH that conducted HPV test-based screening campaign once a year	• Number (percentage) of women aged 30, 35, 40, 45 and 50 who received HPV test among those living in the target ODs • Number (percentage) of women who received thermal ablation among those who were screen-positive

4.3 NCD Program Management

4.3.1 Expected Role of the PHD and OD Offices

As of July 2024, the National Standard Operating Procedure for Diabetes and Hypertension Management in Primary Care 2019 (SOP DM/HT 2019) serves as the guiding document that defines the roles of PHD and OD offices in the NCD program management. The role and tasks of PHDs are presented in Table 1 and those of ODs are presented in Table 2.

Table 1. Role and tasks of PHDs described in the SOP DM/HT 2019

Role	To serve as the PEN program coordinator and support the MoH to oversee the PEN program implementation in collaboration with ODs
Tasks	1. Submit a **request for essential medicines and supplies** to the MoH 2. Integrate the PEN program into the **annual operating plan** to ensure cash flow and adequate supply of medical consumables to health centers 3. Conduct **quarterly supervision to each OD** to ensure smooth coordination and implementation of the PEN program as well as monitoring of its effectiveness in terms of health outcomes. 4. **Plan and organize the training** on PEN, focusing on CVD prevention through integrated management of DM and HT, including health education and counseling for healthy behavior. 5. **Report** quarterly, twice yearly, and annually on the PEN program, **against annual operating plan**, to the Department of Preventive Medicine (MoH) 6. Coordinate with NGOs and relevant stakeholders working on NCD prevention and control at the provincial level to avoid overlapping catchment areas. 7. Disseminate updated NCD policies and guidelines to all stakeholders at the provincial level.

Table 2. Role and tasks of ODs described in the SOP DM/HT 2019

Role	To support health centers, implement the PEN program in collaboration with stakeholders
Tasks	1. **Request** the Central Medical Store (MoH) through PHD to ensure NCD **essential medicines and supplies** are readily available **for health centers and referral hospitals (RHs)** 2. **Supervise** PEN implementation **at HCs** on a monthly basis including their supportive supervision of peer educators where they are present 3. **Submit** quarterly, twice yearly, and annual **progress reports** on the PEN program to the PHD 4. **Organize a monthly meeting** on the PEN program with the relevant health centers to address bottlenecks and problem solving 5. **Facilitate a referral system** of patients between the health center and RH 6. Facilitate and participate in health center capacity assessments conducted by the Department of Preventive Medicine, MoH. 7. Collaborate with relevant stakeholders and local authorities in support of PEN program.

4.3.2 Finding from the survey

Governance Structure

- PHD: NCD Technical Group has been established, including five members from the NCD bureau and the finance bureau (n.b. three are medical doctors).
- ODs: There are two to three NCD specialists, divided into those responsible for DM/HT and those responsible for cervical cancer. These members are also part of the NCD bureau that decides the OD's budget.

NCD Annual Operating Plans (AOP)

- At PHD and ODs, budgeting is compiled based on the AOP submitted by technical bureaus every December. However, there has been no NCD AOP developed so far (although there has been an intention to formulate a plan).
- PHD and ODs noted that the H-EQIP2 fund (approximately 30,000 USD every quarter) is directly provided to PH and RHs. They expect that hospitals will cover the necessary costs of NCD medicines and medical equipment using this H-EQIP2 fund.

Supply of medicines and test reagents

- ODs consolidate the orders of medicines and test reagents from all HCs and RHs in the coverage area and submit them to PHD every three months. ODs stated that there is a sufficient stock of NCD medicines and supplies except for insulin and HbA1C reagents, which they have never ordered before. As mentioned above, PHD and ODs expect hospitals to order HbA1c test reagents and insulin on their own.

Supervision to ODs, RHs and HCs

- Supervision from PHD to the ODs is conducted, but it is done irregularly in response to events and issues raised.
- ODs and RHs hold monthly management meetings to review patient numbers and discuss hospital-wide issues, but these meetings do not function as formal supervision.
- Some ODs have already received training on supervision related to NCD services and regularly perform supervision to HCs based on the SOP DM/HT 2019. However, others reported a lack of human and financial resources to conduct such supervision.

Monitoring and reporting of the NCD program

- DM, HT and CC data collected in the routine Health Management Information System (HMIS) are only the cumulative numbers of patients seen every month. Some items are ill-defined and difficult to capture, such as Type 1 DM and Type 2 DM, Primary HT and Secondary HT.
- Data are also collected in paper-based registries at RHs. However, follow-up patients are counted every time they visit the hospital causing issues with double counting (frequent visits by the same patients is common since prescriptions can only be issued for 7-14 days).

4.3.3 Recommendation to the NCD Control Project

Strengths and challenges in NCD program management can be drawn as follows:

＜Strengths＞

- There are technical bureaus and technical group responsible for NCD services in both PHD and ODs.
- There are a certain number of staff experienced in providing NCD services at the RHs and PH.
- H-EQIP2 funds are regularly provided to each hospital.

＜**Challenges**＞

- There are only few staff in the NCD bureaus or technical group that can provide technical input.
- There are no NCD-related AOPs at PHD and ODs.
- Supervision to RHs is not done regularly.

Based on the above strengths and challenges, there are four recommendations:

1) Activate PHD's NCD Technical Group

To improve NCD program management, there is a need to conduct more technical discussions such as on NCD AOPs, supervision, and data management. Therefore, it is recommended to activate PHD's existing NCD Technical Group and to establish a system that supports the NCD improvement activities at the PHD, ODs, PH and RHs (Figure 1).

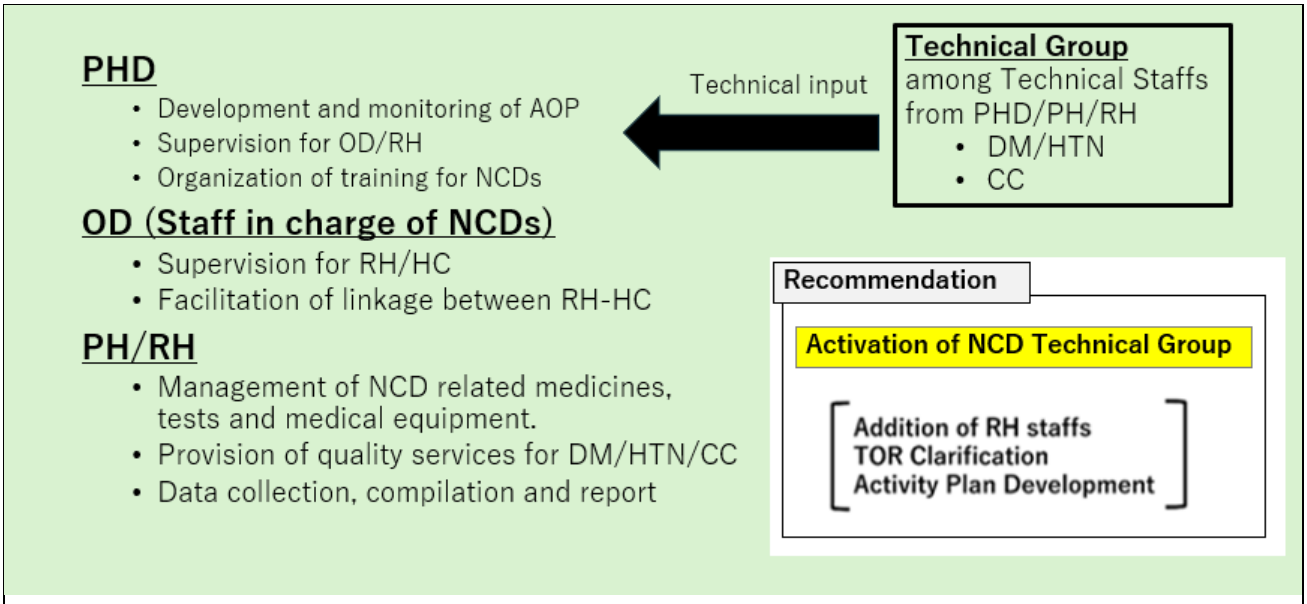


Figure 1. Existing structure (green area) and recommendation

2) Develop NCD Action Plans

Creating an NCD action plans[18] is critical for the implementation of any health programs. Since the plans are submitted every December, it will be necessary to develop an NCD action plan by then. The plan may include training and supervision schedules at the PHD and ODs and budget for HbA1C reagents and insulin at the PH and RHs.

In particular, since the hospitals have revenue from various sources, such as user fees, regular budgets, and H-EQIP2, the effective and efficient use of these funds is the key to ensure the sustainability of project activities.

To include new medicines and reagents in the plan, estimating their costs is important. Figure 2 summarizes the estimated number and cost of DM drugs (Metformin and Glibenclamide) and HbA1c reagents required per month, calculated based on the number of patients in the past six months at four RHs. The calculation assumes that i) RHs can prescribe metformin and glibenclamide and would refer patients to PH if insulin therapy is needed, ii) 10% of patients treated at RH are new patients and

[18] Note: The term "NCD action plan" is used in alignment with the terminology outlined in the Project Design Matrix and is synonymous with the Annual Operating Plan (AOP) used in other contexts.

90% are follow-up patients, and iii) HbA1C is tested for all new patients and at 6-month intervals for follow-up patients. The proportions of patients on each medication (i.e. metformin only, glibenclamide or both) were cited from the drug forecasting tool developed by Clinton Health Access Initiatives (CHAI). The result shows that, depending on the number of patients, the average cost per month is 13~308 USD, which seems manageable by the RHs considering the funds they receive from H-EQIP2. Given that there are already some stocks of medicine provided by the MoH, the necessary cost may be even lower.

	Koh Soutin (CPA1)	**Batheay (CPA2)**	**Cheung Prey (CPA2)**	**Chamkar Leu(CPA2)**
No. of DM patients in the **last 6 months by Baseline Survey**	42	1000	40	587
Estimated cost of drugs and HbA1C reagents per month				
DM Drug Cost per month (USD)	7.7	182.8	7.3	107.3
Cost of HbA1C per month (USD)	5.25	125	5	73.375
Average Cost per month (USD)	12.9281082	307.8	12.3	180.7
Estimated number of drug and reagent per month				
Metforimin	183.54	4370	174.8	2565.19
Glibenlcamid	63	1500	60	880.5
HbA1C	1.75	41.7	1.7	24.5

Figure 2. Estimated cost and number of HbA1C reagents required per month

3） Strengthen supportive supervision to RHs by PHD and ODs

In the SOP DM/HT 2019, supervision to RHs by PHD and ODs is not clearly described. However, in the new SOP DM/HT 2024, the timing and purpose of supervision for RHs is stated as follows:

- **PHD:** Supervision should be conducted to all RHs within three months after training, and selected RHs every three months to discuss implementation progress and issues faced
- **OD:** Supervision should be carried out to all RHs on a monthly basis to observe operation and discuss coverage of services

Monitoring checklist for RHs is also provided in the SOP DM/HT 2024.

This SOP DM/HT 2024 has not yet been published, but once it is, supervision should be carried out in accordance with this SOP. At the same time, it will be important to evaluate the feasibility and effectiveness of supervision, including the workload, methods, and the monitoring tools. If necessary, revisions should be considered. Additionally, it will be worth learning from the supportive supervision framework called the Midwifery Coordination Alliance Team (MCAT) introduced by a previous JICA project in Cambodia.

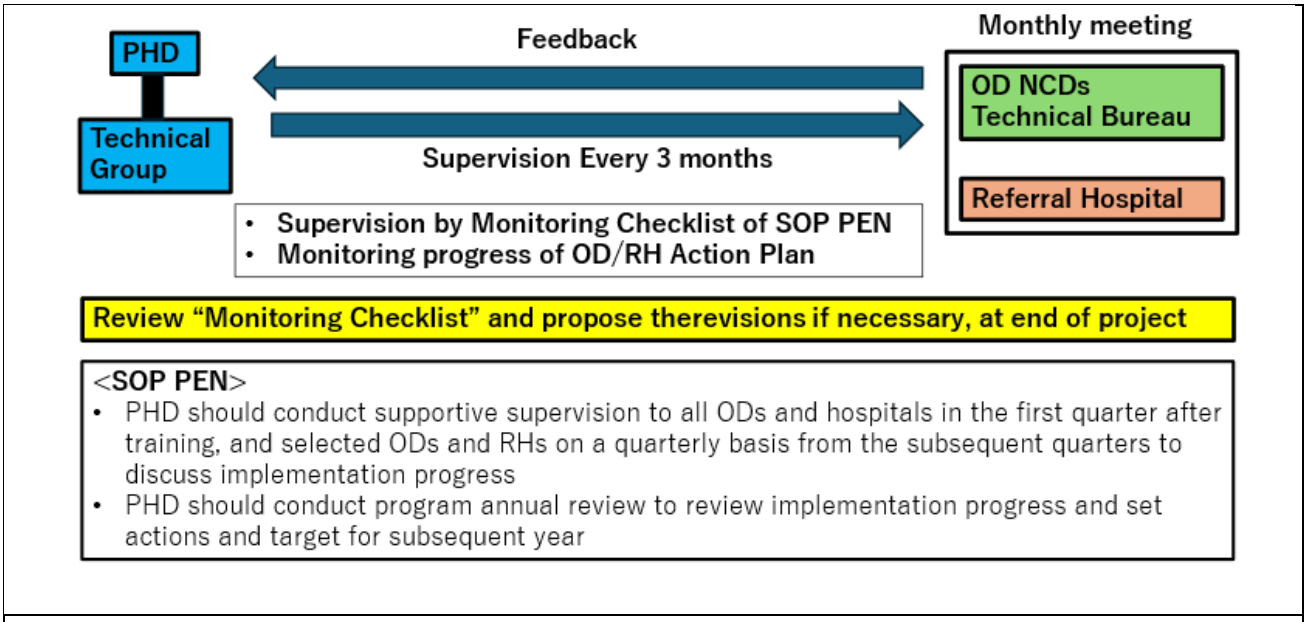


Figure 3. Proposed structure for supervision to RHs

4) Review data that can be collected and set measurable indicators to monitor the NCD program

National Strategy for NCDs 2022-2030 has set the following indicators on DM/HT services to be collected at RHs/PH:

- Indicator 17. Percentage of people aged 25-64 years with HT **receiving treatment** in health facilities
- Indicator 18. Percentage of HT patients with **blood pressure controlled** after 12 month-treatment
- Indicator 19. Percentage of people aged 25-64 years with DM **receiving treatment** in health facilities
- Indicator 20. Percentage of DM patients with fasting or random **blood glucose controlled** after 12-month treatment

Considering that the roles of PH and RHs include management of complex cases and complications, percentages of referral and complication screening may also be included. Additionally, the SOP DM/HT 2019 and 2024 expects the percentages of screening, diagnosis, follow-up, drop-out and medicine availability at HCs to be reported. If all these performance indicators are to be monitored at the PH and RHs, data in Table 3 need to be collected on a monthly basis.

Table 3. Necessary data to be collected for monitoring performance indicators

(1)	No. of new cases with HT	
(2)	No. of new cases with DM	
(3)	No. of follow-up patient with HT	
(4)	No. of follow-up patient with DM	
(5)	No. of uncontrolled HT	SBP>140, DBP>90
(6)	No. of uncontrolled DM	HbA1C>7.0%
(7)	No. of testing for DM	HbA1C
(8)	No. of treatment for HT	
(9)	No. of treatment for DM	
(10)	No. of referral of patients with HT	
(11)	No. of referral of patients with DM	
(12)	No. of patients with HT who have not come in 90 days	
(13)	No. of patients with DM who have not come in 90 days	
(14)	No. of complication screening	Foot (neuropathy), Eye (retinopathy), Renal (nephropathy), CVD risk
(15)	Availability of essential DM/HT medicines	

In the current situation, these data are difficult to collect. The existing paper-based DM/HT registry allows the collection of red-colored data, but not always recorded. Blue-colored data need to be extracted from individual medical records, which is difficult in routine practice. MoH is currently developing a NCD Electronic Medical Record (EMR) system, but until this is functionalized, the only option is to improve the paper-based registry itself and the quality of data collection.

MoH stated that they are currently updating the paper-based DM/HT registry and it appears that this new registry is designed to collect most of the data in Table 3. If so, the Project could support its implementation, ensuring that important data are well-collected by the data officers (e.g., the number of visits per month to prevent double counting of individual patients) and indicators are calculated for monitoring. Evaluating the necessity of each item in the new registry and proposing further revisions will also be beneficial.

Table 4 presents candidate indicators and their formulas using the data in Table 3. The actual indicators for the Project should be decided after the prioritized services are agreed.

Table 4. Indicators for measuring hospital performance on a monthly basis

Indicators	Details	Formula
General OPD		
% of Screening for HT	No. of patients who had BP tested / No of patients aged >=40 years	
% of Screening for DM	No. of patients who had BS tested / No of patients aged >=40 years	
DM/HT OPD		
No. of new cases with HT	(※) Need to avoid double-counting of patients who come more than twice a month.	(1)
No. of new cases with DM		(2)
No. of follow-up patients with HT		(3)
No. of follow-up patients with DM		(4)
% of testing for DM among new cases	No. of patients with HbA1C / No. of new cases with DM	(7)/(2)
% of testing for DM among follow-up patients	No. of patients with HbA1C / No. of follow-up patients with DM	(7)/(4)
% of treatment for HT	No. of patients with treatment for HT / No. of patients with HT	(8)/((1)+(3))
% of treatment for DM	No. of patients with treatment for DM / No of patients with DM	(9)/((2)+(4))
% of treatment for DM using insulin	No. of patients with treatment for DM using insulin / Eligible Population (*this should be defined*)	TBD
% controlled by treatment for HT	No. of patients with normal BP / No. of patients with HT	((1)+(3)-(5))/((1)+(3))
% controlled by treatment for DM	No. of patients with normal BS / No. of patients with DM	((2)+(4)-(6))/((2)+(4))
% of referral for HT (CPA1/2 to CAP3)	No. of referral of patients with HT / Eligible patients meeting the referral criteria (*criteria should be defined)*	TBD
% of referral for DM (CPA1/2 to CAP3)	No. of referral of patients with DM / Eligible patients meeting the referral criteria *(criteria should be defined)*	TBD
% of drop-out for HT	No. of patients with HT who have not come in 90 days / No. of patients with HT excluding those within 3 months of initial visit	TBD
% of drop-out for DM	No. of patients with DM who do not come in 90 days / No. of patients with DM excluding those within 3 months of initial visit	TBD
% of screening for DM foot	No. of Screening of DM Foot / No. of patients with DM	(15)/((2)+(4))
% of screening for DM retinopathy	No. of Screening for DM retinopathy (Fundoscopy) / No. of patients with DM	(15)/((2)+(4))
% of screening for DM nephropathy	No. of Screening for DM nephropathy (Renal Function Blood Test) / No. of patients with DM	(15)/((2)+(4))
% of screening for CVD risk	No. of Screening for CVD risk / No. of patients with DM	(15)/((2)+(4))
Pharmacy		
Essential Drug Stock-out (Yes/No)	Stock-out of key DM/HT medicine in the last quarter *(tracer medicine should be defined*)	TBD
Essential Test Stock-out (Yes/No)	Stock-out of key DM/HT test reagents in the last quarter *(tracer reagent should be defined*)	TBD

5. Conclusion and Way Forward

This baseline survey on NCD program management and hospital service delivery in Kampong Cham Province revealed significant areas requiring targeted interventions. The recommendations outlined in this report aim to assist the NCD Control Project in formulating and implementing strategies to enhance NCD program management and healthcare services in the province.

Key findings from the survey highlight critical gaps in the clinical management of diabetes, hypertension, and cervical cancer. These gaps include inconsistencies in clinical practices, inadequate availability of essential medications and testing reagents, and deficiencies in cervical cancer screening and treatment. Additionally, the survey identified the need for enhanced planning, budgeting, and supervision within the PHD and OD offices.

5.1 Workshop Insights and Actionable Proposals

To address these findings, a workshop was conducted on 24th July 2024, involving key stakeholders, including the MoH, PHD, OD directors, hospital directors, and department chiefs responsible for DM/HT and CCS&T from all the hospitals. The workshop provided a platform for presenting survey results, discussing challenges, and proposing actionable measures. At the beginning of the workshop, the MoH and the PHD emphasized their strong commitment to strengthening NCD program management.

The results and proposals for activities were presented, followed by group work discussions. Three groups were formed to facilitate interactive discussions in each area (DM/HT Services, CCS&T Services, and NCD Program Management) on alleviating the challenges identified in the survey. These discussions served as a foundation for prioritizing future activities.

A crucial outcome of the workshop was the agreement to activate and enhance the NCD Technical Group. This group will play a pivotal role in advancing the project by providing technical advice, supporting the prioritization of activities, planning and conducting training, and implementing supervisory visits for PH and RHs. This activation is a key point for effectively progressing NCD management initiatives.

For a detailed record of the workshop discussions and outcomes, please refer to **Appendix 8**.

5.2 Next Steps

Following the workshop, the next steps involve the formal activation of the NCD Technical Group, the development of action plans, and the commencement of structured training programs and supervisory visits. The JICA NCD Control Project will continue to work closely with PHD, OD offices, hospital directors and healthcare providers to implement these strategies and monitor progress through measurable indicators.

By addressing the identified gaps and leveraging existing strengths, the project aims to enhance healthcare services and manage NCDs more effectively, ultimately improving health outcomes for the population of Kampong Cham Province. This collaborative effort marks a significant step forward in strengthening NCD management and hospital service delivery in the region.

6. Appendices

Appendix 1: Instruction - Baseline Survey Data Entry and In-Depth Assessment/Interview

Instructions for Completing the Baseline Survey

This baseline survey is designed to assess hospital services related to Noncommunicable Diseases (NCDs) management in Kampong Cham Province. The information collected will help us understand the existing capabilities, identify gaps, and plan for improvements.

The survey is divided into six sections, each focusing on different aspects of hospital services and management. Please ensure that the person most knowledgeable in each area completes the corresponding section.

General Instructions:

1. Confidentiality: All responses will be treated with the utmost confidentiality and will only be used for the purposes of this project and any future projects related to improving NCD management and services.
2. Accuracy: Please provide accurate and honest responses to the best of your ability.
3. Completeness: Ensure that all questions are answered. If a question is not applicable, please mark it as "Not Available" or "N/A".
4. Supporting Documents: Where applicable, please provide supporting documents or additional comments to clarify your responses.
5. Submission: Please return the completed survey by 10th June 2024 to the contact at the end of this instruction.

➢ Section 1: General Information

- Purpose: To gather basic information about the hospital and its operational context
- Respondent: Hospital Director or equivalent authority

➢ Section 2: Diabetes/Hypertension (DM/HTN)

- Purpose: To assess the management and treatment services for diabetes and hypertension
- Respondent: Person in Charge of DM/HTN Medical Services

➢ Section 3: Cervical Cancer Screening & Treatment (CCS&T)

- Purpose: To evaluate the screening and treatment services for cervical cancer
- Respondent: Person in Charge of CCS&T Services

➢ Section 4: Pharmacy: Essential Drugs

- Purpose: To understand the general management of essential drugs and the availability of drugs related to Diabetes and hypertension
- Respondent: Chief Pharmacist or equivalent authority

➢ Section 5: Laboratory Services

- Purpose: To assess the availability and quality of laboratory services related to the mentioned NCDs
- Respondent: Head of Laboratory Services or equivalent authority

➢ Section 6: Medical Imagery Services

- Purpose: To evaluate the hospital's medical imagery services

- Respondent: Head of Medical Imagery Department or equivalent authority

Final Notes

- Contact Information: If you have any questions or need further assistance, please contact JICA NCD Control Project:
    - (English) Ms. OTAKI Junko, Technical Expert. Mobile: 011 333 060
    - (Khmer & English) Ms. ROS Sopheasavetey: Technical Assistant. Mobile: 011 333 496
- Review: Before submission, please review your responses for completeness and accuracy.

Thank you for your cooperation and contribution to this important survey. Your input is invaluable in helping us shape the area of collaboration to improve NCD program management and services in Kampong Cham Province.

Appendix 2: Hospital Baseline Survey Questionnaire

Baseline Survey (Hospitals)

1. General Information

Category	Details	Response/ Information
Facility Information	Facility Name	_____Hospital
	Hospital reports to	_____ Health Department /Office
	Hospital Type	☐CPA1 ☐ CPA2 ☐ CPA3
	Years of Operation	_____ Years
	OPD operation hours	From _____:_____ to _____:_____
	Average OPD Patients/Day	_____ (New + Follow-up)
	Number of IPD beds	_____ beds
Catchment Area Coverage	Estimated population size served by the hospital	_____ (e.g., 150,000)
	Geographic area covered by the hospital (in km²)	Village: _____ District: _____ Km² Coverage: _____
	How long does it typically take to reach the hospital by vehicle or boat from the furthest point in the catchment area?	_____ hours
	Are there any commonly used transportation methods to reach the hospital other than vehicles, motorcycles, or boats (e.g., walking, cycling)? Please specify	☐Yes (Specify: _____) ☐ No
	What are the main challenges faced by patients in reaching the hospital? (e.g., poor road conditions, limited transportation options)	
Clinical Services	☐Triage ☐Central Registration ☐Referral consultation ☐ Rehabilitation Center ☐ Kinetic therapy ☐ Emergency Care ☐Operation Theater and Anesthesia	
	Out-Patient Department (OPD)	
	Pediatrics	☐ Yes ☐ No
	General Medicine for Adults	☐ Yes ☐ No
	Diabetes and hypertension	☐ Yes ☐ No
	Surgery	☐ Yes ☐ No
	Orthopaedic surgery	☐ Yes ☐ No
	Gynecology-Obstetrics	☐ Yes ☐ No
	Cervical cancer screening	☐ Yes ☐ No
	Infectious Diseases: TB, HIV/AIDS, Malaria	☐ Yes ☐ No
	Ophthalmology	☐ Yes ☐ No
	Oral and Dentist	☐ Yes ☐ No
	E.N.T (Ear, Nose and Throat)	☐ Yes ☐ No
	Dermatology	☐ Yes ☐ No
	Mental Health	☐ Yes ☐ No
	Other OPD Department (if applicable)	☐ ☐ ☐ ☐
	Outreach Services	☐ Yes > If yes, please select the type of outreach services provided: ☐ Mobile clinics ☐ Community health education ☐ Disease screening program ☐ Others (Please specify: _____) ☐ No
	In-Patient Department (IPD)	

	ICU	☐ Yes ☐ No
	Pediatrics	☐ Yes ☐ No
	General Medicine for Adults	☐ Yes ☐ No
	General Surgery	☐ Yes ☐ No
	Orthopaedic surgery	☐ Yes ☐ No
	Gynecology-Obstetrics	☐ Yes ☐ No
	Infectious Diseases: TB, HIV/AIDS, Malaria	☐ Yes ☐ No
	Dange fever	☐ Yes ☐ No
	Mental Health	☐ Yes ☐ No
	Other IPD Department (if applicable)	☐ ☐ ☐ ☐ ☐
Para Medical Services	Laboratory	☐ Yes ☐ No
	Blood Transfusion	☐ Yes ☐ No
	Central Sterilization – Supply	☐ Yes ☐ No
	Imagery	☐ Yes ☐ No
	Pharmacy	☐ Yes ☐ No
	Infection Prevention and Control (IPC)	☐ Yes ☐ No
Referrals	With your knowledge, where are referrals usually initiated within your healthcare network?	☐MPA → ☐CPA1 → ☐ CPA 2 → ☐CPA3
	To which level is the patient typically referred when a referral is required?	☐To the next higher CPA level ☐ Directly to the National Hospital ☐ Other (Specify: _____)
	How are referrals communicated from lower CPA levels to higher CPA levels?	☐ Phone call ☐ Telegram ☐ Email ☐ Written form ☐ Other (Specify: _____)
	How are referrals communicated from higher levels to lower levels?	☐ Phone call ☐ Telegram ☐ Email ☐ Written form ☐ Other (Specify: _____)
	Is there a system in place to track referred patients moving from lower to upper levels?	☐ Yes (Specify: _____) ☐ No
	Is there a system in place to track referred patients moving from upper to lower levels?	☐ Yes (Specify: _____) ☐ No
	With your knowledge, is there a standardized referral form (e.g. a form developed by Government authority) used within your healthcare network?	☐ Yes ☐ No ☐ Some hospitals use the same form ☐ Not sure
	If a standardized referral form is NOT used, does your hospital use its own referral form?	☐ Yes ☐ No
	What are the main challenges faced in the referral process?	_____
	What improvements are recommended for the referral system?	_____
Hospital Management	Organization Chart available	☐Yes ☐ No
	Description table of roles and duties of management and staff in charge by section/ward	☐Yes ☐ No
Main Committee and Working Group	Are there established committees or working groups?	☐Yes ☐ No

	If **Yes**, please list the committees or working groups	e.g. Laboratory management team 1. _____ 2. _____ 3. _____ 4. _____ 5. _____
Planning and budget preparation	Annual Budget Plan for the hospital available?	☐Yes ☐ No
	Annual Budget Plan submitted to	☐ Chief Admin of the Province ☐ Chief Admin of the OD ☐Provincial Health Department ☐Health OD Office ☐Ministry of Health ☐Other (Specify: _____)
	Generally, what percentage of the planned budget is received before closing Fiscal Year (FY)?	_____% (Estimate)
	How often is the budget received during FY?	☐ Monthly ☐ Quarterly ☐ Annually ☐ Irregularly ☐ Other (Specify: _____)
	What are the main categories for budget allocation? (e.g., equipment, drug)	_____
	How is the budget allocation decided?	☐ Management meetings ☐ Departmental decisions ☐ Other (Specify: _____)
	Annual Action Plan for the hospital available?	☐Yes ☐ No
	Annual Action Plan submitted to	☐ Chief Admin of the Province ☐ Chief Admin of the OD ☐ Provincial Health Department ☐ Health OD Office ☐ Ministry of Health ☐ Other (Specify: _____)
Communication	Is there an existing official communication channel between the Health Department /Office and the hospital?	☐ Yes > ☐ Telegram ☐ Email ☐ Phone ☐ Other (Specify: _____) ☐ No
	If Yes, is the current means of communication efficient?	☐ Yes ☐ No
	What improvements would you suggest for better communication in between PHD/OD and hospital?	_____
Patient Record System	Is there a patient dossier for each patient?	☐ Yes ☐ No
	Features of the patient record system	☐ PMRS ☐ Paper-based ☐ Mixed (Paper-based and PMRS)
HO2 Monthly Reporting	Do you create and submit an HO2 monthly report as required?	☐ Yes ☐ No
	If yes, to whom is the HO2 monthly report submitted?	☐ Chief Admin of the Province ☐ Chief Admin of the OD ☐Provincial Health Department ☐Health OD Office ☐Ministry of Health ☐Other (Specify: _____)
	How are reports submitted?	☐ Telegram ☐ Email ☐ Paper-based ☐HMIS (Cambodian Gov HMIS) ☐ Other (Specify)
	How is patient data utilized within the hospital?	☐Clinical decision-making ☐ Resource management ☐ Clinical service improvement ☐Other (Specify: _____)

	Do you receive supervision from higher authorities on the Monthly reporting system?	☐ Yes > Supervision conducted by ☐ Chief Admin of the Province ☐ Chief Admin of the OD ☐ Provincial Health Department ☐ Health OD Office ☐Ministry of Health ☐ No
	If yes, how often do you receive supervision?	☐ Monthly ☐ Quarterly ☐ Semester ☐ Annually ☐ Irregularly ☐ Other (Specify: _____)
	What aspects are included in the supervision? (e.g., data accuracy, completeness, timeliness)	_____
	What are the main challenges faced in patient record management and reporting?	_____
	What improvements would you suggest for patient record management and reporting?	_____
Social Health Protection	Does the hospital accept the National Social Security Fund (NSSF)?	☐ Yes ☐ No
	If yes, what proportion of all your patients are covered by NSSF?	_____% (Estimate)
	Does the hospital accept the Health Equity Fund (HEF)?	☐ Yes ☐ No
	If yes, what proportion of all your patients are covered by HEF?	_____% (Estimate)
	Are there any patients who do not benefit from either of these two systems?	☐ Yes ☐ No ☐ Not Sure
	If Yes, what other social health protection schemes do patients use?	☐ Private insurance ☐ Community-based Health Insurance (CBHI) ☐ Out-of-pocket payments (no insurance or assistance) ☐ Other (Specify: _____)
Human Resources for Health	HR Development section	☐Yes ☐ No
	HR Management section	☐Yes ☐ No
Administration and Finance	Finance and Accounting section	☐Yes ☐ No
	Administration and Personnel section	☐Yes ☐ No
	Health Financing section	☐Yes ☐ No
Human Resources	Number of staff (Total)	_____staff members

HR Profession	
Medical Doctors	
- Internal Medicine (all the specialties)	☐Yes: (Number)_____ ☐ No
- Obstetrician/Gynecologist	☐Yes: (Number)_____ ☐ No
- Surgeon (all the specialties)	☐Yes: (Number)_____ ☐ No
- Anesthesia Specialist (CESAR)	☐Yes: (Number)_____ ☐ No
- Pediatric Surgeon	☐Yes: (Number)_____ ☐ No
- Ophthalmologist	☐Yes: (Number)_____ ☐ No
- ENT specialist	☐Yes: (Number)_____

	☐ No
– Psychiatrist	☐Yes: (Number)_____ ☐ No
– Imagery specialists	☐Yes: (Number)_____ ☐ No
– Other Specify: _____	☐Yes: (Number)_____ ☐ No
– Other specialties Specify: _____	☐Yes (Specify: _____) Number: _____
Nurses	
– General	☐Yes: (Number)_____ ☐ No
– Anesthesia technicians (ISAR)	☐Yes: (Number)_____ ☐ No
– Equipment and material arrangement	☐Yes: (Number)_____ ☐ No
– Mental Health	☐Yes: (Number)_____ ☐ No
– Dental	☐Yes: (Number)_____ ☐ No
– Other specialties	☐Yes (Specify: _____) Number: _____
Midwives	☐Yes: (Number)_____ ☐ No
Pharmacist	☐Yes: (Number)_____ ☐ No
Laboratory Technicians	☐Yes: (Number)_____ ☐ No
Radiology Technicians	☐Yes: (Number)_____ ☐ No
Kinetic Therapists	☐Yes: (Number)_____ ☐ No
Dietician	☐Yes: (Number)_____ ☐ No
Technicians for maintenance of equipment, material and facility	
– Electronic engineer	☐Yes: (Number)_____ ☐ No
Administrators	☐Yes: (Number)_____ ☐ No
Accountants	☐Yes: (Number)_____ ☐ No
Information Technology	☐Yes: (Number)_____ ☐ No
Communication Officers	☐Yes: (Number)_____ ☐ No

Category	**Details**	**Response/ Information**
Other Management	Number of ambulances	_____ ambulances # Working ambulance……..
	Medical Equipment Maintenance Department	☐Yes ☐ No
	Warehouse Management	☐Yes ☐ No
	Sanitation, Waste Management and Morgue	☐Yes ☐ No

	Laundry and Canteen	☐Yes ☐ No
Training Programs	Do you generally conduct in-house training for hospital workers?	☐Yes ☐ No
	If yes, do you maintain a record of these training sessions?	☐Yes ☐ No
Development Partners	Are there external partners providing technical support to the hospital?	☐Yes (Specify: ☐ No
	Are there external partners providing financial support to the hospital?	☐Yes (Specify: ☐ No
Collaborations	Are the clinical services of any external partners integrated with hospital services?	☐Yes (Specify: ☐ No
	What mechanisms are in place to evaluate the effectiveness of these collaborations?	☐ Regular meetings ☐ Other (Specify: _____)

2. Diabetes/Hypertension (DM/HTN)

Category	Details	Response/ Information
OPD Operations for DM/HTN Clinic	Operating hours	From : to :
	Standardized Patient flow at the DM/HTN OPD	☐ Yes ☐ No
	Number of consultation rooms dedicated to DM/HTN	_____ rooms
Human Resource	Number of Admin staff at DM/HTN OPD	_____
	Number of Medical Doctors at DM/HTN OPD	_____
	Number of Nurses at DM/HTN OPD	_____
	Number of IT technical Officers (Data management) at DM/HTN OPD	_____
OPD Data for DM	Average number of NEW patients/months	Male: _____ Female: _____ **Total: _____**
	Average number of NEW patients diagnosed with Type 2 Diabetes/month	Male: _____ Female: _____ **Total: _____**
	Average number of NEW patients diagnosed with Type 1 Diabetes/month	Male: _____ Female: _____ **Total: _____**
	Average number of FOLLOW-UP patients/month	Male: _____ Female: _____ **Total: _____**
	Average number of patients referred from the health center/month	Male: _____ Female: _____ **Total: _____**
	Average number of patients referred from other referral hospitals/month	Male: _____ Female: _____ **Total: _____**
OPD Data for Hypertension	Average number of NEW patients/months	Male: _____ Female: _____ **Total: _____**
	Average number of FOLLOW-UP patients/month	Male: _____ Female: _____ **Total: _____**
	Average number of patients referred from the health center/month	Male: _____ Female: _____ **Total: _____**

	Average number of patients referred from other referral hospitals/month	Male: _____ Female: _____ **Total: _____**
Screening and Diagnosis	General service offered by physicians (Initial visit Pt.)	☐ Symptoms ☐ History of diagnosis ☐ Risk factors (eating habits, Physical activity, smoking, alcohol) ☐ Background history including CVD and Renal disease
	Types of examinations (Initial visit Pt.)	General ☐ BMI ☐ BP ☐ Waist circumference Blood test ☐ HbA1C ☐ Glucose ☐ Cr ☐ Sodium ☐ Potassium ☐ ALT ☐Total cholesterol ☐LDL ☐ TG ☐HDL Eye ----- ☐ Conducted by an ophthalmologist? ☐ Visual Acuity ☐ Fundoscopy Urine analysis ☐ Glucose ☐ Ketones ☐ Protein ☐ Albumin ☐Teeth inspection ☐ Foot inspection
	General service offered by physicians (Annual visit Pt.)	☐ Self-care knowledge a ☐ Risk factor review (eating habits, Physical activity, smoking, alcohol) ☐ Symptoms
	Types of examinations (Annual visit Pt.)	General ☐ BMI ☐ Waist circumference ☐ BP ☐ Foot inspection Blood test ☐ HbA1C ☐ Glucose
Complication Management	Is there a protocol for managing common DM complications?	☐ Yes > ☐ Clinical Practice Guidelines Type 2 Diabetes 2015 ☐ Guide for Foot Care for Diabetic Patient 2022 ☐ Other (Specify: _____) ☐ No
Retinopathy Management	Is there a regular screening for diabetic retinopathy?	☐ Yes ☐ No
	What methods are used for retinopathy screening?	☐ Fundoscopy ☐Retinal imaging ☐ Other (Specify:_____)
	What criteria are used for screening (Retinopathy)?	_____
	How many screenings are conducted per month?	_____/month
	How many referrals to ophthalmology (or higher-level hospitals) are made per month?	_____/month
	Is treatment available for retinopathy?	☐ Yes ☐ No

	If yes, what treatments are provided?	_____
	How many treatments are administered per month?	_____/month
Nephropathy Management	Are tests for nephropathy routine?	☐ Yes >☐Urine albumin ☐Biochemical tests ☐Others (Specify:_____) ☐ No
	What criteria are used for nephropathy screening?	_____
	How many screenings are conducted per month?	_____/month
	How many referrals to higher-level hospitals are made per month?	_____/month
	Is treatment available for nephropathy?	☐ Yes ☐ No
	If yes, what treatments are provided?	_____
	How many treatments are administered per month?	_____/month
Neuropathy Management	Are there routine checks for signs of neuropathy?	☐ Yes ☐ No
	What methods are used for neuropathy assessment?	☐ Tuning fork ☐ Tendon reflex ☐ Other (Specify: _____)
Cardiovascular Risk Management	Is there regular screening for heart disease and stroke risks?	☐ Yes ☐ No
	What criteria are used for cardiovascular risk screening?	_____
	What methods are used for screening?	☐ ECG ☐ Echocardiography ☐ Other (Specify: _____)
	How many screenings are conducted per month?	_____/month
	Is treatment available for cardiovascular risks?	☐ Yes ☐ No
	If yes, what treatments are provided?	_____
	How many treatments are administered per month?	_____/month
Foot Care Management	Is there a routine foot care and examination program?	☐ Yes ☐ No
	What criteria are used for foot care screening?	_____
	Who conducts the foot care examinations?	☐ Medical Doctor ☐ Nurse ☐ Other (Specify: _____)
	Have the staff conducting foot care received appropriate training?	☐ Yes ☐ No
	What is the content of the foot care program?	_____
	How many examinations are conducted per month?	_____/month
Complication-Specific Treatments	Are there specific treatments available for **each** complication mentioned above?	☐ Yes ☐ No
	If yes, please specify treatments for each complication.	_____
Patient Education	Is patient education on complication management provided?	☐ Yes ☐ No
	Who conducts the patient education?	☐ Doctor ☐ Nurse ☐ Dietitian ☐ Other (Specify: _____)

	What topics are covered in the education?	_____
	Are any educational materials that patients could take home (e.g. pamphlet discussing Diabetes/Hypertension) provided for patients?	☐ Yes ☐ No
	Are any educational posters (e.g. symptoms of DM/HTN, Foot care, healthy foods etc) displayed on the wall in the waiting area?	☐ Yes ☐ No
	Is there an educational video program available for patients in the waiting area?	☐ Yes ☐ No
Referrals for DM/HTN patients	What conditions or criteria trigger a referral for DM/HTN patients?	_____
	How are referrals for DM/HTN patients processed?	☐ Directly by physician ☐ Through a referral coordinator ☐Other (Specify: _____)
	How is the referral communicated to the next level of care?	☐ Phone ☐ Email ☐ Telegram ☐ Referral Form only ☐Other (Specify: _____)
	How is the referral transportation to the next level of care?	☐ Ambulance ☐ Public transportation ☐ Private transportation ☐ Other:……..
	What key information is included on the referral form?	_____
	Are there established follow-up procedures after referral?	☐ Yes ☐ No ☐ Don't know ☐ Other:……
	If yes, please describe the follow-up process	_____
	What are the main challenges faced in the referral process for DM/HTN?	
	What improvements would you suggest for the DM/HTN referral system?	_____
IPD Operation	Average number of admissions/month	_____/month
	Average number of discharges/month	_____/month
	In which wards are DM/HTN patients primarily admitted?	_____ward
	What types of patients are commonly admitted?	☐Diabetic ketoacidosis ☐Stroke ☐Acute Myocardial Infarction ☐Other (Specify: _____)
	Are DM/HTN treatment protocols standardized in IPD?	☐ Yes ☐ No ☐ Don't know ☐ Other: ……
	If yes, describe protocol components	
Training	Are there any medical staff who have received training specifically on DM/HTN management?	☐ Yes ☐ No
	If yes, which institutions provided the training?	_____
	If yes, please specify the number and types of staff trained	Number trained: _____

			Types of staff trained: ☐ Medical doctors ☐ Nurses ☐ Midwives ☐ Other (Specify: _____)	
	How often do the staff receive refresher training?		☐ Annually ☐ Every 6 months ☐ Irregularly ☐ Not at all ☐ Other (Please specify: _____)	
	What topics are covered in the training? (e.g., diagnosis criteria, treatment options, patient management)			
	How do you assess the effectiveness of the training?		☐ Feedback forms ☐ Follow-up tests ☐ Clinical outcomes ☐ Other (Specify: ____)	
	Are there opportunities for practical application of learned skills during the training?		☐ Yes ☐ No	
Monitoring & Evaluation	Has the hospital established a clear governance team for the diabetes and hypertension services section?		☐ Yes ☐ No	
	The governance team consists of		☐ Hospital Director ☐ A responsible person in the department ☐ Other (Specify: _____)	
	Are there regular governance meetings to support, solve problems, and provide guidance?		☐ Yes ☐ No	
	Is there a process in place for direct observation of service delivery procedures?		☐ Yes ☐ No	
	Are evaluations conducted regularly?		☐ Yes ☐ No	
	Frequency of the evaluation conducted		☐ Quarterly ☐ Semi-annually ☐ Annually	
External Partners	Are there external partners providing technical support for DM/HTN management?		☐Yes (Specify: ☐ No	
	Are the clinical services of any external partners integrated with your DM/HTN services?		☐Yes (Specify: ☐ No	
	What mechanisms are in place to evaluate the effectiveness of these DM/HTN collaborations?		☐ Regular meetings ☐ Other (Specify: _____)	
Essential Equipment	**Equipment**	**Availability**	**Qty**	**Condition**
	Blood pressure measuring device	☐ Available ☐ Unavailable		☐Excellent ☐Good ☐Poor
	Glucometer	☐ Available ☐ Unavailable		☐Excellent ☐Good ☐Poor
	Reflex hummer	☐ Available ☐ Unavailable		☐Excellent ☐Good ☐Poor
	Tuning fork	☐ Available ☐ Unavailable		☐Excellent ☐Good ☐Poor
	Monofilament	☐ Available ☐ Unavailable		☐Excellent ☐Good ☐Poor
	Fundoscopy	☐ Available ☐ Unavailable		☐Excellent ☐Good ☐Poor
On-site observation	**Item**		**Availability for the Past Three Months**	
	Glucometer strip		☐ Available ☐ Unavailable	
	Urinal test (Sugar, protein)		☐ Available ☐ Unavailable	

	How are these items typically supplied to the DM/HTN OPD?	☐ Through Central Medical Store ☐ Hospital's private purchase ☐ Other: _____

3. Cervical Cancer Screening & Treatment (CCS&T)

Category	Details	Response/ Information
OPD Operations for CCS	Operating hours	From : to :
	Place of CCS provision	☐ General OPD ☐ Maternity and Gynecology OPD ☐ Other _____
	Standardized Patient flow at the OPD	☐Yes ☐ No
	Number of consultation rooms dedicated to CCS	_____ rooms
	What national guidelines/SOPs are used?	☐ National SOP for implementing CCS 2018 ☐ None ☐ Other
Cost of Services	Average cost for CCS on a woman at the first time visit. (in KHR)	_____Riel (KHR)
	Average cost for a FOLLOW-UP woman visit for CCS (in KHR)	_____Riel (KHR)
Human Resource	Number of Admin staff at OPD	_____
	Number of Medical Doctors at OPD	_____
	Number of Medical assistant at OPD	
	Number of Midwives at OPD	_____
	Number of Nurses at OPD	_____
	Number of IT technical Officers (Data management) at OPD	_____
Management and Data Reporting	Is there a monthly reporting system for patient records at OPD?	☐Yes ☐ No
	What type of reporting system is used?	☐ PMRS ☐ HMIS ☐ Paper-based ☐ Mixed Paper-based and PMRS
	Where do you submit the monthly report?	
OPD Data CCS	Average number of **NEW** patients/women/month	
	Average number of NEW patients/ women diagnosed with CC	
	Average number of FOLLOW-UP patients/women month	
	Average number of patients/ women referred to and from the health center/month	
	Average number of patients/ women referred from other referral hospitals/provincial hospital/national hospitals/month	
Screening	General service offered by physicians (Initial visit Pt.)	☐Symptoms ☐History of diagnosis ☐Risk factors ☐History reproductive health ☐ History of menstrual cycle
	Types of examinations (Initial visit Pt.)	☐ VIA

		☐ Pap smear ☐ HPV testing
	Primary person performing the above test	☐ Midwife ☐Gynecologist
Diagnosis and Treatment	Procedures followed upon positive screening result	☐ Immediate treatment ☐ Biopsy ☐Colposcopy ☐ Pap Smear ☐ Referral ☐ Other (specify:_____)
	Primary person performing the above test	☐Midwife ☐Gynecologist
	Primary treatment after confirming pre-cancerous lesions	☐Cryotherapy ☐Thermal Ablation ☐ LEEP ☐ Conization ☐ Simple hysterectomy ☐ Other:…… ☐Referral
	Primary treatment after confirming cancerous lesions	☐Cryotherapy ☐Thermal Ablation ☐ LEEP ☐ Conization ☐ Simple hysterectomy ☐ Other:…… ☐Referral
Follow-up and monitoring	Is there a follow-up system for patients after initial screening or treatment?	☐ Yes: Specify:……. ☐ No
Complication Management	How are complications managed during or after CCS&T procedures?	_____
Challenge and Improvements	Main challenges in providing CCS&T services	_____
	Suggested improvements for CCS&T services	_____
Referral	What conditions or criteria trigger a referral for patients?	_____
	How are referrals for patients processed?	☐ Directly by physician ☐ Through a referral coordinator ☐Other (Specify: _____)
	How is the referral communicated to the next level of care?	☐ Phone ☐ Email ☐ Telegram ☐ Referral Form only ☐Other (Specify: _____)
	Is there a standardized referral form for CCS&T?	☐ Yes ☐ No
	If yes, what key information is included on the form?	_____
IPD Operation for cervical cancer precancer/cancer	Average number of admissions/month	
	Average number of discharges/month	
	Average duration of admission (days)	
	Criteria for admitting CC patients?	
	Are CC treatment protocols standardized in IPD?	
	Describe protocol components	
Training	Are there any medical staff who have received training specifically on CCS&T procedures?	☐ Yes ☐ No
	If yes, which institutions provided the training?	
	If yes, please specify the number and types of staff trained.	Number trained: _____ Types of staff trained: ☐ Medical doctors ☐ Midwives ☐ Nurses ☐ Other (Specify: _____)

	If yes, how often do the staff receive refresher training?	☐ Annually ☐ Every 6 months ☐ Irregularly ☐ Not at all ☐ Other (Specify: _____)
	What topics are covered in the training? (e.g., diagnosis criteria, treatment options, patient management)	
	How do you assess the effectiveness of the training?	☐ Feedback forms ☐ Follow-up tests ☐ Pre-test and Post-test ☐ Clinical outcomes ☐ Other (Specify: ____)
	Are there opportunities for practical application of learned skills during the training?	☐ Yes ☐ No
	If no, do you request training from other institutions?	☐ Yes ☐ No
	If yes, which institutions provide the training?	
Cost per test	Please fill out the cost per test that your hospital offers	
	VIA	☐ _____ KHR / test ☐ Unavailable
	PAP smear	☐ _____ KHR / test ☐ Unavailable
	HPV test	☐ _____ KHR / test ☐ Unavailable
	Colposcopy	☐ _____ KHR / test ☐ Unavailable
	Biopsy	☐ _____ KHR / test ☐ Unavailable
	Cryotherapy	☐ _____ KHR / test ☐ Unavailable
	Thermal Ablation	☐ _____ KHR / test ☐ Unavailable
	LEEP	☐ _____ KHR / test ☐ Unavailable
	Conization	☐ _____ KHR / test ☐ Unavailable
	Simple Hysterectomy	☐ _____ KHR / test ☐ Unavailable
Essential Items/agents	**VIA Test**	
	Cotton swabs OR cotton wool	☐ Available ☐Unavailable
	Disposable examination gloves	☐ Available ☐Unavailable
	Diluted (3-5%) acetic acid solution	☐ Available ☐Unavailable

Medical Equipment	**Item**	**Availability**	**Qty**	**Condition**
	Gynecological Table	☐ Available ☐ Unavailable		☐Excellent ☐Good ☐Poor
	Lighting	☐ Available ☐ Unavailable		☐Excellent ☐Good ☐Poor
	Instrument tray	☐ Available ☐ Unavailable		☐Excellent ☐Good ☐Poor
	Forceps	☐ Available ☐ Unavailable		☐Excellent ☐Good ☐Poor
	Bivalve speculum (Small)	☐ Available ☐ Unavailable		☐Excellent ☐Good ☐Poor
	Bivalve speculum (Medium)	☐ Available ☐ Unavailable		☐Excellent ☐Good ☐Poor
	Bivalve speculum (Large)	☐ Available ☐ Unavailable		☐Excellent ☐Good ☐Poor
	Machine			
	Colposcopy	☐ Available ☐ Unavailable		☐Excellent ☐Good ☐Poor
	Cryotherapy	☐ Available ☐ Unavailable		☐Excellent ☐Good ☐Poor

	Thermal ablation	☐ Available ☐ Unavailable		☐Excellent ☐Good ☐Poor
	LEEP	☐ Available ☐ Unavailable		☐Excellent ☐Good ☐Poor

4. Pharmacy: Essential Drugs

Pharmacy drugs management	
1) What is the typical availability of the NCDs (DM/HTN) drug?	☐Generally available ☐Sometimes unavailable ☐Often out of stock
2) What is the ordering frequency for NCDs drugs?	☐ Daily ☐ Weekly ☐ Monthly ☐ Other (Specify: _____)
3) How frequently are the NCDs drugs supplied?	☐ Daily ☐ Weekly ☐ Monthly ☐ Other (Specify: _____)
4) Do you use a standardized government-approved drug ordering list OR your hospital's own drug ordering list?	☐ Standardized Government-approved drug ordering list ☐ Hospital's own drug ordering list ☐ Other (Specify: _____)
5) Does the hospital independently purchase any drugs?	☐ Yes ☐ No
6) If yes, what percentage of the total stock is independently purchased?	_____%
7) Does your department maintain a comprehensive drug price list?	☐ Yes ☐ No
8) If a drug price list is not maintained, which department OR personnel is responsible for overseeing drug pricing information?	_____
9) Do you have an external partner(s) to support the drug supply for your hospital?	☐ Yes* ☐ No If yes*, please specify the organization that supports the drug supply: _____
10) Stock availability: Please tick if each drug below is currently available or unavailable. If drug is unavailable, please specify the duration of unavailability.	

Remarks: Meaning of (V) (E) (N) and (SN)

V: Vital	E: Essential	N: Non-essential	SN: Special Need

Medicines for Diabetes (Source: Essential Medicines List 10th Edition 2024)

Drug Name and Dosage	**Current Availability Status**	**Time Since Last Available (duration unavailable)**
Injection		
(V) (SN) Insulin, soluble (100IU/ml in 10ml vial)	☐ Available ☐ Unavailable	
(V) (SN) Insulin, intermediate-acting (40IU/ml in 10ml vial)	☐ Available ☐ Unavailable	
(V) (SN) Insulin, intermediate-acting (100IU/ml in 3ml cartridge or pre-filled pen)	☐ Available ☐ Unavailable	
(V) (SN) Insulin, long-acting (100IU/ml in 3ml cartridge or pre-filled pen)	☐ Available ☐ Unavailable	
(V) (SN) Premixed Insulin 70/30 (100IU/ml)	☐ Available ☐ Unavailable	
Tablet		
a. Oral hypoglycemic agents		

(V) Metformin 500mg	☐ Available ☐ Unavailable	
(V) Gliclazide 30mg	☐ Available ☐ Unavailable	
(V) Gliclazide 60mg	☐ Available ☐ Unavailable	
(V) Gliclazide 80mg	☐ Available ☐ Unavailable	
Drug Name and Dosage	**Current Availability Status**	**Time Since Last Available (duration unavailable)**
(N)(SN) Glibenclamide 5mg	☐ Available ☐ Unavailable	
b. Anti-hypertensive medicines		
(V) Amlodipine 5mg	☐ Available ☐ Unavailable	
(V) Atenolol 50mg	☐ Available ☐ Unavailable	
(V) Bisoprolol 2.5mg	☐ Available ☐ Unavailable	
(V) Bisoprolol 5mg	☐ Available ☐ Unavailable	
(V) Enalapril 2.5mg	☐ Available ☐ Unavailable	
(V) Enalapril 5mg	☐ Available ☐ Unavailable	
(V) Enalapril 10mg	☐ Available ☐ Unavailable	
(V) Hydralazine 20mg	☐ Available ☐ Unavailable	
(V) Hydralazine 25mg	☐ Available ☐ Unavailable	
(V) Hydrochlorothiazide 25mg	☐ Available ☐ Unavailable	
(N) (SN) Lisinopril + amlodipine 10mg + 5mg	☐ Available ☐ Unavailable	
(N) (SN) Lisinopril + hydrochlorothiazide 10mg + 12.5mg	☐ Available ☐ Unavailable	
(N) (SN) Lisinopril + hydrochlorothiazide 20mg + 12.5mg	☐ Available ☐ Unavailable	
(N) (SN) Lisinopril + hydrochlorothiazide 20mg + 25mg	☐ Available ☐ Unavailable	
(V) Losartan 25mg	☐ Available ☐ Unavailable	
(V) Losartan 50mg	☐ Available ☐ Unavailable	
(V) Methyldopa 250mg	☐ Available ☐ Unavailable	
(N) (SN) Telmisartan + amlodipine 40mg + 5mg	☐ Available ☐ Unavailable	

(N) (SN) Telmisartan + amlodipine 80mg + 5mg	☐ Available ☐ Unavailable	
(N) (SN) Telmisartan + amlodipine 80mg + 10mg	☐ Available ☐ Unavailable	
(N) (SN) Telmisartan + hydrochlorothiazide 40mg + 12.5mg	☐ Available ☐ Unavailable	
(N) (SN) Telmisartan + hydrochlorothiazide 80mg + 12.5mg	☐ Available ☐ Unavailable	
(N) (SN) Telmisartan + hydrochlorothiazide 80mg + 25mg	☐ Available ☐ Unavailable	

5. Laboratory: Test Equipment and test (DM/HTN & Cervical Cancer)

Laboratory management	
What is the typical availability of the lab test reagents?	☐Generally available ☐Sometimes unavailable ☐Often out of stock
What is the ordering frequency for lab test reagents by the Laboratory?	☐ Daily ☐ Weekly ☐ Monthly ☐ Other (Specify: _____)
How frequently are the lab test reagents supplied by the Hospital?	☐ Daily ☐ Weekly ☐ Monthly ☐ Other (Specify: _____)
Do you use a standardized government-approved lab test item ordering list OR your hospital's own lab-test item ordering list?	☐ Standardized Government-approved laboratory ordering list ☐ Hospital's own ordering list ☐ Other (Specify: _____)
Does the hospital independently purchase any lab test items?	☐ Yes ☐ No
Does your department maintain a comprehensive lab test items price list?	☐ Yes ☐ No
If a lab-test item price list is not maintained, which department OR personnel is responsible for overseeing lab-test pricing information?	_____
Do you have an external partner(s) to support the lab items including reagent supply for your hospital?	☐ Yes* ☐ No If yes*, please specify the organization that supports the lab-test item supply: _____
Test Reagent (DM/HTN)	**Availability for the Past Three Months**
HbA1c testing	☐ Available ☐ Unavailable
Blood count (CBC)	☐ Available ☐ Unavailable
Blood gas analysis	☐ Available ☐ Unavailable
Coagulation test	☐ Available ☐ Unavailable
Creatinine, Urea test	☐ Available ☐ Unavailable
Lipid profile (Cholesterol, LDL, HDL, Triglyceride) test	☐ Available ☐ Unavailable
Electrolytes test	☐ Available ☐ Unavailable
Liver function test	☐ Available ☐ Unavailable
Troponin test	☐ Available ☐ Unavailable
Immunoreactive Insulin (IRI)	☐ Available ☐ Unavailable
C-peptide immunoreactivity	☐ Available ☐ Unavailable
Anti-GAD Antibody	☐ Available ☐ Unavailable

Test Reagent (CCS&T)	Availability for the Past Three Months
Cytology	☐ Available ☐ Unavailable
PCR	☐ Available ☐ Unavailable

6. Medical Imagery Services

Category	Item	Availability	Qty	Condition
Imagery	X-ray	☐ Available ☐ Unavailable		☐Excellent ☐Good ☐Poor
	CT-scan	☐ Available ☐ Unavailable		☐Excellent ☐Good ☐Poor
	MRI	☐ Available ☐ Unavailable		☐Excellent ☐Good ☐Poor
	Ultrasound	☐ Available ☐ Unavailable		☐Excellent ☐Good ☐Poor
	Ultrasound Probe - Linear	☐ Available ☐ Unavailable		☐Excellent ☐Good ☐Poor
	Ultrasound Probe - Convex	☐ Available ☐ Unavailable		☐Excellent ☐Good ☐Poor
	Ultrasound Probe - Phased array	☐ Available ☐ Unavailable		☐Excellent ☐Good ☐Poor
	Electrocardiography (ECG) Unit	☐ Available ☐ Unavailable		☐Excellent ☐Good ☐Poor

Appendix 3: PHD & OD Baseline Survey Questionnaire

Baseline Survey Interview Format for Kampong Cham PHD & Health OD Offices

Interview Questionnaires

Category	Details	Notes
1) General Management		
PHD		
Annual Operation Plan (AOP) Annual Budget Plan (ABP)	What types of AOPs/ABPs contain NCD activities do you maintain or develop?	e.g.,) AOP/ABP for the province? AOP/ABP for H-EQIP2, other development partners?
*Ask for different types of AOP/ABP if applicable	During the planning development at the Provincial level, how do you identify the necessary components and allocate the budget?	Components prioritized based on reported data. e.g.) Data and information sources, such as reports, surveys, registries, databases, OR management meetings? Governor decision?
*	Please explain the process of developing the mentioned AOP and ABP.	Double-check with the existing info: e.g.,) 1**) Provincial AOP/ABP** : Provincial/ODs/Commune, respective level develops AOP/ABP→PHD compiles those AOP/ABP and submits it to Provincial Gov→MEF **2) H-EQIP2**: A PHD prepares a budget with the ODs then submit to the project director then submit it to the MEF.
*	Generally, how long does it take to receive the budget after submitting the request?	Provincial budget and H-EQIP2?
*	What is the mechanism of receiving the budget?	e.g.,) Provincial Government receive the budget then allocates it to PHD→PHD allocates it to ODs?
*	How often is the budget received during FY?	
*	Generally, what percentage of the planned budget is received before the closing Fiscal Year (FY)?	_____% (Estimate)
Activity Planning and Implementation	What are the main activities that you plan and implement for NCD management in the KC province?	
	What are the main challenges or difficulties that you face in managing NCDs and providing NCD services?	e.g.) challenges, such as lack of resources, staff, training, equipment, guidelines, protocols, etc.
	What are the main strengths that you have in managing NCDs and providing NCD services?	e.g.) Strengths, such as good practices, achievements, partnerships, innovations, etc.

	What are the main gaps or needs that you have in managing NCDs and providing NCD services?	e.g.) Gaps or needs, such as areas for improvement, support, capacity development, etc.
Roles, and Responsibilities of Different Levels of Hospitals	How do you define the main roles and responsibilities of the Provincial Hospital and OD referral hospitals in providing NCD services in your area?	e.g.) examples of role and responsibility, such as service delivery, and referral. PHD/OD offices' perspectives on the definitions of the hospital CPA (Referral CPA 1 to a higher level, CPA1 with simple screening; the higher CPA you go, the more complicated the screenings would be, etc)
Supervision on NCD Activities	Do you conduct supervision activities on NCD for the Provincial Hospital?	
	If supervision is conducted, what are the main areas of focus?	
	How often do you conduct supervision activities on NCD for the Provincial Hospital?	
Health OD Offices		
AOP/ABP	What types of AOPs/ABPs contain NCD activities do you maintain or develop?	e.g.,) AOP/ABP for the OD? AOP/ABP for H-EQIP2, Other development partners?
	During the planning development at your OD level, how do you identify the necessary components and allocate the budget?	
*Ask for different types of AOP/ABP if applicable	Generally, how long does it take to receive the budget after submitting the request?	
*	How often is the budget received during FY?	
*	Generally, what percentage of the planned budget is received before the closing Fiscal Year (FY)?	
Activity Planning and Implementation	What are the main activities that you plan and implement for NCD management in your district?	
	What are the main challenges or difficulties that you face in managing NCDs and providing NCD services?	
	What are the main strengths that you have in managing NCDs and providing NCD services?	
	What are the main gaps or needs that you have in managing NCDs and providing NCD services?	

Roles, and Responsibilities of Different Levels of Hospitals	How do you define the main roles and responsibilities of the referral hospitals in providing NCD services in your area?	e.g.) examples of role and responsibility, such as service delivery, and referral. PHD/OD offices' perspectives of definitions of the hospital CPA (Referral CPA 1 to higher level etc)
Supervision on NCD Activities	Do you conduct supervision activities on NCD for the jurisdictional OD hospital?	
	If supervision is conducted, what are the main areas of focus?	
	How often do you conduct supervision activities for the Hospital?	
2) NCD Data Management (DHS&T/CCS&T)		
PHD		
DHS&T / CCS&T	Who is responsible for inputting, verifying, and analysing HMIS data collected from PH and ODs?	*Interview HIS department at the PHD
	Specifically, could you provide the HMIS data for the year 2023 and the past five years?	Ref. ANNEX 1
	Do you have data for the indicators listed in the National Strategic Plan for NCDs?	Ref. ANNEX 2
	How many types of electronic systems are being used by PH and RHs?	
Health OD Offices		
NCD Data: DHS&T / CCS&T	Who is responsible for inputting, verifying, and analysing HMIS data collected from RH and HCs in this OD?	
	Specifically, could you provide the HMIS data for the year 2023 and the past five years?	Ref. ANNEX 1
	Do you have data for the indicators listed in the National Strategic Plan for NCDs?	Ref. ANNEX 2
	How many types of electronic systems are being used by RHs and HCs?	
3) Communication and Coordination		
PHD		
PHD ⇔ PMD (MoH)	Means of communication with the Preventive Medicine Department of the Ministry of Health	e.g.) channels, such as meetings, reports, emails, phone calls, Telegram, Email etc.

	What are the main topics, contents, and purposes of communication and coordination?	e.g.) Topics, such as plans, budgets, data, feedback, etc.
PHD ⇔ PH	Means of communication with the KC Provincial Hospital	
	What are the main topics, contents, and purposes of communication and coordination?	
PHD ⇔OD Offices	Means of communication with the Health OD Offices	
	What are the main topics, contents, and purposes of communication and coordination?	
	What are the main challenges or difficulties that you face in communication and coordination?	e.g.) Challenges, such as lack of clarity, consistency, feedback, etc.
	What are the main strengths that you have in communication and coordination?	e.g.) Strengths, such as good relationships, trust, collaboration, etc.
Health OD Offices		
OD Offices⇔PHD	Means of communication with the PHD	e.g.) channels, such as meetings, reports, emails, phone calls, Telegram, Email etc.
	What are the main topics, contents, and purposes of communication and coordination?	e.g.,) Data reporting, Hospital service management, Policy etc
OD Offices⇔Jurisdictional OD RHs (and HCs)	Means of communication with the jurisdictional OD RHs	
	What are the main topics, contents, and purposes of communication and coordination?	
	What are the main challenges or difficulties that you face in communication and coordination?	e.g.) Challenges, such as lack of clarity, consistency, feedback, etc.
	What are the main strengths that you have in communication and coordination?	e.g.) Strengths, such as good relationships, trust, collaboration, etc.
4) Training on NCD (DHS&T/CCS&T)		
PHD		
	Do you maintain a record of NCD (DMHS&T & CCS&T) training sessions led by the PHD?	Check the latest record (e.g., 2023)

(If no record is maintained)	What are the main training meetings or workshops and supervision activities that you plan and conduct for the KC Province (PH, OD Hospitals and HC?) on NCD issues and services ?	e.g.) Training and supervision activities, such as topics, methods, frequency, Audiences (trainee/participants), etc. *Trace info if there is a training meetings or workshops record
	What are the main collaboration activities that you conduct or participate in with the NGOs and other partner organizations in the province on NCD issues and services?	e.g.) Collaboration activities, such as partners, o objectives, outcomes, etc.
Health OD Offices		
	Do you maintain a record of NCD (DMHS&T & CCS&T) training sessions led by the OD office?	Check the latest record (e.g., 2023)
(If no record is maintained)	What are the main training meetings or workshops and supervision activities that you plan and conduct for the OD health facilities on NCD issues and services ?	e.g.) Training meetings or workshops and supervision activities, such as topics, methods, frequency, Audiences etc.
	What are the main collaboration activities that you conduct or participate in with the NGOs and other partner organizations in the province on NCD issues and services?	e.g.) Collaboration activities, such as partners, o objectives, outcomes, etc.
5) Project expectations and suggestions		
Both PHD and OD Offices		
Project expectations and suggestions	What are your expectations or hopes for the NCD Control Project in terms of its outcomes, outputs, and activities?	
	What are your suggestions or recommendations for the NCD Control Project in terms of its priorities, strategies, and approaches?	
	How do you think the NCD Control Project can support you and your work in terms of technical, financial, and material assistance?	
	How do you think you can contribute to the NCD Control Project in terms of participation, input, and feedback?	
	Is there anything else that you would like to share or ask about the NCD Control Project?	Use this section to conclude the interview and thank the interviewee for their time and cooperation

ANNEX 1. HMIS data related to NCDs

NCD: Number of OPD and IPD patients using the following categories by age group and sex:

Health Center HIS Monthly Report (HC1)

Health Center: Ampil **Number of Population: 24032** **OD: Kampong Cham - Kg. Siem** **Province: Kampon From 01 of January to the last day of December**

Outpatient consultation section (OPD)

I. Outpatient Consultation (OPD)

1. Quantity of Activity (By zone)	Zone A	Zone B	Zone C	Total	M	F
New Cases of OPD	1,486	2,494	1,085	**5,065**	1,959	3,106
Total Cases of OPD	1,623	2,672	1,165	**5,460**	2,112	3,348

Zone A: Village where health facility is located *Zone B: Villages are in coverage area of health facility* *Zone C: Villages are outside the coverage area*

	2. Health problems (new cases)	ICD10	0-28 days		29 days-11 months		1-4 years		5-14 years		15-24 years		25-49 years		50-64 years		≥ 65 years		**Total**		Referred to		**Using HEF**	
			M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	**M**	**F**	M	F	M	F
4. Non-Communicable Diseases																								
72	Diabetes 1	E10	0	0	0	0	0	0	0	0	0	0	0	0	1	3	0	1	**1**	**4**	0	0	0	0
73	Diabetes 2	E11	0	0	0	0	0	0	0	0	0	0	0	3	10	22	1	11	**11**	**36**	0	0	0	0
74	Number of Children with Severe Acute Malnutrition (SAM) has bilateral pitting oedema in both feet		0	0	0	0	0	0	0	0									**0**	**0**	0	0	0	0
75	Number of Children with Severely Acute Malnutrition (SAM) (Weight-for-length/height < -3 SD) without medical complication.		0	0	0	0	0	0	0	0									**0**	**0**	0	0	0	0
76	Number of Children with Severely Acute Malnutrition (SAM) (MUAC <11.5cm) without Medical		0	0	0	0	0	0	0	0									**0**	**0**	0	0	0	0
77	Number of children with Moderate Acute Malnutrition (MAM) (Weight-for-length/height < -2 SD and - 3SD)		0	0	0	0	0	0	0	0									**0**	**0**	0	0	0	0
78	Number of children with Moderate acute malnutrition (MAM) has MUAC from 11.5 cm to <12.5 cm)		0	0	0	0	0	0	0	0									**0**	**0**	0	0	0	0
79	Number of children received Growth Monitoring and Promotion (GMP)		0	0	0	0	0	0	0	0									**0**	**0**	0	0	0	0
80	Number of children had severe underweight (Weight for age <- 3SD)		0	0	0	0	0	0	0	0									**0**	**0**	0	0	0	0
81	Harmful use of addicted substances	F11.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	**0**	0	0	0	0
82	Secondary hypertension	I10.0							0	0	0	0	10	0	11	15	13	14	**34**	**29**	0	0	0	0
83	Primary hypertension	I10.9							0	0	0	0	32	4	67	42	59	33	**158**	**79**	0	0	0	0
84	Sequelae of cerebrovascular disease	I69							0	0	0	0	0	0	0	0	0	0	**0**	**0**	0	0	0	0
85	Pregnant women with hypertension	O24.4								0		0		0		0		0		**0**		0		0
86	Focal traumatic brain injury	S06.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	**0**	0	0	0	0
87	Other injuries (not traffic and mine)	T14.8	0	0	0	0	1	2	6	10	22	26	24	26	23	24	8	7	**84**	**95**	0	0	0	0
88	Traffic accidents (no brain injury)	V87	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	**0**	0	0	0	0
89	Injury by unexploded ordnance (UXO)	Y38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	**0**	0	0	0	0
90	Injury by mine	Y92.64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	**0**	0	0	0	0
91	Other NCDs		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	**0**	0	0	0	0

ANNEX 2. Indicators set in the National Strategic Plan for NCD Prevention and Control are to be monitored annually or quarterly (**not by STEPS Survey**)

Indicators	Calculation	Frequency	Have data to measure? (Yes, No)
17. Percentage of people aged 25-64 years with hypertension receiving treatment in health facilities	**Numerator:** Total number of individual outpatients with hypertension registered and receiving treatment in health facilities. **Denominator:** Estimated number of people aged 25-64 years with hypertension in general population (Total population aged 25-64 years of OD **x** national prevalence of hypertension from STEPS survey)	Annual	
18. The proportion of hypertension patients with blood pressure controlled after 12 month-treatment	**Numerator:** Cumulative number of registered hypertension patients with controlled blood pressure (SBP <140 and DBP <90) in the most recent quarter at all health facilities in a given geographical area (OD or province) **Denominator:** Estimated number of people with hypertension at the subnational level.	Annual	
19. Percentage of people aged 25-64 years with diabetes receiving treatment in health facilities	**Numerator:** Total number of individual outpatients with diabetes registered and receiving treatment in health facilities. **Denominator:** Estimated number of people aged 25-64 years with diabetes in general population years (Total population aged 25-64years of OD **x** national prevalence of diabetes from STEPS survey).	Annual	
20. Percentage of diabetes patients with fasting or random blood glucose control after 12-month treatment.	**Numerator:** Cumulative number of registered diabetes patients with controlled blood glucose (FBG < 150 mg/dl or RBG < 180 mg/dl or HbA1C <7% if available) in the most recent quarter at all health facilities in a given geographical area, such as a district, and province. **Denominator:** Total number of diabetes patients receiving treatment in health centers after 12 months.	Annual	
21. The proportion of health centers in a given geographical area that have core CVD/diabetes drugs available	**Numerator:** Number of health facilities in the programme reporting “no stock-out” of core CVD/diabetes drugs in the last quarter **Denominator:** Number of health facilities participating in the programme	Quarterly	
22. Percentage of target health centers providing NCD services.		Not set	
23. HPV vaccination coverage		Not set	
25. Percentage of screening-test-positive women receiving treatment in the previous 12-month period **Frequency:** Annual	**Numerator:** Number of screen-positive women completing appropriate treatment for cervical precancerous lesion in the previous 12-month period. **Denominator:** Number of screened women aged 30-49 years with a positive result in the previous 12-month period. **Frequency:** Annual	Annual	
26. Percentage of target health centers providing cervical cancer screening services.		Not set	

Appendix 4: Detailed Schedule- Technical Assessment Visit

Date	Day	Team 1: PHD & OD (Short-Term Expert, Technical Expert, Project Assistant)	Team 2: Hospitals (Chief Advisor, Fellow Dr & Project Assistant)
7/9	Tue		9:00 Prey Chhor RH (CPA 1) 14:00 KC PH (CPA 3) Meeting with Chief DMHT & Chief Maternity for briefing
7/10	Wed		8:00- KC PH (CPA 3)
7/11	Thu		9:00- Steung Trang RH (CPA 1)
7/12	Fri		8:30- Koh Soutin RH (CPA 1)
7/13	Sat		
7/14	Sun		
7/15	Mon	9:00- Koh Soutin OD 15:00- PHD	8:30- Kan Meas RH (CPA 1)
7/16	Tue	9:00- Batheay OD	9:00- Batheay RH (CPA 2)
7/17	Wed	9:00- Cheung Prey OD	9:00- Cheung Prey RH (CPA 2)
7/18	Thu	9:00- Srey Santhor OD	9:00- Srey Santhor RH (CPA 2)
7/19	Fri	9:00- Chamkar Leu OD	9:00- Chamkar Leu RH (CPA 2)
7/20	Sat		
7/21	Sun		
7/22	Mon	9:00- Batheay RH	9:00- Batehay RH
7/23	Tue	14:00- Pre-Workshop Meeting with PMD, PHD & JICA Team	14:00- Pre-Workshop Meeting with PMD, PHD & JICA Team
7/24	Wed	Workshop @ PHD 8:00-12:00	Workshop @ PHD 8:00-12:00
7/25	Thu	Meeting at MoH Meeting at JICA Cambodia Office	Meeting at MoH Meeting at JICA Cambodia Office

BASELINE SURVEY RESULTS (Key Findings Extracted)

General Information

Category	Kang Meas RH	Steung Trang RH	Prey Chhor RH	Koh Soutin RH	Chamkar Leu RH	Batheay RH	Srey Santhor RH	Cheung Prey RH	KC PH
Hospital Type	**CPA1**	**CPA1**	**CPA1**	**CPA1**	**CPA2**	**CPA2**	**CPA2**	**CPA2**	**CPA3**
Hospital Reports To	KCM PHD	Steung Trang OD	Prey Chhor OD	Koh Soutin OD	KCM PHD/Chamkar Leu OD	KCM PHD	KCM PHD/Srey Santhor OD	KCM PHD/Cheung Prey OD	PHD
Years of Operation	05 Years	10 Years	24 Years	6 Years	29 Years	9 Years	40 Years	8 Years	44 Years
Human Resources	34	37	52	23	80	6?	57	71	409
OPD Operating Hours	07:30 - 17:30	07:30 - 17:30	07:30 - 12:00	07:30 - 11:30	07:30 - 17:30	07:30 - 17:30	07:30 - 11:30	07:30 - 11:30	08:30 - 17:30
Average OPD Patients/Day	7	22	15	15	11	43	40	23	110
Number of IPD Beds	40	55	70	40	100	80	80	80	280
Population Served	108,274	129,312	156,645	71,145	120,885	130,000	120,042	102,366	N/A
Geographic Area (km^2)	389.80 km^2	10,890 km^2	N/A	17,622 km^2	771.50 km^2	8,365 km^2	39,800 km^2	4,549.09 km^2	N/A
Travel Time to Hospital from the furthest point	2 hours	1.5 hours	30 mins	1 hours	3 hours	2 hours	1-1.5 hours	30-40 mins	3 hours
Transport Methods	Bicycle Motorbike vehicle	Motorbike vehicle	Motorbike	Bicycle Motorbike vehicle	Motorbike	Vehicle Motorbike	Motorbike	Motorbike rickshaw	Car

Main Challenges for transportation	RH is far from the district	Limited transportation	Limited transportation, Patients with lack of transportation fee	Limited transportation	Limited transportation	Poor road conditions	Limited transportation	Limited transportation	Poor road conditions

NCD Services

Category	Kang Meas RH	Steung Trang RH	Prey Chhor RH	Koh Soutin RH	Chamkar Leu RH	Batheay RH	Srey Santhor RH	Cheung Prey RH	KC PH
Hospital Type	**CPA1**	**CPA1**	**CPA1**	**CPA1**	**CPA2**	**CPA2**	**CPA2**	**CPA2**	**CPA3**
NCD Services	☑DMHT (General OPD) ☑MoPoTsyo ☑CCS&T	☑DMHT (General OPD) ☑CCS&T	☑DMHT (General OPD) ☑CCS&T	☑DMHT (General OPD) ☑CCS&T	DMHT (General OPD) ☑MoPoTsyo ☑CCS&T	☑DMHT (Chronic Disease OPD) ☑CCS&T	☑DMHT (General OPD) ☑CCS&T	☑DMHT ☑MoPoTsyo ☐CCS&T	☑DMHT ☑CCS&T

Referral

Category	Kang Meas RH	Steung Trang RH	Prey Chhor RH	Koh Soutin RH	Chamkar Leu RH	Batheay RH	Srey Santhor RH	Cheung Prey RH	KC PH
Hospital Type	**CPA1**	**CPA1**	**CPA1**	**CPA1**	**CPA2**	**CPA2**	**CPA2**	**CPA2**	**CPA3**
Refer to	CPA 2 & 3	CPA 2 & 3, National	CPA 3	CPA 2 & 3, National	CPA 3 & National	CPA 3 & National	CPA 3 & National Private clinic (Pt's preference)	CPA 3 & National	National Hospital
Standardized Referral Form	✓	✓	✓	✓	✓	✓	✓	✓	✓
Referral Communication	☑Phone call ☐Telegram ☐E-mail ☑Referral Form	☑Phone call ☑Telegram ☐E-mail ☑Referral Form	☑Phone call ☑Telegram ☐E-mail ☑Referral Form	☑Phone call ☐Telegram ☐E-mail ☑Referral Form	☑Phone call ☑Telegram ☐E-mail ☑Referral Form	☑Phone call ☐Telegram ☐E-mail ☑Referral Form	☑Phone call ☑Telegram ☐E-mail ☑Referral Form	☑Phone call ☐Telegram ☐E-mail ☑Referral Form	☑Phone call ☐Telegram ☐E-mail ☑Referral Form

Referral Tracking System	No	No	No	No	No	No	No	No	No
Challenges for Referral	Only one ambulance working	Lack of ambulance	N/A	The ambulance is not well equipped	Lack of ambulance	Main two hospitals Batheay refer don't have PMRS	N/A	Patient monitor is old	Lack of communication

Human Resources (CPA 1)

Not Applicable for CPA 1 Staff Shortage

HR Profession	CPA 1 Standard	Kang Meas RH	Steung Trang RH	Prey Chhor RH	Koh Soutin RH
Number of Beds	**40-60**	40	55	70	40
Medical Doctors	**5-7**	7	7	12	3
Internal Medicine		0 (GP*6)	0	10 (Specialized?)	0 (GP*3)
Obstetrician/Gynecologist		0 (GP*1)	0 (GP*1)	1	0 (Same GP*3)
Surgeon		0	0	1	0
Anesthesia Specialist (CESAR)		0	0	0	0
Pediatric Surgeon		0	0	0	0
Ophthalmologist		0	0	0	0
ENT Specialist		0	0	0	0
Psychiatrist		0	0	0	0
Imagery Specialists		0	0	0	0
Other (Specify)		0	0	0	0
Nurses	**15-22**	9	12	15	9
Anesthesia Technicians (ISAR)		0	0	1	0
Equipment Technicians	**4**	0	0	1	0
Mental Health	**2**	0	0	0	0
Dental	**2**	3	3	3	1
Midwives	**5-10**	8	8	11	6
Pharmacist	**1-3**	1	1	3	0
Laboratory Technicians	**3**	2	2	4	2
Radiology Technicians	**3**	0	1	1	0
Kinetic Therapists	**1-2**	2	1	1	0
Dietician		0	0	0	0

Maintenance Technicians	**2-3**	0	0	1	0
Electronic Engineer		0	0	0	0
Administrators	**2-5**	1	0	2	3
Accountants	**2-3**	1	1	0	1
IT Specialists	**1-2**	0	0	1	0
Communication Officers	**1-2**	0	0	0	0
Total	**50-81**	34	37	52	23

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Human Resources (CPA 2)

Not Applicable for CPA 2 Staff Shortage

HR Profession	CPA 2 Standard	Chamkar Leu RH	Batheay RH	Srey Santhor RH	Cheurng Prey RH
Number of Beds	**60-100**	100	80	80	80
Medical Doctors	**11-14**	12	4	11	7
Internal Medicine		0	0	0 (GP*9)	0 (GP*2)
Obstetrician/Gynecologist		0 (GP*2)	1	0 (GP*1)	2
Surgeon	**At least 3**	3	1	0 (GP*1 for minor surgey)	3
Anesthesia Specialist (CESAR)		0	0	0	0
Pediatric Surgeon		0	0	No	0
Ophthalmologist		0	0	No	0
ENT Specialist		0	0 (GP*1)	No	0
Psychiatrist		0	0	No	0
Imagery Specialists	**At least 1**	0	0	0	0
Other (Specify)		0	0	Dentist*2	0

Nurses	**27-40**	23	10	8	20
Anesthesia Technicians (ISAR)	**3**	1	4	3	1
Equipment Technicians	**4**	0	1	1	2
Mental Health	**2**	6	0	1 (short course certificate)	0
Dental	**2**	2	2	0	0
Midwives	**7-12**	20	23	17	22
Pharmacist	**2-4**	1	1	0	1
Laboratory Technicians	**3-5**	5	7	3	6
Radiology Technicians	**3**	0	2	0	1
Kinetic Therapists	**2-3**	0	1	2	1
Dietician		0	0	0	0
Maintenance Technicians	**3-5**	0	1	0	0
Electronic Engineer		0	0	0	0
Administrators	**3-4**	1	1	1	5
Accountants	**2-3**	2	1	1	0
IT Specialists	**2-3**	2	0	1	0
Communication Officers	**2**	0	0	0	0
Total	**80-118**	80	60	57	71

Human Resources (CPA 3)

Staff Shortage

HR Profession	CPA 3 Standard	KC Provincial Hospital	Remarks
Number of Beds	**100-250**	**280**	
Medical Doctors	**23-40**	49	
Internal Medicine		5	
Obstetrician/Gynecologist		2	6 GPs working in Maternity

Surgeon	**6**	2	
Anesthesia Specialist (CESAR)	**1**	2	
Pediatric Surgeon	**1**	0	
Ophthalmologist	**1**	1	
ENT Specialist	**1**	1	
Psychiatrist	**1**	1	
Imagery Specialists	**2**	0	
Other (Specify)		4 Pediatricians	
Nurses	**86-132**	122	
Anesthesia Technicians (ISAR)	**5**	2	
Equipment Technicians	**6**	0	
Mental Health	**3**	3	
Dental	**2**	6	
Midwives	**16-22**	25	
Pharmacist	**6-8**	9	
Laboratory Technicians	**8-10**	21	
Radiology Technicians	**3**	1	
Kinetic Therapists	**3-4**	7	
Dietician		0	
Maintenance Technicians	**5-7**	0	
Electronic Engineer	**At least 1**	0	
Administrators	**4-6**	?	
Accountants	**2-4**	6	
IT Specialists	**2-4**	2	
Communication Officers	**2-3**	0	
Total	**80-118**	271	

Appendix 6: Baseline Survey Result: Medicines for DM/HT (June – July 2024)

BASELINE SURVEY RESULT: MEDICINES FOR DM/HT (JUNE-JULY 2024)

	Kang Meas RH	Steung Trang RH	Prey Chhor RH	Koh Soutin RH	Chamkar Leu RH	Batheay RH	Srey San-thor RH	Cheung Prey RH	Kampong Cham PH
	CPA 1 (MoPoTsyo)	**CPA 1**	**CPA 1**	**CPA 1**	**CPA 2 (MoPoTsyo)**	**CPA 2**	**CPA 2**	**CPA 2 (MoPoTsyo)**	**CPA 3**
Average number of NEW patients/months at DM clinic	0	21	NA	0	330	6	NA	20	81
Average number of FOLLOW-UP patients/month at DM clinic	0	38	NA	5	50	80	NA	400	1119
Pharmacy drugs management									
Ordering frequency of drug order	Monthly	Every 2-3 months	As needed	As needed	Monthly	As needed	Monthly	As needed	Weekly
Percentage of the total stock independently purchased by hospital	0%	20%	30%	<10%	10%	20-30%	25%	50%	30%
Medicines for Diabetes (Based on the Cambodia Essential Medicines List 10th Edition 2024)									
(V) (SN) Insulin, soluble (100IU/ml in 10ml vial)	× Never	× Never	× Never	× Never	× Never	× Never	× Never	× Never	✓(Few)
(V) (SN) Insulin, intermediate-acting (40IU/ml in 10ml vial)	× Never	× Never	× Never	× Never	× Never	× Never	× Never	× Never	×
(V) (SN) Insulin, intermediate-acting (100IU/ml in 3ml cartridge or pre-filled pen)	× Never	× Never	× Never	× Never	× Never	× Never	× Never	× Never	× (Only for children)

(V) (SN) Insulin, long-acting (100IU/ml in 3ml cartridge or pre-filled pen)	× Never	× Never	× Never	× Never	× Never	× Since 2yrs ago	× Never	× Never	× (Only for children)
(V) (SN) Premixed Insulin 70/30 (100IU/ml)	× Never	× Never	× Never	× Never	× Never	× Never	× Never	× Never	✓(Few)
(V) Metformin 500mg	✓	✓	✓	✓	✓	✓	✓	✓	✓
(V) Gliclazide 30mg	× Never	× Never	× Never	× Never	× Never	× Never	× Never	× Never	× Never
(V) Gliclazide 60mg	× Never	× Never	× Never	× Never	× Never	× Never	× Never	× Never	× Never
(V) Gliclazide 80mg	× Never	× Never	× Never	× Never	× Never	× Never	× Never	× Never	× Never
(N)(SN) Glibenclamide 5mg	× Never	✓	✓	✓	✓	✓	× Since May 2024	✓	✓
Medicines for Hypertension (Source: Essential Medicines List 10th Edition 2024) (V) Vital, (E) Essential, (N) Non-essential, (SN) Special Need									
(V) Amlodipine 5mg	✓	✓	× (Use Nifedipine 20mg)	✓	✓	✓	✓	✓	✓
(V) Atenolol 50mg	✓	✓	✓	✓	✓	✓	✓	✓	✓
(V) Bisoprolol 2.5mg	× Never	× Never	× Never	× Never	× Never	× Never	× Never	× Never	× Never
(V) Bisoprolol 5mg	× Never	× Never	× Never	× Never	× Never	× Never	× Never	× Never	× Never
(V) Enalapril 2.5mg	× Never	× Never	× Never	× Never	× Never	× Never	× Never	× Never	× Never
(V) Enalapril 5mg	× Never	× Never	× Never	× Never	× Never	× Never	× Never	× Never	×
(V) Enalapril 10mg	× Never	× Never	× Never	× Never	✓	× Never	× Never	× Never	✓
(V) Hydralazine 20mg	× Never	× Never	× Never	× Never	× Never	× Never	✓	× Never	×
(V) Hydralazine 25mg	✓	× Never	✓	× Never	✓	✓	× Never	✓	✓
(V) Hydrochlorothiazide 25mg	× Never	✓(50mg)	✓	✓(50mg)	× Never	✓	× Since 1yr ago	× Never	×

(N) (SN) Lisinopril + amlodipine 10mg + 5mg	× Never	× Never	× Never	× Never	× Never	× Never	× Never	× Never	×
(N) (SN) Lisinopril + hydrochlorothiazide 10mg + 12.5mg	× Never	× Never	× Never	× Never	× Never	× Never	× Never	× Never	×
(N) (SN) Lisinopril + hydrochlorothiazide 20mg + 12.5mg	× Never	× Never	× Never	× Never	× Never	× Never	× Never	× Never	×
(N) (SN) Lisinopril + hydrochlorothiazide 20mg + 25mg	× Never	× Never	× Never	× Never	× Never	× Never	× Never	× Never	×
(V) Losartan 25mg	× Never	× Never	× Never	× Never	× Never	× Never	× Never	× Never	×
(V) Losartan 50mg	× Never	× Never	× Never	× Never	× Never	× Never	× Never	× Never	✓Donation
(V) Methyldopa 250mg	× Never	✓	× Never	× Never	× Never	× Since >5 yrs ago	× Never	× Never	×
(N) (SN) Telmisartan + amlodipine 40mg + 5mg	× Never	× Never	× Never	× Never	× Never	× Never	× Never	× Never	×
(N) (SN) Telmisartan + amlodipine 80mg + 5mg	× Never	× Never	× Never	× Never	× Never	× Never	× Never	× Never	×
(N) (SN) Telmisartan + amlodipine 80mg + 10mg	× Never	× Never	× Never	× Never	× Never	× Never	× Never	× Never	×
(N) (SN) Telmisartan + hydrochlorothiazide 40mg + 12.5mg	× Never	× Never	× Never	× Never	× Never	× Never	× Never	× Never	×
(N) (SN) Telmisartan + hydrochlorothiazide 80mg + 12.5mg	× Never	× Never	× Never	× Never	× Never	× Never	× Never	× Never	×

(N) (SN) Telmisartan + hydrochlorothiazide 80mg + 25mg	× Never	× Never	× Never	× Never	× Never	× Never	× Never	× Never	×
Anti-platelet medicine									
(V) Acetylsalicylic acid 100mg	× Never	× Never	✓	× Never	✓	✓	✓	✓	✓
Lipid-lowering agent									
(V) Simvastatin	× Never	× Never	× Never	× Never	× Never	× Never	× Never	× Never	× Never

NA: not assessed or not available
Never: Never available in stock

BASELINE SURVEY RESULT: AVAILABILITY OF TEST AND EQUIPMENT FOR DM/HT (JUNE-JULY 2024)

	Kang Meas RH	Steung Trang RH	Prey Chhor RH	Koh Soutin RH	Chamkar Leu RH	Batheay RH	Srey San-thor RH	Cheung Prey RH	Kampong Cham PH
	CPA 1 (MoPoTsyo)	CPA 1	CPA 1	CPA 1	CPA 2 (MoPoTsyo)	CPA 2	CPA 2	CPA 2 (MoPoTsyo)	CPA 3
Essential equipment and test at DM clinic									
Blood pressure measuring device	✓	✓	✓	✓	✓	✓	✓	✓	✓
Glucometer	✓	✓	✓	✓	✓	✓	✓	✓	✓
Urinal strip test (Sugar, protein)	×	✓	✓	✓	✓	✓	✓	✓	✓
Reflex hummer	×	×	×	×	×	×	×	×	✓
Tuning fork	×	×	×	×	×	×	×	×	×
Monofilament	×	×	×	×	×	×	×	×	×
Fundoscopy	×	×	×	×	×	×	×	×	×
Laboratory management									
Ordering frequency of lab test reagents	As needed	As needed	Weekly	As needed	As needed	Monthly	Monthly	Monthly	Monthly
Percentage of the total stock independently purchased by hospital	100%	NA	NA	80%	15%	NA	25%	15 %	80%
Laboratory test for DM/HT									
HbA1c testing	× (reagent shortage)	× (reagent shortage)	× (reagent shortage)	✓	✓	✓	× (reagent shortage)	✓	✓
HbA1c test cost	NA	30,000 R	30,000 R	35,000 R	30,000 －40,000 R	30,000 R	40,000 R	35,000 R	35,000 R

Blood count (CBC)	✓	✓	✓	✓	✓	✓	✓	✓	✓
Blood gas analysis	×	×	×	×	×	×	×	×	×
Coagulation test	×	×	×	×	×	✓	×	×	×
Creatinine	✓	✓	✓	×	✓	✓	✓	✓	✓
Lipid profile (Cholesterol, LDL, HDL, Triglyceride) test	✓	✓	✓	✓	✓	✓	✓	✓	✓
Electrolytes test	×	×	× (reagent shortage)	×	×	✓	×	×	✓
Liver function test	✓	×	✓	✓	×	✓	✓	✓	✓
Troponin test	×	×	×	×	×	×	×	×	×
Immunoreactive Insulin (IRI)	×	×	×	×	×	×	×	×	×
C-peptide immunoreactivity	×	×	×	×	×	×	×	×	×
Anti-GAD Antibody	×	×	×	×	×	×	×	×	×
Medical Images									
X-ray	✓	✓	✓	✓	✓	✓	✓	✓	✓
CT-scan	×	×	×	×	×	×	×	✓	✓
MRI	×	×	×	×	×	×	×	×	×
Ultrasound	✓	✓	✓	✓	✓	✓	✓	✓	✓
Electrocardiography (ECG)	×	×	✓	×	×	✓	×	✓	✓

NA: Not Applicable

Appendix 8: The Record of the Workshop

The Record of

The workshop on reviewing baseline survey results of NCD program management and NCD service delivery in Kampong Cham.

Venue: Main Hall, Kampong Cham PHD

Date & Time: July 24th, 2024, 8:00 am-12:00 pm

Agenda: See Annex 1

Participants: See Annex 2 & 3

Facilitator: Dr. Chhun Loun

1. Welcome & Opening Remarks

1.1. Welcome remarks and keynotes by H.E. Dr. Kim Sour Phirun:

- ✓ He thanked all the guest honors, participants, and the JICA team for making the workshop possible. He also thanked the KCM health workers for their dedication, especially during the COVID-19 pandemic.
- ✓ He noted the previous focus on communicable diseases and emphasized the new mandate to address NCDs, which are now the main health concern. This shift is crucial for tackling diabetes, hypertension, and cervical cancer in Kampong Cham province.
- ✓ He also highlighted MoH/NCHP's recent health message, 'less salt, less fat, less sugar, daily exercises, and maintaining healthy weights to prevent NCDs. Effective health education can significantly reduce risk factors for diabetes and hypertension, and cervical cancer prevention is possible through proper guidance and vaccination efforts.
- ✓ He affirmed that Kampong Cham has the potential human resources to implement the NCD program.
- ✓ Concluding, he wished everyone longevity, Nobility, Health, and Strength, and invited H.E. Dr. Ngov Kang, Secretary of State/MoH, to deliver his remarks and guidance.

1.2. Opening remarks by Dr. Rei Haruyama

- ✓ She thanked everyone for attending the WS and mentioned that the JICA Project is honored to conduct the NCD Control Project under the leadership of H.E. Dr. Ngov Kang, Ministry of Health, along with Kampong Cham PHD, ODs, PH, and RHs.
- ✓ She emphasized that while strengthening HC and communities for the prevention and screening of NCDs is very important, it is also critical to simultaneously strengthen RHs and PH to diagnose and treat NCDs for those diagnosed with the disease and offer quality health service.
- ✓ She hoped that the audience would find the results of the baseline survey interesting and that they would discuss the way forward for improvement.

1.3. Opening remarks by H.E. Dr. Ngov Kang

- ✓ He welcomed PHD/OD directors, and guests, expressing his pleasure in attending the workshop on behalf of the Minister of Health. He highlighted the government's and MoH's focus on and thanked JICA for their NCD control project in Kampong Cham province, aligning with government/MoH strategies.
- ✓ He emphasized the workshop's significance in collaborating with the MoH to combat NCDs and expressed sincere gratitude to JICA for their contributions.
- ✓ He outlined MoH's commitment to provide screening and treatment for diabetes, hypertension and cervical cancer, including HPV vacations for 9-year-old girls.
- ✓ He announced the upcoming introduction of EMR in all health facilities to improve NCD patients tracking, medicines management, and overall healthcare.
- ✓ He identified two main priorities: preventing communicable diseases and enhancing healthcare professionals' capabilities.
- ✓ He encouraged PMD and PHD/OD/RH management to review and discuss the prioritize implementing NCD services in their facilities after this workshop.
- ✓ He mentioned the government's approval of an additional USD 11M for diabetes and hypertension drugs, urging PHD and ODs to monitor drug stock levels and strengthen emergency services. He hopes the extra budget to buy drugs will arrive in the 4th quarter of 2024 or the 1st quarter of 2025.
- ✓ He recommended the close collaboration among PMD, PHD, and ODs and reporting progress and challenges for intervention, coordination, and solution.
- ✓ He expressed hope for the success of this joint NCD control project in Kampong Cham province and encouraged its expansion to other provinces.
- ✓ Finally, he wished everyone good health and success in all their endeavors and officially started the workshop.

2. Presentation of Assessment Results

- See Presentation Slides in Annex 7

2.1. Dr. Aoyagi Kanako

2.2. Dr. Haruyama Rei

2.3. Dr. Yokobori Yuta

3. Group work discussion

- See group work composition in Annex 8

Group 1: Discussion Points & Results

1) Regarding Technical Group for NCDs with PHD/PH, what are the roles? And could RH staff be included in the Group?
   - Group discussion results:
   - ✓ PH (CPA3) chief of DM/HTN, and the chief of the maternity ward to be included, due to their technical experience that they can advise CPA 1 and CPA 2.
   - ✓ OD Directors, trainers from ODs, and RH staff should support supervision and close monitoring of all the trained staff and evaluate the skills that have been taught regularly.

2) What type of registry or tool should be appropriate to collect necessary data for NCDs, effectively and efficiently- e.g. No. of test, treatment, control, follow-up and referral, etc
   - Group discussion results:
   ✓ The first option is to use the existing recording book, adding a new column for new, old, and patients who stop receiving services.
   ✓ While waiting for EMR, use the first option as creating a new system is costly.

3) How do RHs avoid stock-out of necessary drugs & reagents? - e.g. Drugs including insulin, HbA1C, Glucometer Strips and HPV test
   - Group discussion results:
   ✓ Request from Central Medical Store (CMS)
   ✓ If the stock from CMS is still insufficient, use budget 62028 (H-EQIP2) to purchase the necessary drugs and test reagents.
   ✓ Calculate and estimate the stock needs based on monthly patient's number.
   ✓ Add columns for the patient age and sex as suggested by Batehay RH Director.

Group 2: Discussion Points & Results

1) What are the reasons HbA1c is not tested regularly (at least 6 months)? What are the solutions?
   - Group discussion results:
   ❖ Reasons:
   ✓ Lack of test reagent, high cost, and high patient volume.
   ✓ Some patients refuse to take the HbA1c test due to lack of knowledge.
   ❖ Solutions:
   ✓ Request development partners to support the test reagent, such as JICA
   ✓ Increase advocacy regarding the HbA1c test: What are the differences between the glucose and HbA1c tests, and why must they be monitored regularly?

2) At which levels of CPA should insulin be provided? (just CPA 3?)
   - Group discussion results:
   ✓ All CPA levels should have insulin.
   ✓ Around 40% of patients at PH needed insulin/month just for both young and elderly patients who have been diagnosed with DM for a long time and have complications like kidney failure and liver cirrhosis require insulin for treatment.
   ✓ Dr. Ra, Chief of NCD & CD PHD, questioned the participants whether we should have insulin in all CPA levels.
   ✓ All the CPA levels should have insulin, importantly, all health providers should be trained on insulin use, suggested by Director OD Srey Santhor.

Discussion results include question 1 & 2:

- ✓ Ensure HbA1C test reagents matches the available machine in all the health facilities for easy procurement, suggested by the Director OD Srey Santhor.
- ✓ Dr. Yokobori added that Batheay RH is a good example that we could follow. The Batheay RH uses the user fees to purchase and estimate the number of test reagent HbA1c that need to be collected monthly.
- ✓ Dr. Yokobori also added that insulin has 2 points that we need to discuss:
  - Maintain the temperature when storing insulin at the RHs.
  - Provide health education on the use of insulin.
  - Above are the two critical points that we need more discussion on.

3) Which DM complications assessment & treatment improvements should be prioritized?
   - Group discussion results:
   - ✓ 1st prioritisation should be Neuropathy/foot care
   - ✓ 2nd prioritization should be DM Retinopathy
   - ✓ 3rd prioritization should be Nephropathy
   - ✓ 4th prioritization should be CVD Risk
   - ✓ However, if possible, training should be provided to all health facilities so that all providers can assess and provide immediate treatment if they encounter those cases.

Group 3: Discussion Points & Results

1) Shall we consider introducing HPV test and taking the challenges?
   - Group discussion results:
   - ✓ HPV test should be used, due to accuracy of the results, and women can collect specimens by themselves.
   - ❖ Challenges:
     - Ensuring sufficient stock and affordability.
     - Efficient collection and transfer to the lab.
     - Increasing knowledge about HPV test procedures and accuracy.

2) Shall we conduct refresher training for thermal ablation to all RHs/PH?
   - ✓ Training should be provided to both existing and new staff.

3) Shall we procure and conduct training for LEEP at PH?
   - ✓ CPA 1 and 2 should refer cases to PH for LEEP if thermal ablation is ineffective.

   - ❖ Additional comment:
   - ✓ Close monitoring and health education for women, VHSG, and communities are necessary to increase awareness and encourage screening and treatment, added by Dr. Chab Chanthida, Vice Director of PHD responsible for MCH.

4. Way Forward: Reactivation and Enhancement of the NCD Working Group

Presented by Ms. Otaki Junko

- See Presentation Slides in Annex 4

❖ **Existing Structure**

✓ The PHD has an existing NCD committee* with five members.

✓ Current NCD working groups include CCS&T and DM/HT, led by Dr. Peang Nara and Mr. Ly Kimse respectively.

✓ Each group has a PH doctor as a member, adding personnel from RH is proposed to enhance the team.

❖ **Proposal for Reactivation**

✓ Activate the existing NCD Technical Group.

✓ Upon official formulation, develop TOR and activity planning, including training and supervisory visits.

❖ **Consensus Inquiry**

✓ Ms. Junko requested a consensus from the audience.

✓ Dr. Ra facilitated the audience's agreement to activate the NCD Technical Group.

❖ **Next Steps:**

✓ After the workshop, the PHD NCD Committee should convene meetings to officially formulate the NCD Technical Group.

** **Note:** During subsequent interactions with the PHD, it was clarified that there is no formal PHD NCD Committee in existence. Only the NCD Technical Group (TG) currently exists. The references to the NCD Committee and the need for reactivation in the workshop discussions reflect the understanding at the time and the proposal to strengthen the role of the TG moving forward. This applies to the presentation slides for NCD Program Management and the NCD Technical Group included in Annex 4 of this workshop record.*

5. Closing remark by H.E. Dr. Kim Sour Phirun

✓ He expressed his sincere gratitude to all the OD and RH chiefs, everyone involved in the NCD program, and the JICA team for their invaluable collaboration, emphasizing its significance for the program's success.

✓ He stressed the importance of regular meetings every 1 to 3 months to review the activities and tasks requiring further implementation and support, ensuring everyone contributes to the program's success.

✓ He mentioned the need for close monitoring and simultaneous training and tracking to strengthen practical skills, as discussed with Dr. Chab Chanthida.

✓ He confirmed that there are sufficient human resources and equipment for the NCD activities, including HbA1c and reagent tests. He raised concerns about sustaining reagent test after the JICA project but noted the government's (Budget 620228 (H-EQIP2), user fees) could help.

✓ He instructed RHs to inform Dr. Ra if they lack funds for reagent tests, emphasizing the need to investigate before allocating the budgets and urging self-reliance before seeking support.

✓ He mentioned a recent meeting with the MoH where additional budget requested for diabetes and hypertension drugs were discussed to prevent shortage.

✓ He concluded by encouraging hard work and collaborations, offering his support for any unresolved issues, and thanking everyone for their participation, wishing them good health and success.

Annex 1: Workshop Agenda

Workshop on Reviewing Baseline Survey Results of

NCD Program Management and NCD Service Delivery in Kampong Cham

Date: 24 July 2024 (Wed)

L**ocation:** Main Hall, Kampong Cham Provincial Health Department (PHD)

Time: 08:00 - 12:00

MC: Dr. Chuun Loun, Chief of NCD Bureau, Preventive Medicine Department, MoH

Agenda:

Time	Activity	Facilitator/Speaker
08:00 - 08:05	Welcome Remarks	H.E. Dr. Kim Sour Phirun, Director PHD
08:05 - 08:15	Opening Remarks	H.E. Dr. Ngov Kang, MoH Project Director of the NCD Control Project
08:15 - 08:25	Overview of the Joint NCD Control Project	Dr. Kol Hero, Director of the Preventive Medicine Department, MoH; Project Manager of the NCD Control Project
08:25 - 08:30	Baseline Survey Implementation	Ms. OTAKI Junko, JICA Technical Expert/Mr. Chuun Chanrith, Technical Assistant
08:30 - 08:50	Presentation of Assessment Results: Diabetes & Hypertension (DM/HT)	Dr. AOYAGI Kanako, NCGM/ Ms. ROS Vetey, Technical Assistant
08:50 - 09:10	Presentation of Assessment Results: Cervical Cancer Screening & Treatment (CCS&T)	Dr. HARUYAMA Rei, Chief Advisor to the JICA NCD Control Project /Ms. ROS Vetey, Technical Assistant
09:10 - 09:30	Presentation of Assessment Results: NCD Program Management	Dr. YOKOBORI Yuta, NCGM/Mr. Chuun Chanrith, Technical Assistant
09:30 - 09:45	Tea Break	
09:45 - 09:55	Q&A	Ms. OTAKI (Ms. Vetey) & JICA Team
09:55 – 10:00	Group Work Instruction	PHD NCD Team
10:00 - 10:45	Group Work - Group 1: PHD Director + OD Directors + 3 Hospital Directors - Group 2: 3 Hospital Directors + Chiefs DM/HT or OPD - Group 3: 3 Hospital Directors + Chiefs Maternity	PHD NCD Team
10:45 – 11:30	Presentation of the Discussion Result (10 mins/group)	3 Groups
11:30 – 11:45	Proposal & Way Forward	Ms. OTAKI (Ms. Vetey) & JICA Team
11:45 – 12:00	Closing Remarks	H.E. Dr. Kim Sour Phirun, Director PHD

Annex 2: Scheduled Attendees

	Facility	Participant	Total Number
1	PMD, MoH	H.E. Dr. Ngov Kang, Dr Kol Hero, Dr. Chuun Loun	3
2	PHD	Director, Vice Director (NCD), NCD Team: Dr Ra, Mr Ly Kimse(DMHT), Dr. Peang Nara (CCST)	5
3	OD Chamkar Leu	Director	1
4	OD Batheay	Director	1
5	OD Cheung Prey	Director	1
6	OD Srey Santhor	Director	1
7	OD Steung Trang	Director	1
8	OD Prey Chhor	Director	1
9	OD Kang Meas	Director	1
10	OD Koh Soutin	Director	1
11	(CPA 3) KC Provincial Hospital	Director, Chief DMHT, Chief Maternity	3
12	(CPA 2) Chamkar Leu RH	Director, Chief DMHT (or OPD), Chief Maternity	3
13	(CPA 2) Batheay RH	Director, Chief DMHT (or OPD), Chief Maternity	3
14	(CPA 2) Cheung Prey RH	Director, Chief DMHT (or OPD), Chief Maternity	3
15	(CPA 2) Srey Santhor RH	Director, Chief DMHT (or OPD), Chief Maternity	3
16	(CPA 1) Steung Trang RH	Director, Chief DMHT (or OPD), Chief Maternity	3
17	(CPA 1) Prey Chhor RH	Director, Chief DMHT (or OPD), Chief Maternity	3
18	(CPA 1) Kang Meas RH	Director, Chief DMHT (or OPD), Chief Maternity	3
19	(CPA 1) Koh Soutin RH	Director, Chief DMHT (or OPD), Chief Maternity	3
20	JICA Team	Chief Advisor, Experts including Dr Nozaki	9
		Total Number	**52**

Annex 3. Confirmed Attendees

NCD Control Project

Attendance List Meeting: Assessment Feedback Workshop in KCM Date: 24 July, 2024

	Full Name	Organization	Position	Signature
1	HE. Dr. Ngov Kang	Ministry of Health	Secretary of State	
2	Dr. Kol Hero	Ministry of Health	Director of PMD	
3	Dr. Chuun Loun	Ministry of Health	Chief of NCD	
4	Dr. Kimsour Phirun	KCM PMD	Director of KCM PMD	
5	Dr. Sarak Muny	KCM PMD	Vice Director of NCD Program	
6	Dr. Hay Ra	KCM PMD	Chief of NCD Bureau	
7	Dr. Peang Nara	KCM PMD	Deputy Chief in Charge of CC	
8	Mr. Ly Kimse	KCM PMD	NCD team in Charge of DM/HTN	
9	Dr. Seng Darakropom	Kampong Siem OD	Director	Absent
10	Dr. Chea Eakchhay	Chamkar Leur OD	Director	
11	Dr. Pring Kimchhor	Batheay OD	Director	
12	Dr. Chhai Sopharat	Cheung Prey OD	Director	
13	Dr. Heng KimAn SAN	Srey Santhor OD	Director	
14	Dr. Yim Navy	Steung Trang OD	Director	
15	Dr. Chheurn Vanthorn	Prey Chhor OD	Director	
16	Dr. Eung Chiheang	Kang Meas OD	Director	
17	Dr. Heng Phalkun	Koh Soutine OD	Director	
18	Prof. Yin Sinat	KCM Provincial Hospital	Director	(57)
19	Dr. Kong Sopharin	KCM Provincial Hospital	Chief DM/HT	(58)
20	Dr. Uch Sokrathavy	KCM Provincial Hospital	Chief Maternity	(56)
21	Dr. Tan Kimchheng	Chamkar Leu RH	Director	
22	Dr. Heng Ly	Chamkar Leur RH	Chief DM/HT	
23	Dr. Thai Soklen	Chamkar Leu RH	Chief Maternity	
24	Dr. Toch Hout	Batheay RH	Director	
25	Dr. Vor Thim	Batheay RH	Chief DM/HT	
26	Dr. Krouch Satya	Batheay RH	Chief Maternity	
27	Dr. Luy Sen	Cheung Prey RH	Director	
28	Dr. Taing Kimsron	Cheung Prey RH	Chief DM/HT	
29	Dr. Kouk Narith	Cheung Prey RH	Chief Maternity	
30	Dr. Mao Bunleng	Srey Santhor RH	Director	

31	Dr. Chhit Chanborey	Srey Santhor RH	Chief DM/HT	[signature]
32	Dr. Yin Chheang Hong	Srey Santhor RH	Chief Maternity	[signature]
33	Mr. Kleat Teng	Steung Trang RH	Director	[signature]
34	Dr. Chang Chheang Chhun	Steung Trang RH	Chief DM/HT	[signature]
35	Dr. Eang Chheng Houy HUOY	Steung Trang RH	Chief Maternity	[signature]
36	Dr. Loung Savuy	Prey Chhor RH	Director	[signature]
37	Dr. ~~Im Phanna~~ OUK VIRYA	Prey Chhor RH	Chief DM/HT	[signature]
38	Dr. Khun Sothyro	Prey Chhor RH	Chief Maternity	[signature]
39	Dr. Keophun Sokhana	Kang Meas RH	Director	[signature]
40	Dr. Pich Ratana	Kang Meas RH	Chief DM/HT	[signature]
41	Dr. Chao Vannarong	Kang Meas RH	Chief Maternity	[signature]
42	Dr. Huy Sreypoav	Koh Soutine RH	Director	[signature]
43	Dr. Hat Sotna Hath Sopheakna	Koh Soutine RH	Chief DM/HT	[signature]
44	Dr. Chin Darith	Koh Soutine RH	Chief Maternity	[signature]
45	Dr. Haruyama Rei	JICA	Chief Advisor	[signature]
46	Dr. Yokobori Yuta	JICA	JICA Expert	[stamp] 横堀
47	Dr. Aoyagi Kanako	JICA	JICA Expert	Kanako
48	Ms. Otaki Junko	JICA	Technical Expert	Otaki
49	Mr. Ogasawara Tadashi	JICA	Project Coordinator	[stamp]
50	Mr. Chhun Chanrith	JICA	Techinical Assistant	[signature]
51	Ms. Ros Vatey	JICA	Technical Assistant	[signature]
52	Mr. Chheth Yuswa	JICA	Admin Assistant	[signature]

53 Va Savuth KCM PHD [signature]

54 LAN POLIN Srey Santhor (ស្រីសន្ធរ) [signature]

55. You Kosol OD [illegible] [illegible] [signature]

56. ZEANG EANG HOR KCRH [signature]

57. MEY MONIBORIN KCM.PH Deputy Director [signature]

58. HEAN RAVY Kompong cham Diabetes [signature]

59. Ms. Sinath Chakriya KCM PHD Staff [signature]

60. Chab Chandhida KCM PHD Deputy Director [signature]

61. SIM THEARA PHD-IT Staff Theara

62. Im Phanna Prey Chhor RH Chief DM [signature]

[illegible] KCM PHD [illegible] [signature]

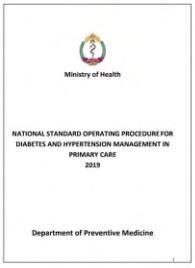
Annex 4: Presentation of Assessment Results

DM/HT Screening & Treatment, Presented by Dr. Aoyagi Kanako

Joint NCD Control Project

Baseline survey results:
Diabetes/Hypertension
screening & treatment services

SOP for Diabetes and Hypertension



- Perform further investigation to confirm diagnosis, address complications, and initiate treatment
- Manage the complicated cases

RH/PH

- Cases without complication
- Technical support
- Monitoring visits

- Suspected cases of diabetes
- Complicated hypertension

Health Center

Clinical practice guideline type2 diabetes

Diagnosis: Glu, HbA1c

↓

Treatment

1. Diet therapy
2. Exercise
3. Medication: Metformin, Glibenclamide, Insulin

↓

Follow up: Glu, HbA1c (At least every 6 months)

Clinical practice guideline type2 diabetes

Complication Assessment

1. DM Neuropathy/Foot (First visit, At least one year)
2. DM Retinopathy (First visit, Every 1-2 years)
3. Nephropathy: Proteinuria, Cre (First visit, annually)
4. CVD (First visit, annually)
5. Teeth inspection (First visit, annually)

Baseline survey result: Blood sugar control

by	Kang Meas RH	Steung Trang RH	Prey Chhor RH	Koh Soutin RH	Chamkar Leu RH	Batheay RH	Srey San-thor RH	Cheurng Prey RH	Kampong Cham PH
	CPA 1	CPA 1	CPA 1	CPA 1	CPA 2	CPA 2	CPA 2	CPA 2	CPA 3
Glucometer	✓	✓	✓	✓	✓	✓	✓	✓	✓
HbA1c	-	-	-	✓	✓	✓	-	✓	✓
Metformin	✓	✓	✓	✓	✓	✓	✓	✓	✓
SU	-	✓	✓	✓	✓	✓	✓	✓	✓
Insulin	-	-	-	-	-	-	-	-	✓ sometimes no
Patient referred from RH									1-2/month

- Glucometer is available at all RHs/PH
- HbA1c cannot be tested at some RHs.
- Insulin is not available at RHs, and only sometimes used at PH
- The number of patients referred to PH from RH is only 1-2/month.

Baseline survey result: DM Neuropathy /DM foot

	Kang Meas RH	Steung Trang RH	Prey Chhor RH	Koh Soutin RH	Chamkar Leu RH	Batheay RH	Srey San-thor RH	Cheurng Prey RH	Kampong Cham PH
	CPA 1	CPA 1	CPA 1	CPA 1	CPA 2	CPA 2	CPA 2	CPA 2	CPA 3
DM foot Guideline	-	-	✓	-	-	✓	-	-	✓
Routine check	-	✓	✓	-	-	-	-	✓	✓
Tendon reflex	-	-	-	-	-	-	-	-	✓
Tuning fork	-	-	-	-	-	-	-	-	-
Monofilament	-	-	-	-	-	-	-	-	-
Foot ulcer treatment	-	-	-	-	-	-	-	-	✓ (Infectious Disease doctor)

- There is no equipment for proper assessments of DM foot at RHs
- Foot ulcer treatment/care is provided only at PH.

Baseline survey result: Retinopathy

	Kang Meas RH	Steung Trang RH	Prey Chhor RH	Koh Soutin RH	Chamkar Leu RH	Batheay RH	Srey San-thor RH	Cheurng Prey RH	Kampong Cham PH
	CPA 1	CPA 1	CPA 1	CPA 1	CPA 2	CPA 2	CPA 2	CPA 2	CPA 3
Ophthalmologist	-	-	-	-	-	-	-	-	✓
Routine check	-	-	-	-	-	-	NA	-	✓
Fundoscopy	-	-	-	-	-	-	-	-	-
Slit Lump+ 90OD	-	-	-	-	-	-	-	-	✓
Retinal imaging	-	-	-	-	-	-	-	-	-
Laser	-	-	-	-	-	-	-	-	-

- There is no equipment to check and treat retinopathy.

Baseline survey result: Nephropathy

	Kang Meas RH	Steung Trang RH	Prey Chhor RH	Koh Soutin RH	Chamkar Leu RH	Batheay RH	Srey San-thor RH	Cheurng Prey RH	Kampong Cham PH
	CPA 1	CPA 1	CPA 1	CPA 1	CPA 2	CPA 2	CPA 2	CPA 2	CPA 3
Routine check	-	-	-	-	-	-	✓	-	✓
Proteinuria	-	✓	✓	✓	✓		✓	✓	✓
BUN/Cre	✓	✓	-	✓	✓	✓	✓	✓	✓
Potassium	-	-	-	-	-	✓	-	-	✓
ACE/ARB	-	-	-	-	✓	✓	-	-	✓

- Blood and urine tests for nephropathy is available at most RHs, but not done routinely
- ACE/ARB are not available at some RHs.

Baseline survey result: CVD risk

	Kang Meas RH	Steung Trang RH	Prey Chhor RH	Koh Soutin RH	Chamkar Leu RH	Batheay RH	Srey San-thor RH,	Cheurng Prey RH	Kampong Cham PH
	CPA 1	CPA 1	CPA 1	CPA 1	CPA 2	CPA 2	CPA 2	CPA 2	CPA 3
Routine check	-	-	✓	-	-	-	-	-	-
Lipid profile	✓	✓	✓	✓	✓	✓	✓	✓	✓
Troponin T	-	-	-	-	-	-	-	-	-
ECG	-	-	✓	-	-	✓	-	✓	✓

- Blood test to check lipids is available at all RHs/PH.
- There are a few ECGs in RHs/PH.

Services provided at **RH**

Diagnosis (Glu, HbA1c)

↓

Treatment

1. Diet therapy
2. Exercise
3. Medication
   Metformin, Glibenclamid
   Insulin

Follow-up (Glu, HbA1c)

Services provided at **PH**

Diagnosis (Glu, HbA1c)

↓

Treatment

1. Diet therapy
2. Exercise
3. Medication
   Metformin, Glibenclamid
   Insulin

Follow-up (Glu, HbA1c)

Services provided at **RH**

Complication Asessment

1. ~~DM Neuropathy/Foot~~
2. ~~DM Retinopathy~~
3. Nephropathy

Services provided at **PH**

Complication Asessment

1. DM Neuropathy/Foot
2. ~~DM Retinopathy~~
3. Nephropathy

Challenge

- Service offered at RHs is limited to glucometer and oral medicine.
  - HbA1c is not tested regularly
  - Insulin cannot be prescribed
  - Screening of complications is not done regularly
- Service provided at PH is also very limited
  - HbA1c is not tested regularly
  - Insulin is available, but stock is limited for adult patients
  - Screening of complications is not done regularly
  - Treatment of complication is limited to DM foot ulcers (antibiotics, amputation)
  - Only 1-2 patients are referred from RHs to PH

Why is it important to test HbA1c regularly?

- HbA1c reflects average levels of blood glucose over **the previous two to three months.**
- The test is **an essential tool for assessing glycemic control** and **has strong predictive value for diabetes complications**
- HbA1c **should be measured at least 6 months** with a target of **<7.0%** (in accordance with the national guideline)

Reagent/test kit is expired or gone.

Discussion points

- What are the reasons HbA1cis not tested regularly (at least 6 months)? What are the solutions?
- At which levels of CPA should insulin be provided? (just CPA 3?)
- Which DM complication assessment & treatment improvements should be prioritized?
  1. DM Neuropathy/Foot
  2. DM Retinopathy
  3. Nephropathy
  4. CVD risk

Frequency of HbA1c test at PH

Patient	First visit	1 month	2 month	3 month	4 month	5 month	6 month	7 month	8 month	9 month	10 month	11 month	12 month
Patient A	×	×	×	×	×	×	×	×	×	×	×	×	
Patient B	8.0		×	×	×								
Patient C	7.2	×	×	×	×	×		×		×		×	
Patient D	7.3	×		×		×							
Patient E	×		×		×								
Patient F	13.3	×	12	×	×	×	9.2	×	×	×			
Patient G	6.1	×	×	×	×				×				
Patient H	×		×	×	×	×	×	×	×	×			
Patient I	×	×		×	×	8.4	×						
Patient J	×	×	×	9.0	×								

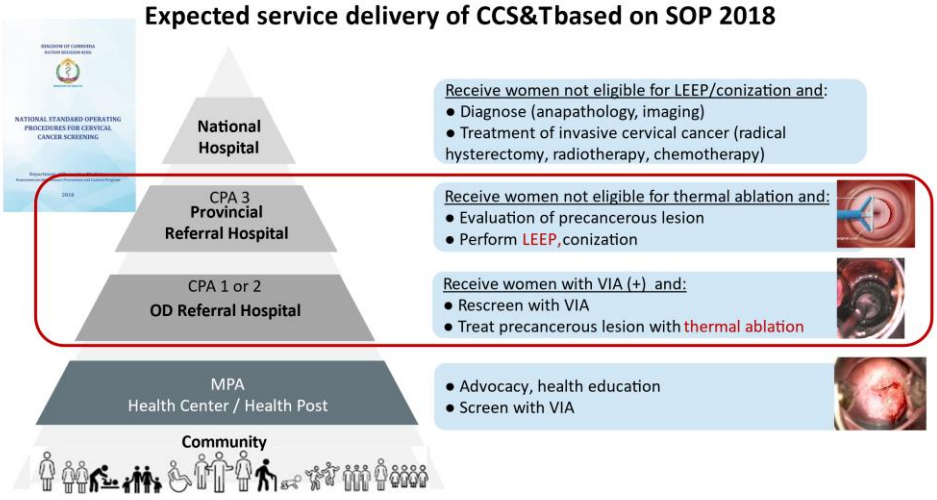
Annex 4: CCS&T, Presented by Dr. Haruyama Rei

Joint NCD Control Project

Baseline survey results:
cervical cancer screening & treatment (CCS&T)

Cervical Cancer is a cancer that can be prevented nearly 100%

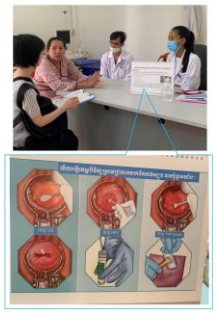
Expected service delivery of CCS&Tbased on SOP 2018



Baseline survey result: service availability and use (June 2024)

	Kang Meas RH	Steung Trang RH	Prey Chhor RH	Koh Soutin RH	Chamkar Leu RH	Batheay RH	Srey San-thor RH	Cheung Prey RH	Kampong Cham PH
	CPA 1	CPA 1	CPA 1	CPA 1	CPA 2	CPA 2	CPA 2	CPA 2	CPA 3
SOP 2018	✓	×	×	✓	✓	×	✓	✓	×
Materials for VIA	✓	✓	✓	✓	✓	✓	✓	✓	✓
Thermal ablation	✓ (Liger)	✓ (Liger)	✓ (Wisap)	✓ (Liger)	✓ (Wisap)	✓ (Wisap)	✓ (Liger)	✓ (Wisap)	✓ (Liger)
Colposcopy	×	×	×	×	×	×	×	×	× (broken)
LEEP	×	×	×	×	×	×	×	×	×
VIA-trained MW	2	2	5	2	5	1	2	4	4
TA-trained Dr	2	2	3	2	1	0	2	3	4
VIA price	10,000 R	0 R	20,000 R	0 R	20,000 R	15,000 R	40,000 R	-	0 R
TA price	10,000 R	0 R	20,000 R	0 R	20,000 R	NA	80,000 R	-	0 R
VIA/month	< 1 (+2 f/u)	NA	2 (+2 f/u)	0	2 (+1 f/u)	3 (+2 f/u)	10	0	10 (+3 f/u)
Thermal ablation /month	0	0	1	0	0	0	0	0	1
Referral/month	0	NA	0-2	0	0	0	0	0	NA

Baseline survey result: service availability and use (June 2024)

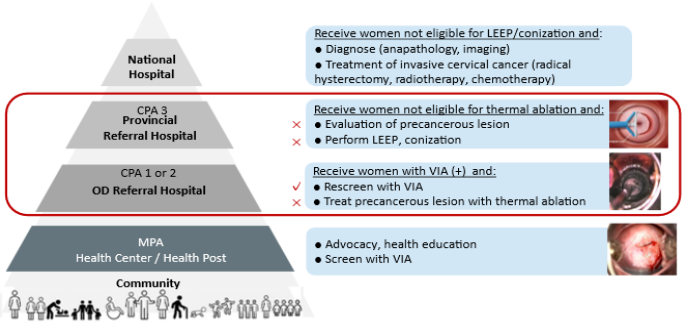


Good educational flipcharts are available

Basic materials are available

Thermal ablation device is available but never/rarely used

Currently the capacity of CCS&T at RHs and PH is very limited



Strengths and Challenges

1. Women do not know or feel embarrassed about cervical cancer screening (VIA) and do not come to hospitals

   There are approximately 50,000 women aged 30 -49 years in K Cham. If women were to be tested at age 30 and 40, to reach the screening target of 70% at least 3500 women need to be tested every year

1. At all RH, VIA is available, but some midwives do not have experience/confidence
2. At all RHs, thermal ablation is available, but some doctors have not had practical training
3. At PH, LEEP is not available (PH can only do the same treatment as RHs)

Baseline survey results: Expectation to the NCD Control Project (June 2024)

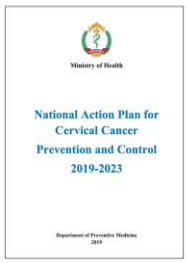
	Kang Meas RH	Steung Trang RH	Prey Chhor RH	Koh Soutin RH	Chamkar Leu RH	Batheay RH	Srey San-thor RH	Cheurng Prey RH	Kampong Cham PH
	CPA 1	CPA 1	CPA 1	CPA 1	CPA 2	CPA 2	CPA 2	CPA 2	CPA 3
Expectation to the NCD Control Project	-To have refresher training on CCST (midwives: VIA, doctors: TA)	- To provide training on Pap smear to attack more patients to come to have screening - To have ultrasound machines that are good quality and last longer	- To providing proper training for midwives - To procure additional medical equipment such as colposcopy devices	- To provide refresher training (TA for the doctors and screening, counseling for midwives)	- To have CCS to function in the hospital. -To include CCS in the health education at HCs.	-To have more training on CCST -To have refresher training -To have more staff assist in CCS	-To train other midwives - To provide refresher training for doctors on Pap smear, HPV test and TA. - To have a new set of medical equipment for CCS.	NA	-To provide training for staff such as: colpo-scopy, Pap smear, HPV test. - To increase advocacy on benefit of CCS

What training and equipment for
1) Cervical cancer screening
2) Precancer treatment
will be most beneficial to Kampong Cham and Cambodia?

There are 3 methods of cervical cancer screening

	Procedure	Strengths	Limitations
Visual inspection with acetic acid (VIA)	A provider examines the cervix to visualize cell changes on the cervix.	•Relatively simple and inexpensive •The results are available immediately •Infrastructure requirements are minimal	•Interpretation of the result is subjective; accuracy can be low by inexperienced provider (sensitivity: 22-91%, specificity:47-99%) •VIA is not appropriate for many postmenopausal women
HPV test	A provider or woman herself takes a cervical specimen, store in an appropriate container and send to laboratory	•Collection of the specimen is simple, allowing self-sampling •Accuracy is relatively high (sensitivity: 89-96%, specificity:81-90%)	•Transportation is required for specimens to the laboratory and for results back to women later •Supplies and equipment are required in laboratory •The unit cost can be high
Pap smear	A provider takes a cervical specimen using a spatula, fix it onto slides and send to a laboratory to be examined by a trained cytotechnician	•Widely used in high-resource settings	•Transportation is required for specimens to the laboratory and for results back women later •Clinical and laboratory quality control and quality assurance are required and difficult to maintain •Interpretation of the result is subjective •The unit cost can be high

MoH plans to gradually introduce HPV test-based cervical cancer screening


Ministry of Health

National Action Plan for Cervical Cancer Prevention and Control 2019-2023

Department of Preventive Medicine 2019

Page 10

Strategic Objective 2.2: To prevent cervical cancer by providing screening and treatment of cervical precancer services and planning for incremental coverage		
To introduce HPV DNA test as a primary screening test for population-based screening after piloting the HPV DNA test in selected OD exploring the possibility of self-collected samples including acceptability and feasibility studies of self-collected samples.	2022	DPM/MOH


KINGDOM OF CAMBODIA

Cancer Control Capacity and Needs Assessment Report

Benefits and challenges to introduce HPV test for cervical cancer screening

Benefits	Challenges
• Accuracy is much higher than VIA (If HPV test is negative, women are free of cervical cancer for at least 5 years)	• Need to deliver specimens from RHs to PH
• Women can collect samples by herself (Women will be less embarrassed)	• Need to deliver test results from PH to RHs
• Much easier to calculate cervical cancer screening rate and test positivity rate	• Need to find a sustainable financing mechanism (maintenance of machine and procurement of reagents/consumables)

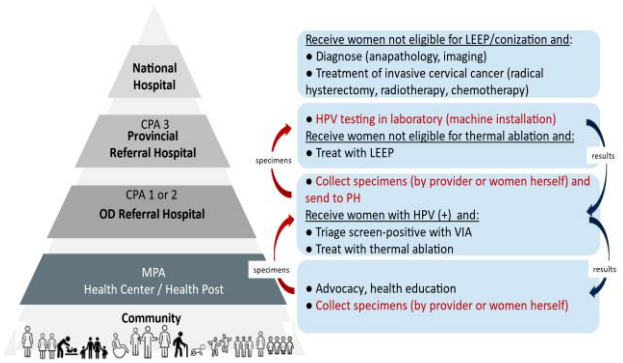
Discussion Points

1) Shall we consider introducing HPV test, taking the challenges?

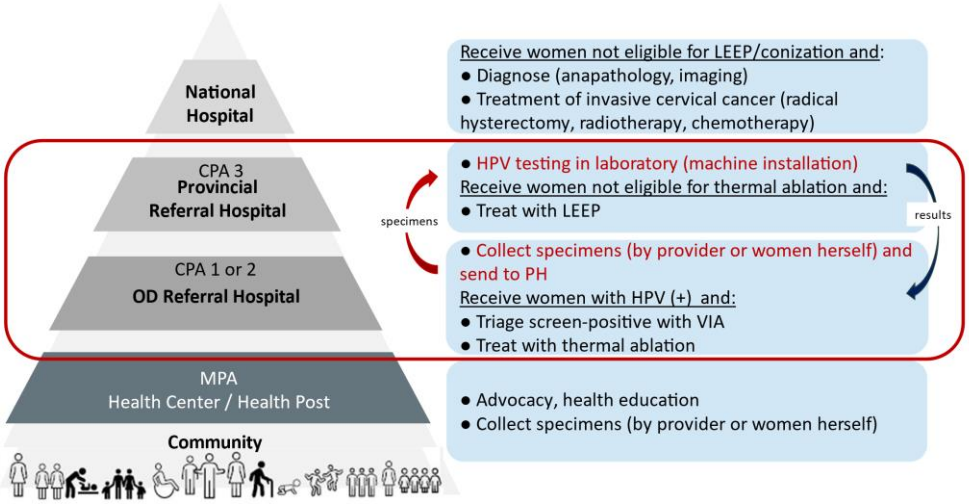
2) Shall we conduct practical training for thermal ablation at RHs/PH?

3) Shall we procure and conduct training for LEEP at PH?

Future vision



Short-term focus



Proposed activities

TARGET : Doctors and midwives at selected KCM RHs/PH
*RHs may be selected from those that have not received CCST training under H-EQIP2

INTERVENTION:
- Training on cervical cancer and HPV test to all doctors and midwives
- Refresher training on thermal ablation (practical) to doctors at RHs/PH
- Advanced training on HPV test assay techniques to laboratory staff and LEEP to doctors and at PH

*These trainings may be done by MoH, SCGO and JICA

Images

Proposed indicators

PROCESS INDICATORS:
- Number (proportion) of doctors and midwives receiving training on cervical cancer and HPV test
- Number (proportion) of doctors receiving training on thermal ablation
- Number (proportion) of doctors receiving training on thermal ablation

OUTCOME INDICATORS
- Percentages of RHs/PH that can provide HPV testing (provider/self-sampling, counseling, sending tests to PH laboratory)
- Number (proportion; screening rate) of women aged 30 and 40 receiving HPV test-based cervical cancer screening in selected ODs
  *Screening campaign will need to be conducted (using video, etc.)

Annex 4: NCD Program Management, Presented by Dr. Yokobori Yuta

Results of baseline survey Management Part

Findings from Baseline survey

Governance Structure
- PHD: NCD Committee of 5 member from NCDs and finance Dep
- OD: 2 staffs in charge of NCDs as the part of Technical Bureau

Annual Operational Plan(AOP) and Budget
- Currently, no AOPs specific for NCDs are developed in PHD and OD. However, each OD has intentions to add NCDs budget in AOPs which is supposed to be submitted in this December.
- H-EQUIP2 started disbursement of fund for RH every 3 months (450 M for CPA1, 500M for CPA2 and 550M for CPA3). RH could cover insufficient amount of medicine and reagent for NCDs services including DM/HT/CC

Findings of Baseline Survey, cont'd

Supply of Medicine and Reagent for NCDs
- Most of NCD medicines has enough stock. However, some of medicine and HbA1C reagent is stocked out. Insulin and reagent of HbA1C has not been requested from RH/OD so far. These items are considered to be purchased by RH budget.

Data for NCDs
- Only the number of patients are available for NCDs services in HC1 and HO2 of HMS

Supervision for NCDs
- Some ODs conduct supervision visit to HCs by using monitoring checklist in SOP PEN. However, others has not done it yet because of limited available resources.
- OD and RH hold the monthly meeting to review the performance of general health services in RH including NCDs.

Challenges and Strengths

Strengths
- PHD has established NCD committee
- There are several experienced Technical Staffs
- RHs regularly receive funding from H-EQUIP2

Challenges
- No AOP is developed for NCDs in OD/RH
- Available Data is limited for NCDs
- Limited supervision visits for NCDs

Recommendation 1: Governance Structure

PHD (NCD Committee)
- Development and monitoring of AOP
- Supervision for OD/RH
- Organization of training for NCDs

OD (Staff in charge of NCDs)
- Supervision for RH/HC
- Facilitation of linkage between RH -HC

PH/RH
- Management of NCD related medicines, tests and medical equipment.
- Provision of quality services for DM/HTN/CC
- Data collection, compilation and report

Since NCDs are relatively new, advises from specialists are crucial!!

Technical Group among Technical Staffs from PHD/PH/RH
- DM/HTN
- CC

Technical input for
- AOP
- Supervision
- Data management

※Reference: SOP 2024

Recommendation 2 : Annual Operational Plan

AOPs for NCDs should be develop and implemented in each level
- PHD: Training and Supervision on OD/RH
- OD: Supervision on RH/HC
- RH: **Effective and Efficient use of H -EQUIP2 funding is crucial** to improve NCDs services. Especially, budgeting for medicines, diagnostic tests and medical equipment could be included in AOPs in RH based on the estimations

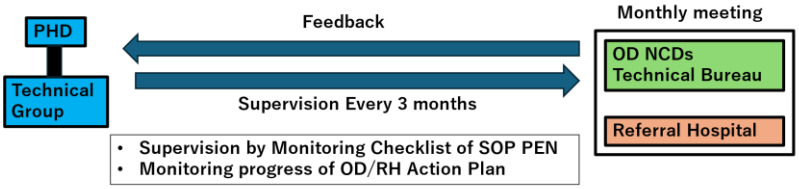
<Example of estimations>

Rough estimates cost of DM drug and HbA1C reagents (USD)

	Koh Soutin	Batheay	Cheung Prey	Chamkar Leu
RH No.of DM patient in the last 6 months	42	1000	40	587
Cost of DM Drug for 6 months	273USD	6488USD	260USD	3809USD
Cost of HbA1C for 6 months(test every 3 months)	252USD	6000USD	240USD	3522USD
Total cost per month	**87USD**	**2081USD**	**83USD**	**1221USD**

※ Assumption that all costs would be covered by RH

Recommendation 3 : Supportive Supervision



- **Supervision by Monitoring Checklist of SOP PEN**
- **Monitoring progress of OD/RH Action Plan**

Review "Monitoring Checklist" and propose the revisions if necessary, at end of project

<SOP PEN>
- PHD should conduct supportive supervision to all ODs and hospitals in the first quarter after training, and selected ODs and RHs on a quarterly basis from the subsequent quarters to discuss implementation progress
- PHD should conduct program annual review to review implementation progress and set actions and target for subsequent year

Recommendation 4: Data management

NCDs related indicators in Cambodia

SOP PEN

% of Screening, Diagnosis, Treatment, Follow -up, Drop-off of NCDs

National Strategic Plan of NCDs 2022-2030

% of Treatment and Control of NCDs
Availability of NCDs related Drug

Data management, cont'd

Considering indicators, following data needs to be collected in addition to HC1/HO2 of HMS

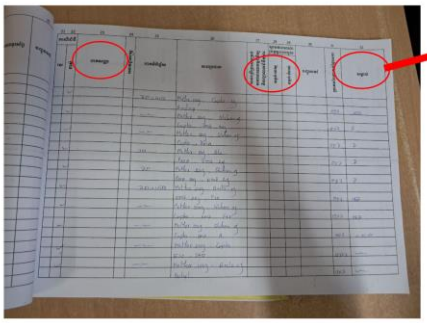
1. No. New Case and Follow-up Case
2. No. Test and Diagnosis
3. Severity
4. No. Treatment
5. No. Control Case
6. No. Referral
7. No. of Drop-off
8. No. of Complication Screening/Treatment
9. Availability of Drug, Reagents, Medical Equipment

- **Red could be collected from existing OPD Registry**
- **Blue needs to be collected from medical record**
- **Green should be reported from responsible Deps**

- While we wait for EMR, methods of data collection needs to be discussed.
  - Option1 Addition of extra column in OPD registry
  - Option2 Creation of new paper -based registry
  - Option3 Introduction of electrical medical system like Batheay RH
- Registry should be simple and targeted to necessary indicators to avoid direct data collection from medical record, considering the work -load of data clerks.

Example: Option 1

OPD Registry



To make several lines in large or not - in-use column

Remark	
BP	HbA1C

New line

To add following items
- BMI
- Smoking History
- Blood Pressure
- Blood Sugar (Fasting or Casual)
- HbA1C
- Complication Screening

Group Work Questions

Discussion Points

- Regarding Technical Group for NCDs with PHD/PH, what are the roles? And could RH staffs be included in the Group?
- What type of registry or tool should be appropriate to collect necessary data for NCDs, effectively and efficiently
  e.g. No. of test, treatment, control, follow -up and referral, etc
- How do RHs avoid stock-out of necessary drugs & reagents?
  e.g. Drugs including insulin, HbA1C, Glucometer Strips and HPV test

Example Option 2

No	ID	Name	1st Visit						2nd Visit	
			Date	BP	BS	HbA1C	Tx*	Comp*	Date	BP

*Tx: treatment, Comp: Complication Screening

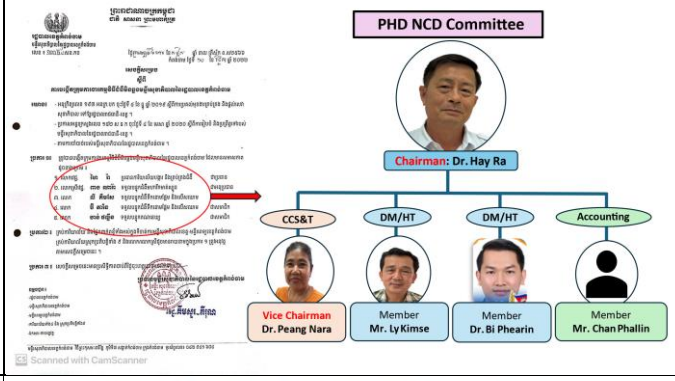
New registry is created by patients.
This has a benefit that drop -out can be investigate, compared with option 1.
However, disadvantage is additional workload on data clerks

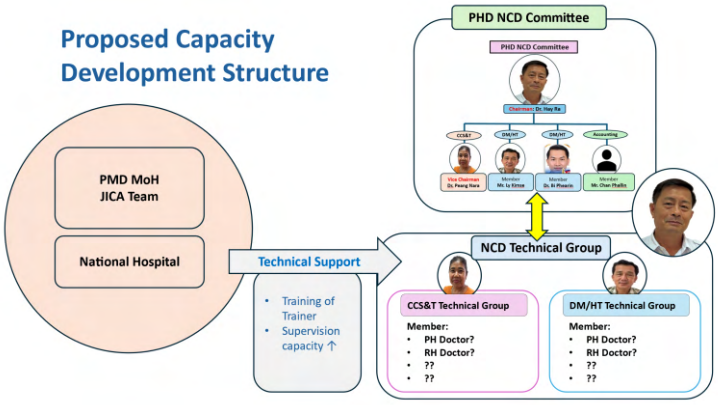
Candidate Indicators to evaluate RH performance

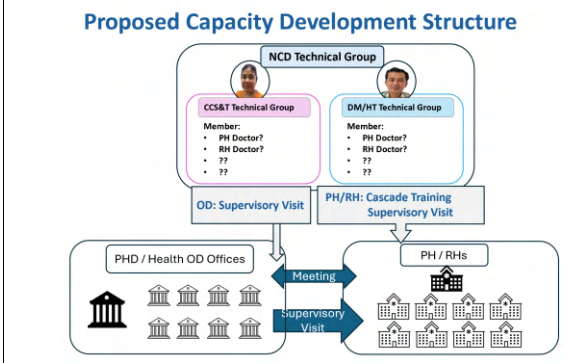
Red could be evaluated by option 1

Candidate Indicators		Details
General OPD		
0	% of Screening	No. of BP or BS test / No of patients aged >=40 years
HTN/DM OPD		
1	No. of New Cases (HTN/DM)	(※) To be careful to avoid double-count of patients who come more than twice per month.
2	No. of Follow-up (HTN/DM)	
3	% of Tests	No. of patients with test(HbA1C) among ("1" and/or "2")
4	% of Treatment	No. of patients with treatment for "HTN" or "DM" among ("1" and/or "2")
5	% of Control	No. of patients with normal BP or BS / HTN or DM of "4"
6	% of Referral	No. of Referral / Eligible patients for the referral criteria
7	% of Drop-out	Difficult to obtain by existing HMIS
8	% of Complication Screening	No. of complication screening among ("1" and /or "2")
Pharmacy		
9	Essential Drug Stock-out (Yes/No)	Any stock-out of key DM/HTN medicine and test reagents in the last quarter

Annex 4: NCD Technical Group, Presented by Ms. Otaki Junko







Proposed Plan on the NCD Technical Group

	Plan	Details	Person In Charge	Time Frame	Remarks
1	Formulation of the NCD Technical Group	Brainstorming: who should be members	PHD NCD Committee	Mid-August	Involve JICA/MoH for advice
	Consult higher PHD authorities on the plan	Especially a potential member who is outside of PHD jurisdiction	Director, Vice Director and NCD Committee	Mid-End of August	
	Gain consensus from the PHD and hospital authorities		PHD NCD Committee	End of Augst	Consensus from the MoH
2	Confirm official formulation of the NCD Technical Group	Request key authorities of PHD, ODs, RH and PH for official consensus	PHD NCD Committee	Mid-September	JICA/MoH to witness the consensus
3	Conduct initial meeting of the NCD Technical Group	Set agenda and invite members	PHD NCD Committee	Late September	Ensure participation of all key members
		Prepare meeting materials	PHD NCD Committee	Late September	
		Conduct the meeting	PHD NCD Committee	Early October	
4	Develop NCD Technical Group's Action Plan	Develop TOR	PHD NCD Committee & NCD Technical Group	October	Align with NSOP & Guidelines
		Outline action plan	PHD NCD Committee & NCD Technical Group	October	Consider actions based on the WS results
		Create a timeline	PHD NCD Committee & NCD Technical Group	October - November	Action plan to be fully developed by the end of November to align with PHD, OD and Hospitals' AOP
5	Implement the action plan	Carry out planned activities	NCD Technical Group	January onwards	Engage stakeholders regularly
		Monitor progress	NCD Technical Group	Follow the action plan	Track key performance indicators
		Report outcomes and review	NCD Technical Group	Follow the action Plan	

Annex 5: Group Work Composition

Group Work

Group 1: NCD Management Facilitator: Dr. Hay Ra
Director, PHD
Director, Provincial Hospital
Director, OD Chamkar Leu
Director, OD Batheay
Director, OD Cheung Prey
Director, OD Srey Santhor
Director, OD Steung Trang
Director, OD Prey Chhor
Director, OD Kang Meas
Director, OD Koh Soutin
Director, RH Chamkar Leu
Director, RH Cheung Prey
Total: 12

Group 2: DM/HT Facilitator: Mr. Ly Kimse
Director, RH Batheay
Director, RH Steung Trang
Director, RH Kang Meas
Chief DM/HT, Provincial Hospital
Chief OPD, RH Chamkar Leu
Chief DM/HT, RH Batheay
Chief DM/HT, RH Cheung Prey
Chief OPD, RH Srey Santhor
Chief OPD, RH Steung Trang
Chief OPD, RH Prey Chhor
Chief OPD, RH Kang Meas
Chief OPD, RH Koh Soutin
Total: 12

Group 3: Cervical Cancer Facilitator: Dr. Peang Nara
Director, RH Srey Santhor
Director, RH Prey Chhor
Director, RH Koh Soutin
Chief Maternity, Provincial Hospital
Chief Maternity, RH Chamkar Leu
Chief Maternity, RH Batheay
Chief Maternity, RH Cheung Prey
Chief Maternity, RH Srey Santhor
Chief Maternity, RH Steung Trang
Chief Maternity, RH Prey Chhor
Chief Maternity, RH Kang Means
Chief Maternity, RH Koh Soutin
Total: 12