هيئة الصحة
HEALTH AUTHORITY

Document Title:	HAAD Standard for Colorectal Cancer Screening		
Document Ref. Number:	HAAD/CRCS/SD/1.0	**Version:**	1.0
Approval Date:	02 October 2014	**Effective Date:**	October 2014
Last Reviewed:	August 2014	**Next Review:**	October 2016
Revision History:	Version 0.9 July, 2012		
Document Owner:	Public Health and Research Division		
Applies to:	All HAAD Licensed Healthcare Providers		
Classification:	◉ Public		

1. Purpose

1.1 To stipulate the service requirements to deliver Colorectal Cancer Screening (CRC) in the Emirate of Abu Dhabi;

1.2 To set out the minimum Clinical Care Standards and frequency for CRC screening as per international evidence-based guidelines;

1.3 To set out the case mix, eligibility criteria and data reporting requirements for Colorectal Cancer Screening; and

1.4 To ensure the population receives high quality services on onward referral where appropriate.

2. Scope

2.1This standard applies to all Healthcare Providers and Professionals licensed by HAAD in the Emirate of Abu Dhabi providing CRC services (including mobile units).

3. Definitions

3.1 **Colorectal Cancer Screening:** includes the following services:

3.1.1 Colorectal Cancer Screening services; and

3.1.2 Colorectal Cancer assessment and follow up; and

3.1.3 Familial/ Genetic High Risk Assessment

3.2 **Colonoscopy:** Colonoscopy is the endoscopic examination of the large bowel and the distal part of the small bowel with a Charge Coupled Device (CCD) Camera or a fibre optic camera on a flexible tube passed through the anus. It can provide a visual sight to detect adenomatous polyps and cancer diagnosis (e.g. ulceration, polyps). It also grants the opportunity for biopsy or removal of suspected colorectal cancer lesions.

3.3 Fecal Immunochemical Test (FIT) is at test that investigates the stool sample for signs of cancer.
3.4 **Case mix:** includes males and females aged 40-75 years determined eligible for colorectal cancer screening services, in accordance with the criteria detailed in this standard.

4. Duties for Healthcare Providers

4.1 All HAAD Licensed Healthcare Providers (Facilities and Professionals) engaged in providing CRC screening services must:

4.1.1. Provide clinical services and patient care in accordance with this Standard and in accordance with HAAD Policies and Standards and the laws and regulations of the Emirate of Abu Dhabi;

4.1.2. Submit data to HAAD via e-claims in accordance with the HAAD Reporting of Health Statistics Policy and as set out in the HAAD Data Standards and Procedures (available from: www.haad.ae/datadictionary

4.1.3. In addition to the routine e-Claims data, collect and submit to HAAD data on screening visits, outcomes within 2 weeks of the screening date, through the Cancer Screening Form of the cancer E-notification system Available from https://bpmweb.haad.ae/usermanagement/login.aspx

4.1.4. Report all screen-detected cancers to HAAD, through Cancer Case Notification Form, of the cancer notification, Available from: https://bpmweb.haad.ae/usermanagement/login.aspx

4.1.5. Comply with HAAD policies and standards on managing and maintaining patient medical records, including developing effective recording systems, maintaining confidentiality, privacy and security of patient information;

4.1.6. Comply with the HAAD requirements for Patient Education and Consent. The licensed provider must provide appropriate patient education and information regarding the screening test and must ensure that appropriate patient consent is obtained and documented on the patient's medical record consistent with the relevant HAAD policies and standard;

4.1.7. Comply with HAAD requests to inspect and audit records and cooperate with HAAD authorized auditors as required by HAAD; and

4.1.8 Comply with HAAD requirements for Information Technology ("IT") and data management, electronic patient records and disease management systems, sharing of screening and diagnostic test, and where applicable pathology results.

5. Enforcement and Sanctions

5.1 Healthcare providers, payers and third party administrators must comply with the terms and requirements of this Standard, the HAAD Standard Contract and the HAAD Data Standards and Procedures. HAAD may impose sanctions in relation to any breach of requirements under this standard in accordance with the (HAAD Policy on Inspections, Complaints, Appeals and Sanction, Chapter 1X, HAAD Policy on Complaints, Investigating, Regulatory Action, and Sanctions, the Healthcare Regulatory Policy Manual version 1.0).

6. Payment for screening and follow up of Colorectal Cancer:

6.1 Eligibility for reimbursement under the Health Insurance Scheme must be in accordance with the Standard Provider Contract and as applicable: The Thiqa Prevention List, HAAD Mandatory Tariff and associated Claims and Adjudication Rules and the Coding Manual. All documents are available from the HAAD website in Data Dictionary (http://www.shafafiya.org/dictionary/portal/)

7. Standard 1. Clinical Service Specifications

7.1 All Healthcare Screening Facilities providing Colorectal Cancer Screening services must:

7.1.1 Be licensed by HAAD;

7.1.2 Follow best practice for Colo-Rectal Cancer Screening as per **Appendix 1**;

7.1.3 Adhere to Clinical performance Indicators and timelines in accordance with **Appendix 2**;

7.1.4 Include a CRC Risk assessment and refer individuals to appropriate screening test, based on risk categories as per **Appendix 3;**

7.1.5 Provide patient education and information regarding the screening, assessment and follow up care and ensure that patient informed consent is obtained and documented on medical record consistent with the relevant HAAD policies and standards;

7.1.6 Assign a Colorectal Cancer facility program coordinator/director who will be accountable to:

7.1.6.1report and submit screening and outcome data to HAAD, specified in **section 4**;

7.1.6.2 maintain records for screening tests and outcomes; and

7.1.6.3 establish internal audit policies and procedures and conduct regular audits, monitoring and evaluation to demonstrate compliance with this standard and other associated regulatory policies and standards.

7.1.7 Endoscopy Unit providing Colorectal Cancer Screening, must meet the criteria for a competent unit Infrastructure, Equipment and Personnel, as per **Appendix 4**;

7.2 All Laboratories providing diagnostic histopathology and genetic testing services must:

7.2.1 Be licensed by HAAD;

7.2.2 Have in place the systems, policies and operating procedures in accordance with the requirements of the HAAD Clinical Laboratory Standards;

7.2.3 Perform the colorectal cancer screening laboratory tests in accordance with the requirements and specifications provided in this Standard;

7.2.4 Use Specimen Identification and labelling in accordance with HAAD Clinical Laboratory Standards and industry best practices;

7.2.5 Attain, within 12 months from the date of issuance of this standard accreditation by an internationally credible accrediting body (recognised by HAAD such as CAP, ISO 15189(2007), JCI /Lab) for colorectal cancer. HAAD may, at its sole discretion, consider extension to attain CAP, ISO 15189(2007), JCI/Lab)accredication within 18 months from the issuance of this Standard on a case by case basis taking into account submission of evidence on progress towards accreditation.

7.2.6 Establish internal audit policies and procedures and conduct regular audits, monitoring and evaluation to demonstrate compliance with this standard and other associated regulatory policies and standards;
7.2.7 HAAD may, at its discretion, conduct third-party independent quality assurance testing of laboratories providing colorectal cancer screening test service. Where it does so, providers must comply with HAAD's direction and cooperate with the HAAD appointed party.
7.2.8 Labs performing FIT test will:
7.2.8.1 Follow the manufacturer's instructions for use of the FIT testing kit;
7.2.8.2 Use an explicit definition for cut-off levels for haemoglobin concentration;
7.2.8.3 Make provision to record the information concerning the actual amount of haemoglobin, both for tests classified as negative and for those classified as positive; and
7.2.8.4 Ensure that they employ professionals who are privileged and have evidenced their ability to undertake different types of fecal occult blood test and in-depth understanding of the technology required to perform the fecal occult blood test.
7.2.9 Labs performing genetic testing, the unit will:
7.2.9.1 have organized specialist cyto/histopathological support services who can demonstrate compliance with HAAD Clinical Laboratory Standards.

7.3 All healthcare professionals participating in colo-rectal cancer screening must:
7.3.1 Be licensed by HAAD and confirm to HAAD's requirements for relicensing
7.3.2 Obtain informed patient consent prior to screening. Where consent is granted or refused, the treating physician must document and retain signed consent forms on patients' medical records;
7.3.3 Inform all patients of the procedures and expected timeframe to be screened and to receive results;
7.3.4 Ensure that the outcome of screening for Colorectal Cancer is reviewed by a multi-disciplinary team including; gastroenterologist, colorectal surgeon, gastrointestinal oncologist, pathologist, radiologist, medical and a nurse.
7.3.5 Laboratory technologists and personnel must satisfy the requirements of the HAAD Clinical Laboratory Standards.

8. Standard 2. Eligibility Criteria

8.1 Eligibility Criteria
8.1.1 Detailed history, such as that described in the cancer screening form, Available from: https://bpmweb.haad.ae/usermanagement/login.aspx must be evaluated and completed by the screening facility coordinator, each time a candidate visits for screening. The purpose of this is to identify individuals' risk status and determine the appropriate screening tests
8.1.2 Individuals at average risk of colorectal cancer, as defined in Appendix 3 of this Standard and include the following;
8.1.2.1 All men and women who have no symptoms of colorectal cancer,
8.1.2.2 40-75 years olds; and
8.1.3 Individuals at increased or high risk of colorectal cancer are defined in appendix 3 of this standard

8.2 Screening tests and frequency

8.2.1 Screening tests for individuals at average risk of colorectal cancer

8.2.1.1 Colonoscopy screening, every 10 years; or

8.2.1.2 Fecal Immunochemical Test (FIT) every two years.

8.2.1.3 Eligible population must be offered colonoscopy screening as per **Appendix 1,** in case of refusal, the patient should be offered a FIT.

8.2.2 Screening tests for individuals at increased or high risk of colorectal cancer

8.2.2.1 Colonoscopy screening should be offered. The frequency and age of initiation is individualised for each person and it should be, as described in **Appendices 5, 6 and 7**; and

8.2.2.2 Further investigations, genetic testing and counselling should be pursued for individuals with suspected familial/ genetic high risk as per **Appendices 7 and 8.**

8.3 Recruitment for screening

8.3.1 Population eligible for Colorectal Cancer screening may be recruited in healthcare facilities through one of the following:

8.3.1.1 Targeted invitation

8.3.1.1.1 All screening facilities must establish an invitation system to ensure successful participation of eligible population

8.3.1.1.2 targeted invitation may be established via an electronic or manual invitation system;

8.3.1.2 Opportunistic

8.3.1.2.1 New physician consultation for related or unrelated reason or;

8.3.1.2.2 Engagement in a health promotion campaign

8.4 Online booking to screening appointment

8.4.1 HAAD has established an optional online booking system for screening appointments in order to facilitate access to screening services available from www.haad.ae/simplycheck;

8.4.2 Facilities are encouraged to provide flexible timeslots to enable this functionality;

8.4.3 It is the responsibility of the facility to ensure they meet the available appointments to receive patients; and

8.4.4 Facilities that utilise the provided appointment system must nominate a person to access the online booking schedule by which secure access will be provided by HAAD.

9. Standard 3. Screening with Colonoscopy

All Healthcare providers must utilise evidence based practice or international equivalant for CRC as per **Appendicies 9-16**:

9.1 Pre-Colonoscopy assessment as per **Appendices 9 and10;**

9.2 Colonoscopy Procedure **Appendix 11;**

9.3 Post-colonoscopy as per **Appendix 12;**

9.4 Colonoscopy findings as per **Appendix 13;**

9.5 Colonoscopy reporting as per **Appendix 14; and**

9.6 Techniques for Colonoscopic Tattooing Protocol **Appendix 15**

10. Standard 4. Screening with Fecal Immunochemical Test (FIT)

10.1 FIT test must be offered where the patient refuses the screening colonoscopy;
10.2 Patient must be provided with clear and simple instructions regarding collection of sample;
10.3. No drug or dietary restriction is required for FIT and only one stool sample is needed;
10.4 The quality of the sample must be reproducible and representative of the stool, to be of the required volume and be adequately preserved;
10.5. The samples must be analysed without delay and kept cool to avoid further sample denaturation and a potential increase in false negative results; and
10.6. The proportion of unacceptable tests received for measurement must not exceed 3% of all kits received; less than 1% is desirable.

11. Standard 5. Screening Outcomes & Referrals

11.1 at the end of the the screening, the screening unit must provide the patient with a copy of HAAD e- Cancer Screening Referral Form at Appendix 16;
11.2 The time between completion of a screening test and receipt of results by the participant must be less than 15 working days (acceptable standard >90% within 15 days).

11.3 Screening with Colonoscopy

11.3.1 In case of normal results, negative for polyps, patients must be re-invited for screening in accordance with the frequencies specified in **section 7.2**;
11.3.2 In case of presence of adenoma, colonoscopy must be repeated in accordance with **Appendix 1**
11.3.3 Adenoma detection rate must be monitored and audited. It is limited to screening colonoscopies; surveillance procedures and repeat endoscopic procedures are excluded;
11.3.4 The time interval between a positive colonoscopy (cancer) and definitive management must be less than 31 working days (acceptable standard ≥ 95% of cases must be no more than 31 days).
11.3.5 Death within 30 days after colorectal cancer screening, attributed to complications caused by colonoscopy, must be recorded by e-notification.

11.4 Screening with FIT test (Not Applicable for increased-High risk group):

11.4.1 Patients with a negative test result are re-invited for screening as per frequencies specified in **section 7.2**
11.4.2 Patients with a positive test result must be scheduled for follow-up colonoscopy within 31 days of referral.
11.4.3 The FIT test must be repeated if results are unclear or spoilt in accordance with **Appendix 1.**

12. Standard 6. Risk assessment and screening individuals at increased risk for CRC

12.1 Individuals with increased risk for CRC should be referred for assessment and screening to specialised centres identified by HAAD; available from: http://www.haad.ae/simplycheck/
12.2 All individuals at increased risk must be managed in accordance with **Appendices 5 and 6** and international best practices and guidelines such as NICE guidelines for Colorectal Cancer Screening and surveillance in moderate and high risk groups and NICE guidelines for Colonoscopic surveillance for prevention of colorectal cancer in people with ulcerative colitis, Crohn's disease or adenomas.

13. Standard 7. Familial/ Genetic High Risk Assessment

13.1 Individuals with suspected or confirmed genetic/familial high-risk as per **Appendix 7and 8** will require assessment in specialised centres- identified by HAAD Available on: http://www.haad.ae/simplycheck/

13.2 All individuals with suspected or confirmed genetic/familial high risk should be referred only to those facilities for assessment, genetic counselling and mutation analysis of relevant genes where appropriate

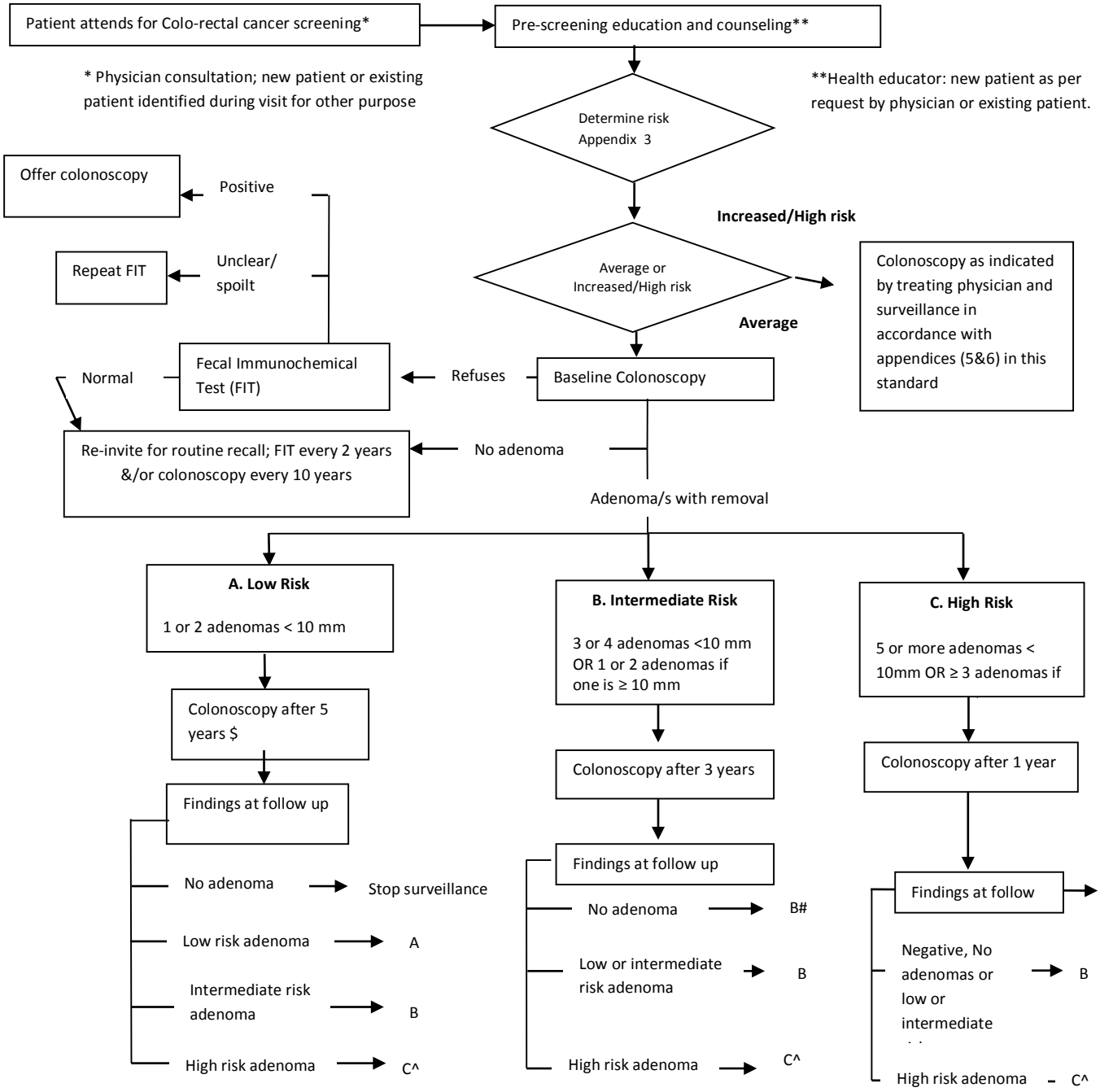
13.3 Individuals with gene mutation must be managed in accordance with international best practices and guidelines; including the NCCN guidelines for Genetic/Familial High-Risk Assessment: Colorectal (2014) or internationally recognised equivalent;

13.4 Genetic counseling is highly recommended when genetic testing is offered and after disclosing of results;

13.5 Genetic counseling can be given by a genetic counselor, medical geneticist, oncologist, surgeon, oncologist nurse or other healthcare professional with expertise and experience in genetic counseling who is privileged by the facility to provide counseling; and

13.6 A list of genetic tests to be performed are noted in **Appendix 8.**

Appendix 1 - Colo-rectal Cancer Screening and Diagnosis Pathway



$Consider age, comorbidity, family history accuracy and completeness of examination
High risk adenoma C^

Stop surveillance if there is a further negative result (no adenoma)

^ All histopathologically diagnosed cancers should be treated as per colon cancer guidelines.

Appendix 2- Colorectal Cancer Clinical Performance Indicators

Indicator	Acceptable level	Desirable level
Screening uptake (participation) rate	>45%	>65%
Minimum number of screening colonoscopies undertaken annually by each screening colonoscopist		>150 per annum
Bowel cleanliness at colonoscopy		≥ 90% bowel preparation described as excellent or adequate†
Inadequate FIT rate (proportion of people screened with one or more FIT returned none of which were adequate)	<3%	<1%
Maximum time between screening FIT test and receipt of result should be15 days	>90%	
Rate of referral to follow-up colonoscopy after positive FIT test(detects cancer)	90%	>95%
Maximum time between referral after positive screening FIT test and follow-up colonoscopy should be 31 days	>90%	>95%
Cecal intubation rate (CIR).Follow-up and screening colonoscopies to be recorded separately (unadjusted CIR with photographic evidence)	>90%	>95%
ADR	Auditable outcome	
Withdrawal time in negative colonoscopies (withdrawal from cecal pole to anus)		≥ 6 minutes
Polyp retrieval rate (retrieval of polypectomy specimens for histological analysis per colonoscopist)Ω		>90%
Rate of high-grade neoplasia reported by pathologists in a colonoscopy screening program	<5%	
Rate of high-grade neoplasia reported by pathologists in a FIT screening program	<10%	
Endoscopic complications of colonoscopy screening programs		Bleeding <1:150 Perforation 1:1000
Post polypectomy perforation rate		<1:500
Time interval between positive colonoscopy and start of definitive management within 31 days	>90%	>95%

† **Excellent:** no or minimal solid stool and only clear fluid requiring suction
Adequate: collections of semi-solid debris that are cleared with washing/suction
Inadequate: solid or semi-solid debris that cannot be cleared effectively
Ω **Numerator**: number of polyps with histological tissue retrieved for analysis.
Denominator: number of polyps recorded during lower GI endoscopies.

Appendix 3 - Pre- Colonoscopy Risk Assessment for Colo-rectal Cancer

Average risk:

1. Age ≥ 40.
2. No history of adenoma or Colorectal Cancer.
3. No history of inflammatory bowel disease.
4. Negative family history.

Increased risk:

1. Personal history of adenoma, sessile serrated polyp (SAP) **, Colorectal Cancer, Inflammatory Bowel Disease.
2. Positive family history of first or second degree relative with Colorectal Cancer (screening recommendations vary depending on family history).

**Increased risk based on personal history of adenoma(s)/ sessile serrated polyp(s) found at colonoscopy:

a) Low risk adenoma: ≤ 2polyps, < 1 cm, tubular.
b) Advanced or multiple adenomas: high grade dysplasia, ≥ 1 cm, villous (> 25% villous), between 3-10 polyps (fewer than 10 polyps in the setting of a strong family history or younger age (<40 years) may sometimes be associated with an inherited polyposis syndrome).
c) More than 10 cumulative adenomas (fewer than 10 polyps in the setting of a strong family history or younger age (<40 years) may sometimes be associated with an inherited polyposis syndrome).
d) Incomplete or piecemeal polypectomy (ink lesion for later identification) or polypectomy of large cancer.

High risk:

1. Hereditary Non polyposis Colo-rectal Cancer (HNPCC)
2. Polyposis syndromes (Classical Familial Adenomatous Polyposis (FAP-1), Attenuated Familial Adenomatous Polyposis (AFAP-1), MYH associated Polyposis (MAP-1), Peutz-Jeghers Syndrome (PJS-1), Juvenile Polyposis Syndrome (JPS-1), Hyperplastic Polyposis Syndrome (HPP-1)

Appendix 4 - Colorectal Cancer Screening Endoscopy Unit Infrastructure, Equipment and Personnel

Endoscopy Unit Infrastructure and Equipment must:

1. Include facilities for adequate pre-colonoscopy assessment, recovery and be designed to allow efficient patient flow.
2. Match the demand with respect to unit capacity (e.g. Equipment and Personnel).
3. Provide video-endoscopes that facilitate focal application of the dye for the detection and assessment of high-risk colo-rectal lesions.
4. Provide adequate supply of accessories suited to the endoscopic interventions undertaken.
1. Provide properly maintained resuscitation equipment in the endoscopy rooms and recovery areas.
2. Conduct a regular review of all the functioning and cleansing of the colonoscopies. The review should be available at all times in the unit.
3. Plan capacity that matches demand for screening. Referral to colonoscopy to be within 31 days from a positive FIT test (detects the presence of occult blood in the fecal sample)

Criteria Colorectal Cancer Screening Core Team to include:
All members in the Colo-rectal Cancer Core Team should participate in regular Multidisciplinary Team meetings to discuss each patient with Colo-rectal Cancer.

1. At least 2 Gastroenterologists: licensed by HAAD, colonoscopy volume minimum 150per colonoscopist per year with a cecal completion rate of > 90%

2. Nurse: two nurses trained to provide support, assistance, information and advice to every patient. An in-depth understanding of colorectal cancer (diagnosis, treatment, prognosis, staging and importance of stage at diagnosis), an in-depth understanding of the colorectal screening process (including screening theory and particularly the potential benefits and harms of screening, and the prime importance of quality assurance) and advanced communication skills.

Appendix 5 - HAAD Recommendation for colorectal cancer screening and surveillance , Increased- High Risk Disease Family Group

High-Risk Disease Groups	Screening procedure	Time of initial screen	Screening procedure and interval
Colorectal Cancer	Consultation, CT, LFT's & Colonoscopy	Colonoscopy within 6 months of resection only if colon evaluation pre-op is incomplete	CT Liver Scan within 2 years post-op. Colonoscopy 5 yearly until co-morbidity outweigh
Colonic Adenomas	Low risk 1-2 adenomas, both <1 cm Intermediate risk 3-4 adenomas, OR at least one adenoma ≥1 cm High risk ≥5 adenomas or ≥3 with at least One ≥1 Piecemeal polypectomy	Colonoscopy Colonoscopy Colonoscopy Colonoscopy or flexi-sig (depending on polyp location)	5 years or no surveillance Every 3 years Yearly 3 months consider open surgical resection if incomplete healing of polypectomy scar

Ulcerative colitis and Crohn's colitis	Low risk Extensive colitis with no inflammation or left sided colitis or Crohn's colitis of <50% colon	ancolonic dye spray with targeted biopsy. If no dye spray then 2-4 random biopsies every 10 cms.	Every 10 years from onset of symptoms
	Intermediate risk Extensive colitis with mild active disease or post-inflammatory polyps or family history of Colorectal cancer in a FDR <50 yrs.		
	Extensive at least moderate colitis or stricture in past 5 years or dysplasia in past 5 years (declining surgery) or PSC or OLT for PSC) or colorectal cancer in a FDR <50 yrs.		
	Uretero-sigmoidostomy		after surgery by 10 years
	Acromegaly	Colonoscopy	At 40 yrs.

Abbreviations: CT, Computed tomography; LFT's, liver function tests; OLT, orthoptic liver transplant; PSC, primary sclerosing cholangitis.

Appendix 6 - HAAD recommendations for colorectal cancer screening and surveillance in Moderate Risk Disease Family Groups

Initial screening 10 years earlier than the youngest affected FDM

Moderate risk family history categories	Screening procedure	Screening procedure and interval
Colorectal cancer in 3 FDR in first degree kinship*, none <40yrs	Colonoscopy	Colonoscopy every 5 years till age 75
Colorectal cancer in 2 FDR in first degree kinship*, mean age <60 yrs	Colonoscopy	Colonoscopy every 5 years till age 75
Colorectal cancer in 2 FDR >60 yrs	Colonoscopy	Once-only colonoscopy at age 55 yrs. If normal no follow-up
Colorectal cancer in 1 FDR <50 yrs	Colonoscopy	Once-only colonoscopy at age 55 yrs. If normal no follow-up
All other FH of colorectal cancer	None	N/A
Incident colorectal cancer case (age <50 yrs, or MMR prediction >10%),not fulfilling Lynch syndrome criteria	Tumour MSI and/or IHC analysis If no tumour testing available consider genetics referral	Standard post-op follow-up unless Lynch syndrome (LS) features on tumour analysis or a mutation identified, then LS surveillance applies

- Affected relatives who are first-degree relatives of each other AND at least one is a first degree relative of the consultant
- Combinations of 3 affected relatives in a first-degree kinship include: parent and aunt/uncle and/or grandparent; OR 2 siblings/1 parent; OR 2 siblings/1offspring. Combinations of 2 affected relatives in a first degree kinship;
- Include a parent and grandparent, or >2 siblings, or >2 children, or child + sibling. Where both parents are affected, these count as being within the first-degree kinship.
- Clinical Genetics referral recommended.
- Centres may vary depending on capacity and referral agreements. Ideally all such cases should be flagged systematically for future audit on an Emirate scale.

Appendix 7 - HAAD Summary of Recommendations for Colorectal Cancer Screening and Surveillance in High Risk Disease Family Groups

Family history categories*	Screening procedure	Age at initial screen	Screening interval and procedure
At-risk HNPCC (fulfils modified Amsterdam criteria, or untested FDR of proven mutation carrier)	MMR gene testing of affected relative Colonoscopy +/- OGD	Colonoscopy from age 25 yrs. OGD from age 40 yrs Or screening 10 years earlier than the youngest affected FDM	Colonoscopy every 18-24 months (OGD every 2 years from age 50 yrs)
MMR gene carrier	Colonoscopy +/- OGD		
At-risk FAP(member of FAP family withno mutation identified)	APC gene testing of affected relative Colonoscopy	Puberty Flexible approach important making allowance for variation in maturity	Annual colonoscopy or until aged 30 yrs Thereafter 3-5 yearly until60 yers Procto-colectomy or colectomy if postive
Fulfils clinical FAP criteria, or proven APC mutation carrier opting for deferred surgerydprophylactic surgery normally strongly recommended	Colonoscopy Colonoscopy/ OGD	Usually at diagnosis Otherwise puberty. Flexible approach important making allowance for variation in maturity	Recommendation for procto-colectomy & pouch/ colectomy before age 30 yrs. Cancer risk increases dramatically age >30 yrs Twice yearly colonoscopy

FAP post colectomy and IRA	Colonoscopy OGD	After surgery OGD from age 30 yrs	Colonscopy Every 3 years forward & side-viewing OGD
FAP post procto-colectomy and pouch	DRE and pouch endoscopy Forward & side-viewing OGD	After surgery OGD from age 30 yrs	Annual exams alternating Flexibel /rigid pouch endoscopy Eery 3 years forward & side-viewing OGD
MUTYH-associated polyposis (MAP	Genetic testing Colonoscopy +/- OGD	Colonoscopy from age 25 yrs. OGD from age 30 yrs	Mutation carriers should be counselled about the available limited evidence Options include prophylactic colectomy and ileorectal anastomosis; or biennial colonoscopy surveillance. Everly 3-5 years gastro-duodenonoscopy
FDR with MSI-H colorectal cancer AND IHC shows loss of MSH2, MSH6 or PMS2 expression. MLH1 loss and MSI specifically excluded (MLH1 loss in elderly patient with right sided tumour is usually somatic epigenetic event)	Colonoscopy +/_ OGD	Colonoscopy from age 25 yrs OGD from age 50 yrs	colonoscopy every 2 years (with OGD aged >50 yrs)

Peutz-Jeghers Syndrome	Genetic testing of affected Relative Colonoscopy +/_ OGD	Colonoscopy from age 25 yrs. OGD from age 25 yrs Small bowel MRI/ enteroclysis	2 yrly Colonoscopy Consider colectomy and IRA for colonic cancer Small Bowel VCE or MRI/enteroclysis 2e4yrly OGD 2 yrly
Juvenile polyposis	Genetic testing of affected Realtive Colonoscopy +/_ OGD	Colonoscopy from age 15 yrs. OGD from age 25 yrs	Every 2 years colonoscopy and OGD. Extend interval aged >35 yrs.

1) The Amsterdam criteria for identifying HNPCC are three or more relatives with colorectal cancer:
    - One patient a first degree relative of another;
    - Two generations with cancer; and
    - One cancer diagnosed below the age of 45 or other HNPCC-related cancers e.g. endometrial, ovarian, gastric, upper urethelial and biliary tree.

2) Clinical Genetics referral and family assessment required, if not already in place or referral was not initiated by Clinical Genetics.

3) FAP, familial adenomatosis polyposis; FDR, first degree relative (sibling, parent or child) with colorectal cancer; HNPCC, hereditary non-polyposis colorectal cancer; IHC, immunohistochemistry of tumour material from affected proband; MSI-H, micro-satellite instability e high (two or more MSI markers show instability); OGD, oesophagogastroduod endoscopy; VCE, video capsule endoscopy.

Appendix 8 - Genetic Test

Available genetic tests for the patient or her affected family member(s) that may be recommended by the Cancer Genetics professional based on the assessment

Disease	Reasonable gene
Lynch syndrome/hereditary non-polyposis colorectal cancer (HNPCC)	Genes responsible: MLH1, MSH2, MSH6, PMS2. <OMIM 114500, 120435, 120436, 276300, 609309, 600678, 600259.
FAMILIAL ADENOMATOUS POLYPOSIS (FAP	APC. <OMIM 175100.
PEUTZ-JEGHERS SYNDROME	LKB1. <OMIM 175200.
JUVENILE POLYPOSIS	SMAD4, BMPR1A (Juvenile polyposis). <OMIM 174900.
Rare subtype hereditary mixed juvenile/adenomatous polyposis	locus on chr15q (GREM1 or SGNE1 may be Responsible). <OMIM 601228.
MUTYH ASSOCIATED POLYPOSIS (MAP	MUTYH. <OMIM 608456.

Appendix 9 - Pre-Colonoscopy assessment

1. Pre-colonoscopy documentation must include:
    1.1 Patient demographics;
    1.2. Anticoagulant use;
    1.3. History of Diabetes Mellitus and use of Insulin;
    1.4. Presence of implantable defibrillators or pacemakers;
    1.5. Previous Gastrointestinal procedures;
2. Assessment of patient risk*:* physical status of the patient must be documented in accordance with the American Society of Anesthesiology (ASA) (Appendix 10).
3. ASA class 3 or higher are at higher risk for cardiopulmonary events and appropriate measures must be taken in this respect.
4. Colonic cleansing: type of bowel preparation must be documented including documentation of careful preparation in accordance with international standards and guidelines.
5. Inadequate bowel preparations must not exceed 10% of examinations

Appendix 10 - American Society of Anesthesiology Classification System

Class	Description
1	Patient has no organic, physiologic, biochemical, or psychiatric disturbance (healthy, no comorbidity).
2	Mild-moderate systemic disturbance caused either by the condition to be treated surgically or by other pathophysiologic processes (mild-moderate condition, well controlled with medical management; examples include diabetes, stable coronary artery disease, stable chronic pulmonary disease).
3	Severe, systemic disturbance or disease from whatever cause, even though it may not be possible to define the degree of disability with finality (disease or illness that severely limits normal activity and may require hospitalization or nursing home care; examples include severe stroke, poorly controlled congestive heart failure, or renal failure).
4	Severe systemic disorder that is already life threatening, not always correctable by the operation (examples include come, acute myocardial infarction, respiratory failure requiring ventilator support, renal failure requiring urgent dialysis, bacterial sepsis with hemodynamic instability).
5	The moribund patient who has little chance of survival.

Appendix 11 - Colonoscopy Procedure

1. Facility specific Policies and Procedures must be in place for the following:
   1.1 Colonoscopy decontamination including infection control in accordance with;
   http://www.healthdesign.com.au/haad.hfg/Full_Index/haad_b_day_surgery_procedure_unit.pdf
   1.2 Sedation of patient, considering patient status and preferences and recording of all sedation methods and outcomes; consider involving anesthesia service in patients with significant comorbidities such as patients with ASA 3, 4 and 5 (Appendix 9); and
   1.3 Patient support and comfort, including positioning during the colonoscopy;
2. To achieve high quality colonoscopic examination, complete intubation of the colon and careful inspection of the mucosa during withdrawal is necessary.
   2.1 If a complete colonoscopy is not achieved, imaging for documentation of incomplete intubation may be necessary and reasons must be clearly documented;
   2.2 Auditable photo documentation of colonoscopy completion must be available
   2.3 including a panoramic image of the appendiceal orifice, ileo-cecal valve and cec or a video clip with a respective image;
   2.4 Documentation of completion of rectal retroflexion (retroflexion of the endoscope during colonoscopy to increase diagnostic yield) must be recorded
   2.5. Withdrawal times of the colonoscopy from cecum to anus must be documented and must be not less than 6 minutes (when no biopsies or polypectomies are performed). The times to be documented include when:
      2.5.1 Endoscope is inserted into the rectum;
      2.5.2 Withdrawal from cecum was started; and
      2.5.3 Endoscope is withdrawn completely.
   2.6 A record of the actual model and instrument number used must be Maintained by the unit staff to track procedure volume, problems, and infection transmission and instrument repairs;
   2.7 Any adverse clinical events (fall in blood pressure, unplanned reversal of sedation medications, oxygen desaturation etc.) that occur during colonoscopy as well all serious events (perforation, bleeding requiring blood transfusion, and/or surgery) must be documented with hard copies attached to the colonoscopy report (Appendix 15) and reported in accordance with HAAD Standard for Adverse Events Management and Reporting;

Appendix 12 - Post-colonoscopy procedures

1. Patients must be contacted 24 hours post- procedure or on the next working day to monitor any complications; this contact must be documented;
2. Patients must receive instructions about management of any potential adverse events following discharge and must be informed that complications may occur within one-four weeks post procedure;
3. A contact number must be provided to the patient for this purpose and documented in the patient records;
4. Post procedure complications must be tracked over a 30-day interval after a Colonoscopy; and
5. Discharge instruction form should be given to patient instructing him to call endoscopy unit or the gastroenterology physician on call or to come to ER in case there is any abdominal pain or any complication or concerns after the procedure. Patient should sign this form acknowledging that he understood the post colonoscopy and the pre-discharge instructions.

Appendix 13 - Colonoscopy findings

3 Colonoscopy findings

8.3.1 Avoid using vague terms to describe polyps in the report;
8.3.2 An estimation of the size and dimension of all polyps must be documented, terms such as “large” or “small” must not be used;
8.3.3 Tattoos must be placed for all lesions ≥ 10 mm and those with concerning appearance for cancer to mark the location of colon lesions for repeat colonoscopy or surgery as describe in Appendix 16;
8.3.4 Lesions that are too large to be safely removed must be biopsied and a tattoo injection performed in the vicinity of the lesion and not into the lesion, as described in Appendix 16.
8.3.5 Specimen Identification and labelling must be in accordance with HAAD Clinical Laboratory Standards and industry best practices; and
8.3.6 Procedures and protocols for adequate specimen collection, handling, labelling and reporting must be in accordance with HAAD Clinical laboratory standards and must be communicated to clinical staff and other clients who are involved in the procedures for processing of colorectal specimens.

Appendix 14 - Colonoscopy Report

1. Each facility must develop a patient colonoscopy report form, retained on the patient's medical record and made available to HAAD auditors.
2. A Standard report must include at least the following information:
   - 2.1 Patient demographics and history;
   - 2.2 Assessment of patient risk and comorbidity;
   - 2.3 Procedure indications;
   - 2.4 Procedure: technical description;
   - 2.5 Colonoscopy findings;
   - 2.6. Interventions/ unplanned events;
   - 2.7 Assessment;
   - 2.8 Follow–up plan; and
   - 2.9 Pathology.

<table>
<tr><th colspan="6">Section 1: Patient demographics</th></tr>
<tr><td colspan="2">Name</td><td>Date of birth</td><td>Gender
□Male
□Female</td><td>MRN</td><td>Associated diagnosis</td></tr>
<tr><th colspan="6">Section 2: Colonoscopy procedure</th></tr>
<tr><td colspan="2">Informed consent signed
□ Yes
□ No</td><td colspan="2">Indication for colonoscopy</td><td colspan="2">ASA risk
□ 1 □2 □3 □4 □5</td></tr>
<tr><td>Date</td><td>Time (24 hrs.)</td><td colspan="2">Physical exam conducted
□ yes □ no</td><td colspan="2">Patient, procedure confirmed
□ yes □ no</td></tr>
<tr><td colspan="2">Performed by</td><td colspan="4">Preparation and technique</td></tr>
<tr><td colspan="6">Bowel preparation</td></tr>
<tr><td colspan="6">Protocol</td></tr>
<tr><td colspan="3">Quality</td><td colspan="3">Antibiotic prophylaxis given?
□ yes □ no</td></tr>
</table>

Monitoring during procedure			
Premedication		Patient position	
Endoscope model		Endoscope manufacturer	
Procedure tolerated? ☐ yes ☐ no	Complications (state any):		
Section3: Colonoscopy findings			
Route of entry	Extent of examination		
If incomplete examination, state reason			
Method of verifying extent		Duration of colonoscopy withdrawal (minutes)	
Rectal retro flexion performed? ☐yes ☐no	Cecum identified by Photographic of appendicular orifice? ☐yes ☐no		
Positive Findings ☐yes ☐no	Finding		
Extent		Severity	
Characterized by			
Consistent with			
Removal method			
Mass	Number	Size (mm, mention all)	
Location(s)			
Descriptors			
Removal method		Retrieval	
Photo documentation attached? ☐Yes ☐no	Other findings?		
Discussed with patient? ☐yes ☐no			

Section 4: Impression and plan
Diagnosis □ Colo-rectal carcinoma □ other (state other)
Course
Follow up
Counseled

Appendix 15 -Techniques for Colonoscopic Tattooing Protocol

Indications

- Prior to surgery to localise pathology
- To mark lesions for endoscopic surveillance
- There is no need to tattoo for:
  - ➢ Lesions in the caecum
  - ➢ Rectal lesions up to 10cm

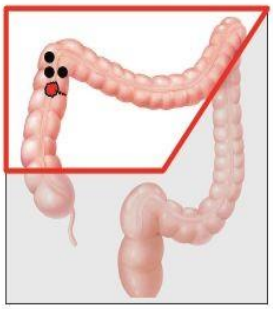
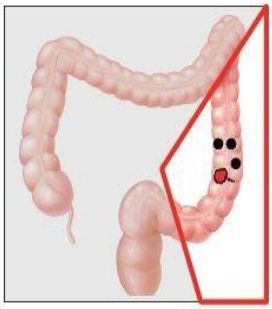
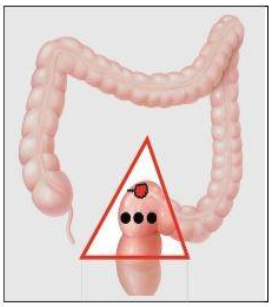
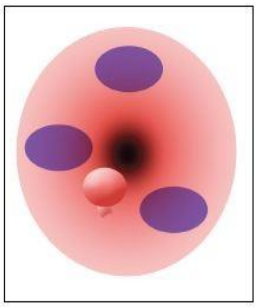
  However, if in doubt, then place a tattoo

Equipment

- Primed variceal injection needle with 10ml syringe filled with normal saline
- 5ml syringe filled with Spot® (or 0.9ml sterilised Black (India) Ink made up to 5ml with normal saline)

Procedure

- Direct needle at an angle to mucosa
- Raise a bleb using 1-2ml of saline
- Swap to syringe filled with Spot® or India Ink
- Inject 1ml into the bleb to create tattoo
- Swap to syringe filled with saline and flush ink out with 1ml saline before removing needle

PROXIMAL lesions (caecum to splenic)	DISTAL lesions (splenic to rectosigmoid)	RECTOSIGMOID lesions (25cm to 10cm)	Tattoo positioning
			
Place 3 tattoos 3cm **DISTAL** to lesion	Place 3 tattoos 3cm **PROXIMAL** to lesion	Place 3 tattoos 3cm **DISTAL** to lesion	Place 3 tattoos at 120° 3cm from lesion

REMEMBER: TO DOCUMENT HOW MANY TATTOOS WERE PLACED AND THE POSITION RELATIVE TO THE LESION

Appendix 16- E-Notification Cancer Screening Referral Form

Cancer Screening ID:	
First Name:	
Last Name :	
Date of Birth:	
Nationality:	
Emirate I.D.	
Marital status:	
Colonoscopy Report:	
Recommended next step:	
FIT Report :	
Recommended Next step:	
Referred:	
Date of referral:	