

Virtual Diabetic Assessments*CPG: Virtual Health*

Created: April 15, 2020

Updated: --

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Introduction:

Virtual care is healthcare at a distance and many assessments need to be adapted in the absence of a face-to-face interaction¹. Clinical assessments involve the use of tools and instruments which are not available in virtual healthcare settings. Information will need to be gathered in other ways, such as listening to the patient's cough, or the audible presence of adverse breath sounds, such as wheezing. As with conventional assessments, determine if the patient is experiencing a particular problem and focus on that area first. If no particular problem is present, complete a generalized assessment of the relevant system².

Essentials³:

1. **Set-up:** Before initiating a virtual visit, make sure you are set up properly, have access to the patient chart, and any additional information that may be required.
2. **Connect:** Determine the most appropriate method for communicating with the patient (either phone or video chat). Confirm that your audio and video connections are working properly.
3. **Get started:** Once you begin the visit, perform a rapid assessment to determine if any immediate interventions are needed. For example, does the patient appear very sick or are they too short of breath to speak? If so, go directly to asking key clinical questions. If no immediate interventions are required, establish what the patient hopes to gain from the visit (i.e., clinical assessment, referral, reassurance).
4. **History:** Ask questions to determine a history of the present illness.
5. **Examination:** Perform a modified physical exam and ask functional inquiry questions.
6. **Vitals:** The patient may be able to take their own measurements if they have access to vitals equipment at home (i.e., blood pressure monitor, pulse oximeter, scale). Interpret results with caution and use them to support findings in the context of your wider assessment.
7. **Decision and action:** Based on your findings, decide if you should report to the patient's most responsible provider, or if the patient requires immediate conveyance to hospital.

**Assessment Overview:**

1. It has been found that, for people with diabetes, virtual healthcare reduces the onset of macro and micro complications and subsequent hospitalizations. The purpose of contacting people is to reinforce their prescribed treatment plan. In general, the major categories when providing care are:
 - Self-monitoring
 - Medications
 - Nutritional intake
 - Activity/exercise
 - Diagnostic evaluation
 - Preventive actions²

Virtual Assessments:

Diabetic Assessment(4)		
Section	Component	Question
MODIFIED EXAM	Neurological	Does the patient appear to have an altered level of consciousness?
		Does the patient appear confused?
		Does the patient appear drowsy or fatigued?
		Does the patient appear irritable?
	Respiratory	Does the patient appear to have an increased respiratory rate?
	Skin	Does the patient appear to have pale and/or clammy skin?
FUNCTIONAL INQUIRY	General	Do you feel more irritable than normal?
		Have you recently checked your blood glucose levels? <ul style="list-style-type: none"> What was the reading?
		Do you feel like you have fever or chills? <ul style="list-style-type: none"> What is your temperature?
	Activity	Do you feel excessive fatigue?
		Do you feel drowsy?
		Do you feel confused?
	Head	Do you feel more dizzy than normal?
		Do you have a new onset headache?
		Have you experienced any changes to your vision? If so <ul style="list-style-type: none"> Are you experiencing blurred vision? Are you experiencing double vision? Are you experiencing reduced vision?
	Mouth	Does your mouth feel more dry than normal?
	Respiratory	Do you feel more short of breath than normal?
		Do you have a new cough? <ul style="list-style-type: none"> Are you coughing up any phlegm?

		<ul style="list-style-type: none"> What colour is the phlegm?
	GI/GU	<p>Have you been experiencing nausea or vomiting that is more than normal for you? If so</p> <ul style="list-style-type: none"> Have you been vomiting for more than 12 hours? Have you been able to ingest your prescribed medications?
		Have you been experiencing diarrhea that is more than normal for you?
		Have you had an increase in the frequency that you urinate?
		Have you noticed any changes to the smell of your urine?
		Are you experiencing pain while urinating?
		Does your urine appear dark or cloudy?
		Do you have blood in your urine?
		Are you experiencing lower back pain?
	Skin	Describe your skin colour. Is it more pale than normal?
		Does your skin feel moist or sweaty?
		Do you have any new wounds on your skin?
		Do you have any open wounds that do not appear to be healing?
		Do you have any wounds that appear infected (red/swollen/foul smell)?
		Have you inspected your feet recently for new wounds?
FOCUSED ASSESSMENT		

Risk Identification:

Traffic light system for identifying risk in diabetic patients			
	<ul style="list-style-type: none"> Green Flag - Low Risk Document visit and report as normal 	<ul style="list-style-type: none"> Yellow Flag - Medium Risk Report to Primary Care Provider 	<ul style="list-style-type: none"> Red Flag - High Risk Arrange Transport to Hospital
Colour (of skin, lips, fingers)	<ul style="list-style-type: none"> Normal colour** 		<ul style="list-style-type: none"> Pale Clammy Diaphoresis
Neurological	<ul style="list-style-type: none"> Normal activity levels Ability to perform normal ADL's 	<ul style="list-style-type: none"> Light-headed Drowsy Numbness and tingling to tongue or lips Confused Headache Weakness Blurred vision 	<ul style="list-style-type: none"> Altered level of consciousness Double vision Disorientation Syncope Seizure like activity
Respiratory	<ul style="list-style-type: none"> No increased work of breathing 	<ul style="list-style-type: none"> New onset cough with discoloured sputum 	<ul style="list-style-type: none"> Deep, rapid respirations Respiratory distress
Circulatory	<ul style="list-style-type: none"> Blood pressure less than 130/80 mmHg 	<ul style="list-style-type: none"> Tachycardia Open sores and wounds that are not healing properly 	<ul style="list-style-type: none"> Sudden onset chest pain/pressure or discomfort.
Other	<ul style="list-style-type: none"> Fasting and/or before meal blood sugar between 4-7 mmol/L or within the target range recommended by the primary care provider. A1C is 7% or less OR within the target provided by the primary care provider. 	<ul style="list-style-type: none"> Blood sugar is less than 4 mmol/L Blood sugar is above target range Nauseated Anxiety Irritable Hunger Increased thirst Urinating more than normal Weight loss Inadequate response of symptoms to outpatient management Inability to eat or sleep due to symptoms Inability to care for oneself 	<ul style="list-style-type: none"> Blood sugar less than 4 mmol/L after attempting to treat at home Blood sugar greater than 20 mmol/L for more than 8 hours, combined with other symptoms (Type 2 diabetics) Blood sugar greater than 14 mmol/L before meals, or at bedtime on two tests in a row, combined with other symptoms (Type 1 diabetics)

4,5,6,7,8

* If able to measure using the patient's supplied equipment

** If able to assess using video conferencing tools

Decision and Action:

1. All patients with worsening diabetic symptoms (yellow) should be referred to their primary care provider for assessment.
2. If the paramedic does not have an existing history with the patient, they should strongly consider emergency conveyance to hospital for any patients experiencing yellow flag symptoms.
3. Patients with red flag symptoms should be conveyed to the emergency department for assessment and treatment.

Additional Treatment Information:

1. Many patients living with diabetes utilize a 'Diabetes Zones' plan, which is provided by their primary care provider. Patients should be encouraged to follow their action plan when and if they become symptomatic.

References & Further Reading:

1. Telemedicine; Researchers from University of Arizona Detail New Studies and Findings in the Area of Telemedicine (Clinical Examination Component of Telemedicine, Telehealth, mHealth, and Connected Health Medical Practices). Medical Devices & Surgical Technology Week [Internet]. 2018 Jun 10;140. Available from: <https://ezw.lib.bcit.ca/login?url=https://search.proquest.com/docview/2047463316?accountid=26389>
2. Martich D. Telehealth Nursing : Tools and Strategies for Optimal Patient Care [Internet]. New York, NY: Springer Publishing Company; 2017. Available from: <http://search.ebscohost.com/login.aspx?direct=true&AuthType=ip,sso&db=nlebk&AN=1442257&custid=s5672081>
3. Greenhalgh T, Koh GCH, Car J. Covid-19: A remote assessment in primary care. BMJ [Internet]. 2020 Mar 25;368:m1182. Available from: <http://www.bmj.com/content/368/bmj.m1182.abstract>
4. Briggs J. Telephone Triage Protocols for Nursing [Internet]. Vol. 5th ed. Philadelphia: Wolters Kluwer Health; 2015. Available from: <http://libproxy.jibc.ca:2048/login?url=https://search.ebscohost.com/login.aspx?direct=true&db=e000xna&AN=1473165&site=ehost-live&scope=site>
5. Willis S, Dalrymple R. Fundamentals of Paramedic Practice : A Systems Approach [Internet]. Hoboken, NJ: Wiley-Blackwell; 2020. (Fundamentals; vol. Second edition). Available from: <http://libproxy.jibc.ca:2048/login?url=https://search.ebscohost.com/login.aspx?direct=true&db=nlebk&AN=2240099&site=ehost-live&scope=site>
6. Justin L. Kaplan and Robert S. Porter, editor. Merck Manual Professional Version [Internet]. Whitehouse Station, NJ: Merck Sharp & Dohme Corp., A Subsidiary of Merck & Co., Inc.; 2020. Available from: <http://online.statref.com/document/MgMqo5q0ZcWCLC6nQYXHuw!!>
7. Diabetes Zones [Internet]. Island Health; 2018. Available from: https://www.islandhealth.ca/sites/default/files/2019-02/Diabetes_Zones.pdf
8. Clinical Practice Guidelines 2018 [Internet]. County of Renfrew Paramedic Services; 2018 [cited 2020 Apr 14]. Available from: <https://www.renfrewparamedics.ca/wp-content/uploads/2018/04/Clinical-Practice-Guidelines-2018.pdf>

