



## AI-Based Plan of Care

Change History: 06/15/2024 PAB New

### Overview

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We will use the core information provided by our “Provider Report” as input to ChatGPT 4’s API to generate an **AI-Based Plan of Care** for patients and doctors.

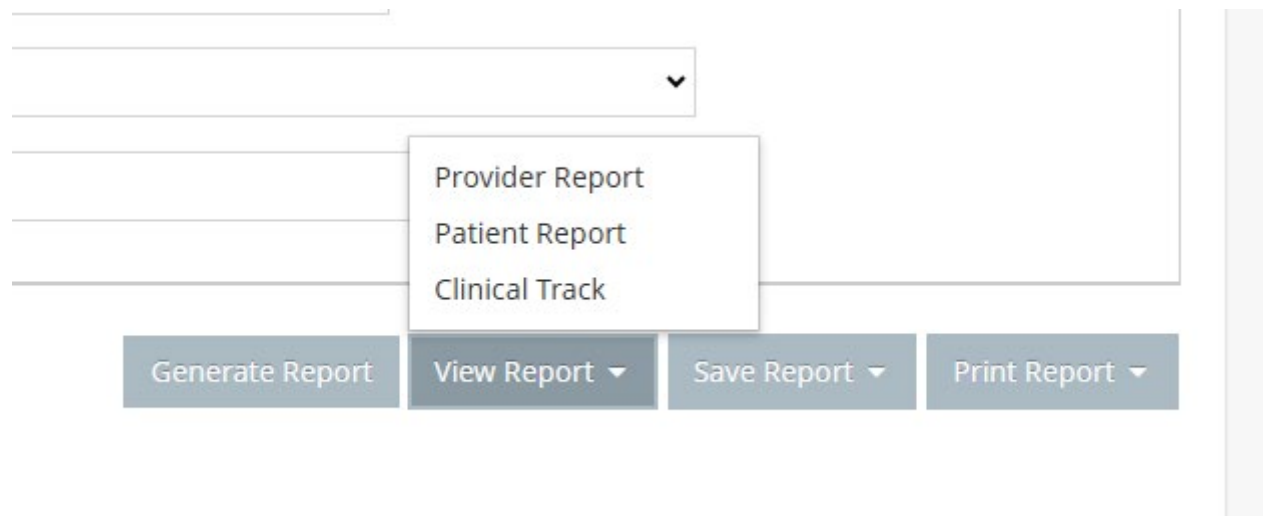
### Where to place Menu items

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Place this new entity, called “AI Care Plan” on every report menu item on:

- PreventONE /tablet
- THEO II /theo
- ConnectONE /portal

Here are the current menus where this should be added, and the new entity should be added at the **BOTTOM** of each menu:



Add the new report entity at the bottom of “View Report”, “Save Report” and “Print Report” on all the modules listed above.

### Where to find the data

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Our current system writes an .html and .pdf file every time “Generate Report” is selected from the menu above. The preface of those files is the @Encounter\_ID from wellness\_eCastEMR\_Data.dbo.EncounterHistory.



### The paths for these files are:

For PreventONE (/tablet) (and I believe for ConnectONE /portal as well?)

- D:\app\wt1\tablet\reports example:
- D:\app\wt1\tablet\reports\637297.html where 637297 is the @Encounter\_ID

For THEO II (/theo):

- D:\app\wt1\theo\_project\reports example:
- D:\app\wt1\theo\_project\reports\637297.html where 637297 is the @Encounter\_ID

To find the file (in the path described above):

- Get the Encounter\_ID from your program
- Create the string: <encounter\_id>.html ex "637297.html"
- Use the path described above
- Open the 637297.html file and store the contents

### To find the patient that belongs to these files you would run these queries:

- With the @Encounter\_ID:  
SELECT \* FROM wellness\_eCastEMR\_Data.dbo.EncounterHistory WHERE Encounter\_ID =  
@Encounter\_ID
- From that SELECT, capture @Patient\_ID as a memory variable:
- Then with that variable established,

```
SELECT * FROM wellness_eCastEMR_Data.dbo.PatientProfile WHERE Patient_ID =  
@Patient_ID
```

### What part of the .html file to use

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You will not send the entire .html file into ChatGPT 4. The reason for this is that the file contains a header that has sensitive PHI in it and we CANNOT send PHI into a public domain like ChatGPT 4.

Additionally, the entire file has other sections at the bottom that are unneeded by ChatGPT 4.



Here is an example of a .html file contents:



New River Family  
789 Bayview Drive  
Cary, NC 28554  
P:919-833-8999  
F:910-223-9865

Matthew Burns  
23 Glen Dale Drive  
Apt 34a  
Grover City, WV 32005  
Account Number: **19648138**  
MRN: **22316**

Printed: **03/02/2015**

Patient Name: **Matthew Burns**

DOB: **04/10/1930**

Age: **75**

Rendering Provider: **Dr Pedro J Bennitto, MD**

DOS: **January 2, 2022**

### **Reason for Visit**

The purpose of this visit is the Medicare Annual Wellness Visit for the initial (first) annual wellness visit.

### **Problem(s)**

The patient reports the following problems: obesity, poor vision, dizziness, falling, joint pain, osteoporosis and osteoarthritis.

### **Allergy History**

The patient reports the following allergies: Demerol, cat hair, peanuts, poison ivy.

### **Medication History**

The patient's medication history is as follows: Sleep Medicine, Depression Medicine, Heart Medicine, Thyroid Medicine, Blood Thinner, Antibiotics, Synthroid .015 qd, Lipitor 20mg bid and Plavix 10mg qd.

### **Immunization History**

The patient's immunization history is as follows: Influenza (flu), Shingles (herpes zoster) and Diphtheria/Tetanus.

### **Family History**

The patient reports family history as follows: Type II Diabetes, hypertension, bleeding disorder, depression, arthritis, liver disease and no further information was provided on the patient's family history.

### **Social History**

The patient's tobacco use is as follows: current every day smoker, The patient's consumption (packs per day): 2, The patient's smoking history in years: 23 and there is no additional information on patient's smoking history. The patient's use of alcohol is as follows: beer, wine, liquor, The patient consumes the following quantity of alcohol (drinks per day): 3 and there is no additional information on the patient's use of alcohol.

### **Constitution ROS**

The patient complains of weight gain, fever, fatigue, weakness and dizziness.

### **Vitals**

The patient's vitals are as follows: Height (in): 65, Weight (lbs): 286, Systolic: 200, Diastolic: 95, Pulse: 80, Temperature: 98.5, O2 Saturation %: 94, Waist (in): 49, **BMI 42.**

### **Current Providers and Suppliers of Medical Care**

The patient's providers and suppliers of medical care are as follows: Marcus Wilson, MD (Cardiologist), Sierra Pickins, PhD (Psychologist), Case Western Hospital and Rex Pharmacy Five Points (Pharmacy).



## **Diet**

The patient's diet consists of 1-2 servings of nuts or berries per week, no servings of fruit per week, 2 servings of fish per week, 3 or more servings of red meat per week, no servings of green, leafy vegetables per week, 1-2 servings of soda with sugar per week, 1-2 servings of fried food per week, no servings of saturated fat food per week, no cups of coffee per day, no cups of tea per day and 1 aspirin each day.

## **Eyes**

Screening for macular degeneration: left eye normal, right eye **ABNORMAL**.

## **Exercise and Activity Level**

The patient's exercise and activity level consists of moderate exercise level, card games, social functions, dining out, volunteer work, gatherings with friends and church, synagogue, mosque, temple or other social functions.

## **Functional Capacity**

The patient was evaluated for their functional capacity. Pass/Fail results are as follows: The patient reports that they **have fallen in the last year**, sitting (**failed**), standing (passed), lifting (passed), carrying (**failed**), pushing (**failed**), pulling (passed), bending (**failed**), stooping (passed), squatting (**failed**), kneeling (passed), reaching (passed) and hand use (passed).

## **Safety**

The patient's safety was evaluated. The evaluation shows that the patient's safety awareness is as follows: the patient does not have handrails in their home and is not able to stabilize when walking at all times (**failed**), the patient sometimes or frequently walks on slippery surfaces without the ability to stabilize (**fails**), the patient understands when they are best able to drive and exercises caution when doing so, the patient locks their doors and windows and keeps lights on at night, the patient maintains steady contact with their family and the patient does not socialize and has few to no friends (**fails**).

## **MCI/Cognitive**

The patient was assessed for MCI/Cognitive responses and the results are as follows: eye movement (**failed**), walking and balance (passed), sense of touch (**failed**), The clock hands were set correctly to show 11:10 (passed), draw clock face with hands showing time (**failed**), name today's date and location (passed), ability to copy a design (passed), ability to follow a 3-step command (passed), remembering a list of 3 words (passed), ability to follow a written instruction (**failed**), ability to write a complete sentence (passed), ability to count backwards from 100 by 5 (**failed**), The patient (**failed**) the tuning fork neuropathy test in the left knee and the patient (**failed**) the tuning fork neuropathy test in the right knee.

## **Mental State and Potential for Depression (PHQ-9)**

The patient reports that they are happy with their family life. The patient's outlook on life is **negative**. The patient appears to be **moody, uneasy, anxious with a depressed state of mind, sad, empty and in a ready state of tears**. The patient appears to have an interest in activities that are enjoyable. The patient is **showing a reduction in their ability to move normally**. The patient's concentration is good. The patient is **unable to make decisions freely**. PHQ-9 Score: 8.

## **Observations**

The following may be of significance to the physician: **The patient is NOT taking their medications as prescribed**

## **Medical Decision Making**

**Speculative HCC RAF Coding for consideration (click to expand):**

MCI [[52-F03.90](#)], Major Depression, Mild [[58-F32.0](#)], RA [[40-M06.9](#)], BMI 42 [[22-Z68.41](#)],  
Heart Failure [[85-I50.9](#)], Test Diag [[101-000](#)]

## **Recommended Procedures, Treatments and Preventive Services:**

- Patient may have drinking habits that go beyond recommended levels. Alcohol Misuse assessment may be warranted (e.g., CAGE-AID) [G0442] and counseling [G0443].
- A Lipid Panel [80061] screening for CVD is recommended once, every five years.



- A CVD risk reduction visit [G0446] is recommended, once a year.
- Patient is a current smoker. Counseling to Prevent Tobacco Use [99406] [99407] may be warranted.
- A Fall Risk assessment may be warranted. [97750]
- A Cognitive Assessment may be warranted [97750]
- A Medication Review [99211] and Self Managing Counseling [97535] may be warranted
- Depression Evaluation and Management may be warranted [99212-99215]
- Vision Evaluation and Management, with a referral to an optometrist or ophthalmologist may be warranted [99212-99215]

## Risk Factors

RISK FACTOR	LEVEL	TREATMENT OPTIONS	ASSOCIATED RISKS
CVD	<b>Severe</b>	Continue monitoring BP, cholesterol, BMI.	Stroke/TIA
Cognitive Impairment	<b>High</b>	Continue cognitive impairment. Consider referral to neurologist.	
Colorectal Cancer	<b>Moderate</b>	Counsel patient on diet and exercise. Consider referral to registered dietician	
Depression	<b>High</b>	Continue monitoring signs of depression. Review of medications	
Diabetes	<b>Mild</b>	Continue monitoring blood glucose, lipids, BMI, waist. Counsel on diet and exercise	Retinopathy
Functional Capacity and Safety	<b>Severe</b>	Continue monitoring home safety, driving habits. Counsel on appropriate exercise. Consider referral to PT	Fall Risk
Osteoporosis	<b>Moderate</b>	Continue monitoring bone density. Consider calcium supplement. Counsel on diet and exercise	Fractures
Prostate Cancer	<b>Moderate</b>	Continue monitoring PSA	
Stroke/TIA	<b>Moderate</b>	Continue monitoring BP, aspirin intake. Counsel on diet and exercise	CVD

## Written screening schedule - 5 year Plan

CATEGORY	GOALS
Blood Pressure	Measure at least yearly; goal 140/90; may be recommended to be lower if diabetes, age <65 or other medical conditions. Discuss with your medical provider
Weight/BMI	Measure every visit; BMI goal 18-25
Vaccinations	Seasonal flu vaccine yearly; Pneumovax 23 once after age 65, may be recommended prior to 65 depending on medical conditions; discuss with your provider, Prevnar 13 once after age 65; Shingrix for adults 50 and older; Tdap once then Td every 10 years; discuss Covid-19 vaccination and booster with your medical provider
Lab Orders	Lipid testing once every 5 years; more frequently if being treated for elevated cholesterol, diabetes, heart disease or vascular disease; discuss with your medical provider



Colon Cancer Screening	Colonoscopy every 10 years starting age 50 until age 75-80; more frequently and possibly at a younger age depending on family history or medical conditions; discuss with your provider who may offer other testing options
Abdominal Ultrasound	If you have a family history of abdominal aortic aneurysms, or you're a man 65-75 and have smoked at least 100 cigarettes in your lifetime, you are at greater risk for an aortic aneurysm; discuss this once only screening with your provider
Bone Density Testing	For individuals who are at risk, bone density testing may be every 2 years. Follow up testing depends on the initial test result and ongoing medical conditions
Hepatitis C Testing	Recommended once for people born between 1945-1965; discuss with your provider

## Personalized Health Advice

CATEGORY	RECOMMENDATIONS	ACCOMPLISH BY
Weight Loss	<ul style="list-style-type: none"> <li>Try to reduce your sugar intake. Sugar contributes to weight gain, and increases your waist size. Consider whole grain foods, fresh fruits and vegetables, teas, and water, without added sugar.</li> <li>Fried food tastes good, but it increases your "bad" cholesterol, and puts you at high risk for heart disease and heart attack. Substitute baked or grilled foods, chicken, fish, and vegetables, whenever you can.</li> </ul>	As directed by your provider:
Nutrition	<ul style="list-style-type: none"> <li>Weight gain can be reduced by increasing your exercise level and keeping your meal portions small. Eat small meals 4-5 times per day instead of 3 large meals. Skip sugary desserts and snacks. Enjoy fresh fruits and vegetables.</li> <li>A small handful of nuts per day can help reduce your risk of heart disease, lower your "bad" cholesterol and increase your "good" cholesterol.</li> <li>Adding fresh fruit and vegetables to your diet can help you shed pounds and lower your risk of heart disease. Eat a piece of fresh fruit or a small salad before lunch and dinner to help reduce the size of your meals.</li> <li>Green leafy vegetables should be a part of your daily diet. Try to eat 1-2 servings of these every day to help your heart, reduce your risk of diabetes, and manage your weight.</li> </ul>	As directed by your provider:
Fall Prevention	<ul style="list-style-type: none"> <li>You have an increased risk for falls. Meet with your provider for testing to assess your gait, strength, and balance, review your medications, and consider other factors that affect your risk for falls. Make goals to reduce your risk for falls.</li> <li>Slips, trips, and falls are common causes of injuries. Spills, ice, snow, rain, loose mats, rugs, clutter, lack of handrails and poor lighting are some of the common causes of slips, trips, and falls. Falls are often due to these hazards that are easy to overlook but easy to fix. Talk to your provider about a Home</li> </ul>	As directed by your provider:





	Safety Assessment, and how to check your home for safety.	
Cognition Improvement	<ul style="list-style-type: none"> <li>Talk to your provider about your inability to make decisions.</li> <li>Dizziness increases your risk for falling. Tell your medical provider about your dizziness.</li> </ul>	As directed by your provider:
Depression	<ul style="list-style-type: none"> <li>Talk to your medical provider about evaluating your ability to clearly think, learn, and remember.</li> <li>Your outlook on life is important to your well-being. If you have a negative outlook, you may have early signs of depression. Talk to your medical provider.</li> </ul>	As directed by your provider:
Physical Strength	<ul style="list-style-type: none"> <li>Your age is 65 years or older. With age, we lose muscle tone, and our bones become weaker. Your medical provider can discuss the things that you can do to help strengthen your bones and muscles.</li> <li>You had difficulty bending at the waist. Your provider will discuss this with you separately.</li> <li>You had difficulty carrying an object. Your provider will discuss this with you separately.</li> <li>You had difficulty pushing with your arms. Your provider will discuss this with you separately.</li> <li>You had difficulty sitting down. Your provider will discuss this with you separately.</li> <li>You had difficulty squatting down. Your provider will discuss this with you separately.</li> <li>Your provider will discuss your reduction in physical movements with you.</li> <li>You have an increased risk for osteoporosis. Talk to your provider about ways you can strengthen your bones.</li> </ul>	As directed by your provider:
Referrals	<ul style="list-style-type: none"> <li>Tell your provider about your vision. It may be necessary to refer you to an eye specialist for follow-up care.</li> <li>Talk to your provider about your agitated state of mind.</li> </ul>	As directed by your provider:

### Include and Exclude

- You will EXCLUDE the header information from this file (the top part that is not highlighted) when you send data to Chat GPT 4.
- However, you WILL print that header on your final report. You just **will not send** it to Chat GPT 4.
- You will INCLUDE all text that is highlighted.
- You will EXCLUDE the **Risk Factors** table.
- You will EXCLUDE **Written screening schedule - 5 year Plan**
- You will EXCLUDE **Personalized Health Advice**



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### How to send the instructions to Chat GPT's API:

Send **this instruction** to Chat GPT 4 along with the text you extracted from the .html file:

**Create a clinical care plan for this patient using the following screened data  
<.html text that you extracted from the .html file>**

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### How to prepare the final report:

1. **Generate a header that is identical to the header you prepared for the Clinical Tracks report:**



New River Family  
789 Bayview Drive  
Cary, NC 28554  
P:919-833-8999  
F:910-223-9865

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Matthew Burns  
23 Glen Dale Drive  
Apt 34a  
Grover City, WV 32005  
Account Number: **19648138**  
MRN: **22316**

Printed: **03/02/2015**  
Patient Name: **Matthew Burns**  
DOB: **04/10/1930**  
Age: **75**  
Rendering Provider: **Dr Pedro J Bennitto, MD**

DOS: **January 2, 2022**

2. **Then add the result you got back from ChatGPT 4's API:**

Based on the provided clinical data, here is a clinical care plan for the patient:

### Clinical Care Plan

#### 1. Obesity Management

- **Assessment:** BMI of 42 indicates severe obesity.
- **Intervention:**
  - Referral to a registered dietitian for personalized diet counseling to address poor dietary habits (high red meat, low fruits and vegetables).
  - Encourage increased physical activity tailored to moderate exercise tolerance.
  - Goal-setting for weight reduction through lifestyle modifications.
  - Consider pharmacotherapy (e.g., Orlistat) or bariatric surgery referral if appropriate.





## 2. Vision and Eye Health

- **Assessment:** Screening for macular degeneration shows abnormalities in the right eye.
- **Intervention:**
  - Referral to an ophthalmologist for further evaluation and management of macular degeneration.
  - Prescription update for corrective lenses as needed.

## 3. Dizziness and Falls Risk

- **Assessment:** History of dizziness, falling, and functional capacity limitations.
- **Intervention:**
  - Comprehensive evaluation by a neurologist to assess vertigo and gait instability.
  - Occupational therapy assessment for home safety modifications (installing handrails, removing slip hazards).
  - Physical therapy referral for balance exercises and fall prevention strategies.

## 4. Joint Pain (Osteoarthritis and Osteoporosis)

- **Assessment:** Reports of joint pain and osteoporosis.
- **Intervention:**
  - Rheumatology referral for management of osteoarthritis and osteoporosis.
  - Pain management strategies (physical therapy, analgesics as needed).
  - Bone density testing and optimization of calcium and vitamin D intake.

## 5. Medication Adherence

- **Assessment:** Patient is not taking medications as prescribed.
- **Intervention:**
  - Medication reconciliation with pharmacist to address adherence issues and potential interactions.
  - Simplification of regimen if possible.
  - Patient education on importance of adherence and addressing concerns about side effects.

## 6. Mental Health and Cognitive Assessment

- **Assessment:** PHQ-9 score of 8 indicates mild depressive symptoms; cognitive impairment noted in several domains.
- **Intervention:**
  - Referral to psychologist or psychiatrist for further evaluation and management of depression.
  - Cognitive rehabilitation therapy for memory and cognitive deficits.
  - Regular follow-up and monitoring of mental health status.



## 7. Lifestyle Modifications

- **Assessment:** Current diet includes high sugar intake and inadequate fruit and vegetable consumption.
- **Intervention:**
  - Nutritional counseling to improve diet quality (increase fruits, vegetables, decrease red meat and sugary drinks).
  - Smoking cessation counseling and support.
  - Alcohol moderation advice, considering its interaction with medications.

## 8. Safety and Home Environment

- **Intervention:**
  - Home safety assessment with recommendations for modifications (handrails, non-slip mats).
  - Educate patient and family on fall prevention strategies and environmental modifications.

## 9. Follow-up and Monitoring

- **Plan:**
  - Regular follow-up visits with primary care physician and specialists as indicated (e.g., quarterly for weight management, bi-annual for mental health, annual for vision and bone health).
  - Monitoring of vitals, weight, BMI, and functional assessments.

## 10. Education and Support

- **Intervention:**
  - Patient and caregiver education on chronic disease management, medication adherence, and lifestyle modifications.
  - Support groups or community resources for social engagement and mental health support.

## Conclusion

This care plan addresses the patient's multiple chronic conditions comprehensively, focusing on holistic management including medical, lifestyle, and safety considerations. Regular monitoring and interdisciplinary collaboration will be essential to optimize outcomes and enhance quality of life.



## Testing

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Once you have completed your coding, we will run parallel sessions to test the output:

- Manually enter the instructions and text into the web version of Chat GPT 4
- Let your program enter the instructions and text into the API version of Chat GPT 4

The results should be identical for satisfactory testing results.