

# **A Survey of Participants Satisfaction of a Nurse Practitioner-led Fast-track Outpatient Clinic for Rhythm and Conduction Disorder**

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## **Authors' contributions**

*This work was carried out in collaboration between all authors. Authors SAMS and RB designed the study, performed the statistical analysis, wrote the protocol and author SAMS wrote the first draft of the manuscript. Authors RB and PvD managed the analyses of the study. Author PvD managed the literature searches. All authors read and approved the final manuscript.*

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## **ABSTRACT**

**Background:** Nurse-led outpatient clinics for acute and chronic disorders are increasingly growing but data on nurse-led fast-track clinic for rhythm and/or conduction disorders (FT-RCD) are lacking.

**Aims:** With a nurse-led fast-track clinic for rhythm and/or conduction disorders we aimed to enhance accurate diagnostic course with high patient satisfaction.

**Methods:** With the initiation of a nurse-led FT-RCD we evaluated timely diagnosis for patients with complaints of palpitation, syncope, presyncope and fatigue who were given rapid access to diagnostics. In all patients, a range of non-invasive cardiac investigations was performed including ECG, trans-thoracic echocardiography (TTE), laboratory analysis, exercise tolerance testing (ETT), ambulatory ECG monitoring and chest X-ray. General practitioner (GP) initiates the process by faxing a referring letter requesting fast track diagnostics for patients suspected of rhythm and/or conduction disorders. A questionnaire, appointments and schedule of various investigations are sent

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by the doctor's assistant (DA) to the patient. The nurse practitioners (NP) take medical history, perform physical examination and conduct an ETT. All results are reviewed by a cardiologist and final diagnosis is established.

**Results:** A total of 483 patients were investigated. Of those, 283 patients (58.6%) were reassured and discharged. The mean lead time (5.5 weeks) of FT-RCD to diagnosis was shorter compared with regular care (8 weeks), 31% reduction of time. Ten patients (10/483 = 0,20%) were analyzed by tilt table test for assessment of postural orthostatic tachycardia syndrome, eight patients (8/483 = 0,16%) were forwarded for analysis of obstructive sleep apnea syndrome and six patients (6/483 = 0,12%) were referred for electrophysiological studies. Survey was sent to participants after they attended the nurse-led clinic. A total of 233 attendees responded (48.2%). The nurse-led clinic was graded as good-excellent by 88% of respondents.

**Conclusions:** The majority of referred patients to fast-track diagnostic facility are reassured and referred back to the primary care sector. Access to a nurse-led fast-track diagnostic facility considerably reduces diagnostic intervals with good to excellent satisfactory experience evaluated by patients.

*Keywords: Nurse-led outpatient clinic; fast-track clinics; rhythm and conduction disorders; participants satisfaction.*

## 1. INTRODUCTION

Nurse-led out-patient clinics are widely applied in acute [1,2] and chronic [3,4] disorders and are getting more popular in patient care owing to current financial cutoffs. There is growing substantial international evidence that nurse-led clinics provide a comprehensive level of service of patient teaching and education, quality of life and follow-up of different acute conditions and chronic disease entities [1,2,3,4].

In our department in 75% of outpatient cardiac patients, through the regular care pathway, the lead time to diagnosis was 8 weeks. Three planned hospital visits are required. In early 2014, we started a nurse-led FT-RCD. The team included cardiologists, two experienced cardiology-trained nurse practitioners and doctors assistants. The main objective is to provide high quality, fast and reliable diagnostics to patients with possible rhythm and/or conduction disorders in one session and according to current guidelines [5,6]. Of course, increasing patient satisfaction is considered highly important. From 2014 to 2016 an extension occurred from two to three day part sessions per week. In total, 483 patients were analyzed at the FT-RCD.

Nurse-led outpatient clinics for acute and chronic disorders are increasingly growing.

Not only nurse-led outpatient [7] clinics are booming but also in-hospital [1] nurse-led practices are increasingly evolving. In a nurse-led fast-track outpatient clinic, the patient receives all necessary examinations on a part of the day basis, a diagnosis is made and a

treatment plan is issued. The nurse practitioner has an important position throughout the entire course of FT-RCD. Expertise, ownership, development, organization and collaboration with other disciplines are important and necessary features for the NP operating at fast track clinic [5,6,7].

In the late nineties of last century, patient satisfaction in a nurse-led clinic has been tested in patients with rheumatoid arthritis either at a physician specialist-led clinic or a nurse-led clinic, reporting significant increase in overall satisfaction at the nurse-led clinic [8]. In another study by Koksvisk et al. [9] they demonstrated in 68 patients with inflammatory arthritides monitored either by physician-led or nurse-led clinic, assessed by Leeds Satisfaction Questionnaire, that overall satisfaction in the nurse-led clinic is prevalent without deterioration of clinical status [9]. Considering patient satisfaction with nurse-led clinic in an outpatient clinic for oncology care, patient satisfaction was stable over time. More than 90% rated the nurse practitioner as good, the waiting time as acceptable and the length of appointment as sufficient [10]. Recently, in a systematic review of 3965 participants, Randall et al., emphasized a positive (subjective and objective) patient satisfaction of nurse-led clinics in comparison with physician-led clinics [11]. The impact of atrial fibrillation effect on quality of life is studied in a comparison of nurse-led care versus standard care practice and the enrollment has already started on August 2016 that will be completed by Spring 2018 [12]. De Thurah et al., found in a meta-analysis (723 participants) that after one year follow-up no difference existed of

disease activity between nurse-led and physician-led clinic in patients with rheumatoid arthritis (RA). A suggestion is made to promote the future implementation of nurse-led clinics for follow-up of RA patients under the supervision of rheumatologist [13]. In our experience, the FT-CRD had a good rating with NP scoring 87.5%, cardiologist scoring 79.3%, waiting time assessed as 88% and length of duration rating of 93.6%. Currently, due to lack of publications regarding patient satisfaction of participants analyzed for rhythm and/or conduction disorders, we sought to present our experiences.

To evaluate adequacy of both nurse-led outpatient clinic for assessment of rhythm and/or conduction disorders and participant satisfaction in the context of fast-track diagnostics. Results are discussed and assessment of participant satisfactions are presented.

## 2. METHODS

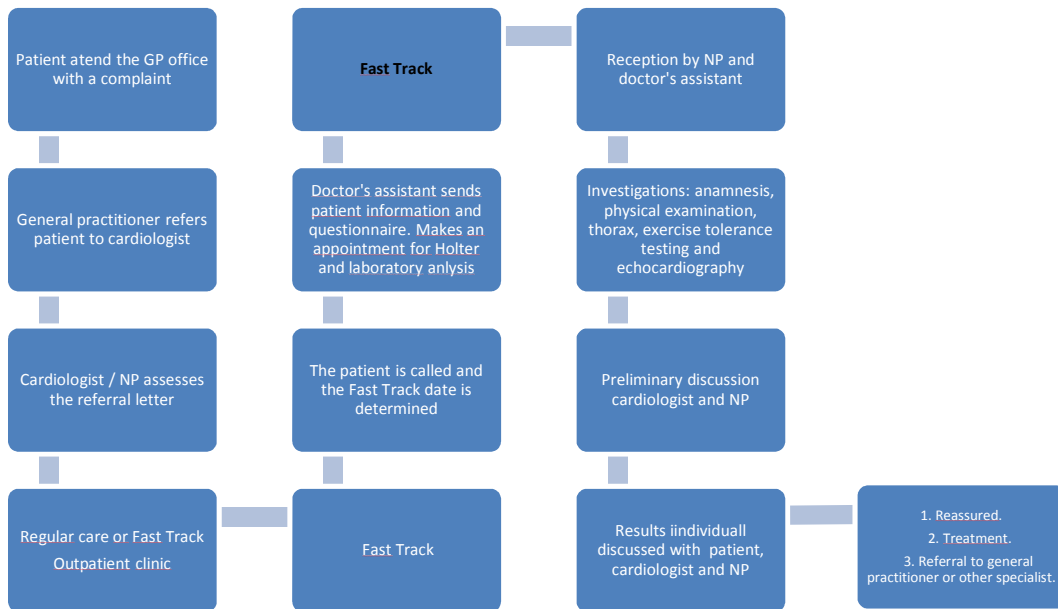
Since November 2014, our hospital has a nurse-led fast-track outpatient clinic (Fig. 1).

Patients with the following complaints were referred to the FT-RCD: presyncope and syncope, dizziness, palpitation complaints, extrasystoly, irregular heartbeat, not yet proven

atrial fibrillation, screening request for familial electrical heart disease (Table 1).

### 2.1 Processing and Routing of FT-RCD Outpatient Clinic

The nurse-led fast-track process begins with a referral letter sent by fax from the General Practitioner. The cardiologist determines the referral letter for correct indication. In principle, patients with FT-RCD will only be eligible if they are new referrals. Triage of referrals is done by the cardiologist. After the first triage, the referrals are checked by a nurse practitioner. The doctor's assistant calls the patient providing information about the investigations and time schedule. After informing the patient, the patient will always be given the opportunity to choose a regular appointment. Accordingly, the doctor's assistants will schedule the arrangements. In the pre-visit phase, a 24 or 48 hours, depending on availability, Holter registration will take place together with laboratory determinations (Hb, leukocytes, platelets, renal function and thyroid function). Also, the patient is sent a questionnaire (Fig. 2) which can be completed in writing and also digitally (via DigiD). The questionnaire raises questions about patients' complaints, such as the nature of the complaint, the frequency and the situations or conditions in which it occurs.



**Fig. 1. Processing and routing of fast track outpatient rhythm and conduction disturbances**  
*GP= general practitioner, NP= nurse practitioner*

**Table 1. Reason for referrals to the fast track outpatient clinic for rhythm and conduction disorders**

Referrals	n = 483 (%)
Palpitation	336 (69.6)
Syncope	64 (13.3)
Presyncope/dizziness/fall	50 (10.4)
Screening	14 (2.9)
Bradycardia	4 (0.8)
Dyspnea	4 (0.8)
Rapid heart rate	4 (0.8)
Presumed abnormal ECG Exclusion of bigeminies (1x) and long QT interval (2x)	3 (0.6)
Irregular heart rate	2 (0.4)
Fatigue	2 (0.4)
Total	483

Please fill in this questionnaire and send us back in enclosed envelope

Questionnaire for the outpatients' cardiac arrhythmia \* - circle the correct answer

Date: ..... Name: ..... M / F Date of birth: Age: .....  
 .year. Weight: ..... kg Length: .....cm

Description of complaints:

How often do you suffer from palpitations (number of episodes per day / week / month / year?):

Nature of the palpitation:

How long does such an episode last: (min. ----- hours ----- days -----)

Do you often have to urinate during or after an attack of palpitations? Yes No\*

Are you dizzy during the complaints? Yes No\*

Do you feel that you are about to faint? Yes No\*

Do you experience chest pain?: yes / no \*

Are you generally short of breath or faster tired? Yes No\*

Do you retain fluid? Yes No\*

Do you drink alcohol?; ... ..glasses / day. Do you smoke?; ..... sig. / Day

Do you suffer from sleep disorders (excessive snoring or nocturnal respiratory arrest according to your partner)?:  
 yes / no \* If so, are you being treated for this? -----

Do you sport? how many times a week: ----- What do you do for sport? -----

Can you cycle on an exercise bike? Yes No\*

Is there cardiovascular disease in the family (father, mother, brothers and sisters)? Yes No\*

Who?	At what age did this occur?	What?

Do you have diabetes? Yes / no / I do not know \*

Do you have an elevated cholesterol level? Yes / no / I do not know \*

Do you have elevated blood pressure? Yes / no / I do not know \*

Social: married / widow / widower / living alone \*. Children? Number.....

Occupation: ..... / retired yes / no \*

Allergy: ..... Previous history:

Condition	Year	Treatment

Medication:

Drug	How many mg	How often per day

**Fig. 2. Questionnaire for fast track outpatient rhythm and conduction disturbances**

## 2.2 Staff of the FT-RCD Outpatient Clinic

The team consisted of cardiologists, experienced cardiology-trained nurse practitioners and doctor's assistants. The cardiologists have primary responsibility for the clinic. The clinic is managed by NP (Master Advanced Nurse Practitioner) with the assistance of qualified doctor's assistants.

The fast-track takes place during a day care program, with all care concentrating around the patient and optimal preparation for the examinations. On the day of the visit, the data is verified. In a fast-track, a group of four patients will launch with a plenary introduction session by the NP's explaining the content of the research program. The doctor's assistant will ensure coordination of the examinations, chest X-ray, exercise tolerance testing and echocardiography. Doctor's assistants perform an ECG and measure blood pressure. The NP consult including medical history and special anamnesis in combination with assessment of the

questionnaire. Subsequently physical examination and exercise tolerance testing are performed in all patients. Transthoracic echocardiography is performed by an analyst and assessed by the cardiologist. Once all investigations have been carried out, evaluation of the results by both the NP and the cardiologist takes place. Subsequently, an individual consultation will be done for each patient conducted by cardiologist and NP, and an evolved treatment plan and follow-up are proposed. The doctor's assistant who is also present at the interview immediately reporting the findings and the treatment proposal that is being processed in a letter to the GP. All patients will be sent a copy of this letter home with a survey (Fig. 3) regarding their experiences and degree of satisfaction. In this survey, the participants are requested to give feedback on their findings and their experiences throughout the entire trajectory of the fast track, such as time, privacy and experience during the investigations and consultations.

Dear participant

You recently visited our ZGT Fast Track outpatient clinic Rhythm Disorders. We attach great importance to your opinion about the care provided to you, so we ask you to fill in this evaluation form. Among other things, we want to continue to improve the care provided to our patients. Circle the answer for each question that is the best according to your experience. You can also add some comments at the bottom of this form. Send the completed form in the attached reply envelope to ZGT. A stamp is not required.

Thank you for your time and cooperation

Circle your choice:

1. I found the information provided in advance before the visit:

Excellent	Good	Sufficient	Moderate	Bad
-----------	------	------------	----------	-----

2. The time between registration by a GP / specialist and my admission to the FTP-RS amounted to: (complete) \_\_\_\_\_ weeks.

3. The length of this waiting time, I found it:

Too long	Too short	Neutral
----------	-----------	---------

4. The time and the reception on the FT-RCD was in my experience:

Excellent	Good	Sufficient	Moderate	Bad
-----------	------	------------	----------	-----

5. I found the accommodation of the FT RCD:

Excellent	Good	Sufficient	Moderate	Bad
-----------	------	------------	----------	-----

6. The extent to which my privacy was taken into account, I experienced as:

Excellent	Good	Sufficient	Moderate	Bad
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7. The interview and the way in which the physical examination was carried out, I experienced as:

8.

Excellent	Good	Sufficient	Moderate	Bad
-----------	------	------------	----------	-----

9. Undergoing the echocardiographic examination, I experienced as:

Excellent	Good	Sufficient	Moderate	Bad
-----------	------	------------	----------	-----

10. I experienced the bicycle exercise testing as:

Excellent	Good	Sufficient	Moderate	Bad
-----------	------	------------	----------	-----

11. The way in which the cardiologist informed me about my results, is:

Excellent	Good	Sufficient	Moderate	Bad
-----------	------	------------	----------	-----

12. I went home with a reassured feeling:

Yes	No	Neutral
-----	----	---------

13. I experienced the total duration of my visit to the Fast Track outpatient clinic:

Too long	Too short	Neutral
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14. I would rate my visit to the Fast Track outpatient clinic with the following score (1 is the worst assessment, 10 is the best rating):

1	2	3	4	5	6	7	8	9	10
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**Comments or suggestions**

Please fill in any comments or suggestions below to improve our care:

**Contact**

May we possibly contact you on the basis of this evaluation form you have completed? If you want to offer us this option, enter your name and date of birth below. Of course you are not obliged to do this.

Name: ..... date of birth: .....

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3. Select your doctor from the list
4. Click on the "Value" butts

Furthermore, it goes easily.

We thank you for the effort to take.

**Fig. 3. Survey, evaluation form for fast track outpatient rhythm and conduction disturbances**

**3. RESULTS**

From 3 November 2014 until 31 December 2016, we have seen a total of 483 patients. Regarding the year 2015, we experienced an increase of over 33%. More women (61.6%) were seen than men. The mean age was 54 years (range 17-93 yrs). Patients with palpitation complaints were most frequently referred to the FT-RCD (69.5%) (Table 1).

**3.1 Lead Time and Visits to the FT-RCD Clinic**

The referral fax was processed within 1.6 days. In the regular outpatient clinic, the lead time to diagnosis was 8 weeks. The lead time to diagnosis in the FT-RCD was 5.5 weeks. This is a reduction of 31%. With the application of one-Sample Statistics, the mean of the duration is 5.5 weeks significantly deviates from the lead time of

8 weeks. The mean difference is -2.5 with a confidence interval of the difference from -2.7 to -2.2. The corresponding *P* value is <0.001. It is worth mentioning that the venous puncture for laboratory testing, the planning and the application of the ambulatory Holter monitoring have been processed in this time. The FT-RCD requires only two hospital visits.

### 3.2 Electrocardiography

Three patients were referred for alleged ECG abnormalities. Upon repeating ECG we found no remarkable disorders.

### 3.3 Exercise Tolerance Testing (Table 2)

ETT was normal in 78.4% of patients. In 12.2% the test was equivocal. In 9.4% of cases, the abnormal findings were of ischemic changes or rhythm disorders.

### 3.4 Echocardiography

This was normal in 78.5% of cases. In some cases, follow-up was necessary for clear relationship with hypertension.

### 3.5 Chest X-ray

It was normal in 78.5% of the cases. In few cases, characteristics of chronic obstructive pulmonary disease were detected. In five other cases, the pulmonary physician was consulted, but after analysis, the patients were reassured.

### 3.6 Laboratory Investigations

Laboratory tests were abnormal in nine patients who were referred to another specialty for further analysis. Two patients (n=2) were referred to the Ear-nose-throat (ENT) outpatient clinic, one (n=one) to the gastrointestinal tract-physician, the other six patients (n=six) to the internal medicine and endocrinology outpatient clinic (4x dyslipidaemia, 1x low hemoglobin level and 1x thyroid disorder). In all other cases of laboratory discrepancies, the GP was advised for further analysis and treatment.

### 3.7 Back Referral to the Primary Care Sector or Referral to Other Diagnostic Facilities

Eventually, 283 patients (59%) could be reassured and referred back to their GP (Table3). It is remarkable to mention that in the

year 2016, 29.5% of patients were referred back to the GP for control or regulation of hypertension.

### 3.8 Obstructive Sleep Apnea Syndrome (OSAS)

Eight patients (8/483 = 0,16%) were referred for exclusion or detection of obstructive sleep apnea syndrome. In four patients, diagnosis of OSAS could be established and could be excluded in two other patients. Two patients quit from further analysis of OSAS.

### 3.9 Ambulatory ECG Recording and Referral to Electrophysiological Studies (EPS)

Six patients (6/483 = 0,12%) were referred for electrophysiological studies, because of supraventricular tachycardia (n=one, Wolff-Parkinson-White syndrome (WPW)), n=four, Atrio-Ventricular Nodal Re-entry Tachycardia (AVNRT) and n=one, Atrio-Ventricular Re-entry Tachycardia (AVRT) for which n=four, radio frequency (RF) ablation occurred. In two patients watchful waiting policy was followed.

### 3.10 Postural Orthostatic Tachycardia Syndrome (PoTS)

Ten patients (10/483 = 0,20%) were directed to tilt table test for assessment of postural orthostatic tachycardia syndrome.

### 3.11 Survey of Participants Satisfaction and Assessment of Quality of the FT-RCD (Fig. 4)

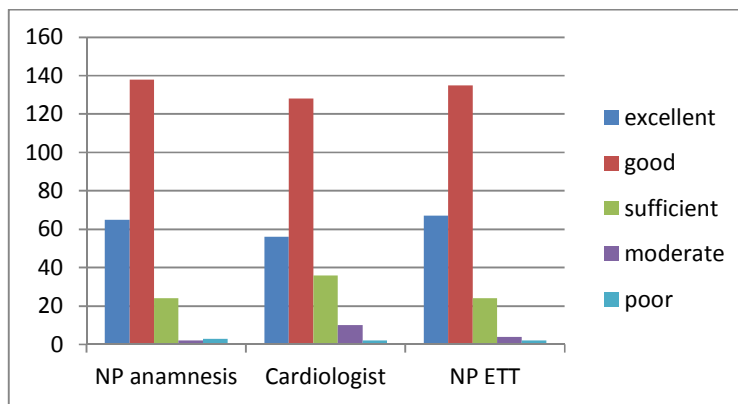
A survey for participant satisfaction was sent to all participants. Of the 483 patients, 233 have returned the survey (48.2%). Regarding the quality of the FT-RCD, 61.8% of respondents showed that FT-RCD was good. Approximately one-quarter (26.2%) of respondents gave this an excellent grade. 10.7% of respondents found this to be sufficient or satisfactory. The total duration of the FT-RCD was 3.5 to 4 hours. This was considered neutral by 88% of respondents. 5.6% of respondents thought it was good enough and 6.4% experienced this as too long. With regard to the final interview, 95% of respondents were satisfied. The speed, examinations and diagnosis on one part of the day are experienced as very positive. The majority of respondents (98.2%) graded the entire FT-RCD trajectory for 8.1 scale. In this case, 98.2% of respondents gave a

**Table 2. Results of investigation of fast track outpatient clinic for rhythm and conduction disorders**

	Normal (%)	Abnormal (%)	Equivocal (%)
Exercise tolerance testing	78.4	12.2	9.4
Echocardiogram	78.5	21.5	-
X-thorax	78.5	21.5	-
Ambulatory Holter monitoring	99.9	0.1	-

**Table 3. Outcomes of fast track outpatient clinic for rhythm and conduction disorders**

	n = 483	%
Reassurance/ referral back to general practitioner	283	59
Newly initiated medication	78	16
Revision/follow-up	61	13
Implantable loop recorder	11	0.23
Cardiobeeper	4	0.08
Referral to electrophysiology unit	6	0.12
Hypertension	6	0.12
Coronary angiography	3	0.06
Pacemaker implantation	2	0.04
Cardiomyopathy	1	0.02
Genetic counseling	1	0.02
Head-up-tilt for assessment of postural orthostatic tachycardia syndrome	10	0.20
Obstructive sleep apnea syndrome	8	0.16
Referral to other specialty		0.19
Ear-nose-throat clinic	2	
Internal Medicine/gastro-intestinal tract	7	



**Fig. 4. Participants experience of fast track outpatient rhythm and conduction disturbance**

*NP= nurse practitioner, ETT= exercise tolerance testing*

minimum of 6 or more. The speed, examinations and diagnosis on one part of the day are experienced as very positive. The contact with the NP was experienced as excellent (87.5%) and for the cardiologist this was 79.3% (Fig. 4).

Participants satisfaction with nurse-led outpatient clinics was rated as excellent by the majority of patients (87.5%). Around 93.6% found the total duration of the fast-track (3.5 to 4 hours) as

acceptable. Approximately 61.8% rated the information given at the nurse-led clinics as sufficient.

#### 4. DISCUSSION

The main outcomes of our findings are that the majority (59%) of referred patients to our nurse-led fast-track diagnostic facility of rhythm and conduction disorders are reassured and referred



back to the primary care sector. Access to a nurse-led outpatient clinic significantly reduces (31%) diagnostic intervals with good to excellent satisfactory experience (88%) evaluated by the majority of (88%) participants.

#### **4.1 Literature Review of Nurse-led Clinics**

##### **4.1.1 Acute coronary syndrome (ACS), post-infarction and post cardiac surgery**

With regard to the in-hospital setting, clinical nurse specialists programs for stable post-infarction patients have been proven to be feasible and beneficial resulting in better outcomes than conventional care performed by cardiology residents regarding recurrent myocardial infarction and decreased significantly the length of hospital stay [1]. The same is held true for nurse specialists conducted programs for post-operative patients recovering from cardiac surgery or transferred from the coronary care after uncomplicated acute coronary syndrome to the general cardiology ward [2].

##### **4.1.2 Atrial fibrillation (AF)**

With respect to nurse-led clinics in atrial fibrillation, as early as 1998, Quinn described the safety of nurse-led elective direct current electric cardioversion (DC-ECV) of patients with AF admitted as day cases to a short-stay ward. The reported success rate was 54% (40/74) [14]. In 2004, Currie et al., reported on nurse-led DC-ECV without direct physician supervision but facilitated by an anaesthesiologist in a stand-alone day surgery unit with a success rate of 92% (131/143) of restoring sinus rhythm [15]. Shelton et al., reported their experience of nurse-led elective DC-ECV in 436 patients with persistent AF in a dedicated hospital day-unit conducted by trained specialist nurses accompanied with an anaesthesiologist reaching a success rate of 83.7% and adverse events of a less than 0.5%, predominantly transient bradycardia which resolved within 72 hours. Discharge of 99.6% of all patients was achieved the same day. They reported no mortality [16]. In the United Kingdom, outpatient nurse-led elective DC-ECV for symptomatic persistent AF is associated with cost reduction of 61% [7]. The impact of AF effect on quality of life will be studied in a comparison of nurse-led care versus standard care practice conducted by Smigorowsky et al. the enrollment has already begun August 2016 and will be completed by Spring 2018 [12].

##### **4.1.2.1 Stable bronchiectasis**

In the early years of the current century, Sharples et al., compared in a randomized manner 80 patients between nurse-led or respiratory physician-led clinics. The reported data showed a better health related quality of life and slightly more hospitalization in the nurse-led clinic, both were statistically not significant [17].

##### **4.1.3 Hypertension**

Regarding nurse-led hypertension clinic, such nurse-led clinic in general practice has proven efficacious reporting reduction of systolic blood pressure in 46% of enrolled subjects [4].

##### **4.1.4 Oncology care**

Addressing the oncology care, nurse-led clinic for rehabilitation of cancer female patients with gastrointestinal side effects after pelvic radiotherapy proved to be efficacious by improving patients quality of life, enhancing psychosocial well being and giving continuity for the long-term cancer care [18]. In a comparison of nurse-led follow-up of patients with lung cancer versus conventional medical follow-up; patient acceptability of the nurse-led follow-up service was high (75%) with significant better scores of satisfaction subscales. Moreover, overall satisfaction of general practitioners was comparable in both follow-up groups [19].

##### **4.1.5 Rheumatoid arthritis (RA)**

Concerning RA, interview of patients with RA visiting nurse-led clinic revealed the need for a holistic approach to patient care [3]. Furthermore, Dougados et al., demonstrated in a prospective multicentre randomized controlled clinical trial (RCT) that nurse-led program is beneficiary on comorbidity management and patient self-assessment of RA disease activity [20]. Recently, in another RCT conducted by Larsson et al., compared nurse-led clinic versus physician-led clinic found that patients with low disease activity or in remission can be monitored with a reduced resource use and at a lower annual cost by a nurse-led service without difference in clinical outcomes [21].

##### **4.1.6 Chronic kidney disease (CKD)**

Assessment of patient satisfaction in a multicentre evaluation of nurse-led clinics of CKD, Coleman et al., reported that the majority

of the patients (84%) were highly satisfied with the quality of service provided by the nurse and suggested further optimization of communication strategies for better improvement of care [22].

#### 4.1.7 Diabetes mellitus

A multi-centre randomized controlled trial of a nurse-led intervention of life style modification program compared with standard care to reduce cardio-metabolic disorders and decrease future risk of cardiovascular disease and diabetes in subjects with metabolic syndrome was conducted in 2015 with an extended 5 year follow-up. This trial will provide evidence for contemporary data and information regarding the potential benefit and role of remote nurse-led clinics in primary prevention [23].

### 5. FUTURE PERSPECTIVE

In our institution, plans will be made to reduce the total duration of the FT-RCD to two hours. This will require logistical adaptation. If the ambulatory ECG recording and blood analysis could take place in general practitioner practice, the lead time would be reduced considerably.

### 6. LIMITATIONS

One possible limitation of this study is the small sample size. Furthermore, no analysis has been made for cost effectiveness of the current fast-track rhythm and conduction disorders nurse-led clinic in this secondary care setting.

### 7. CONCLUSIONS

Nurse-led fast-track clinic significantly reduced the lead time by 31% ( $P < 0.001$ ).

The number of planned hospital visits could be reduced to two visits.

Nearly 60% of patients on the FT-RCD could be reassessed and discharged immediately after completeness of the investigations.

A total of 93% of respondents were satisfied with the duration of the fast track clinic and 95% were satisfied with the final interview.

Finally, the overall satisfaction and rating of the nurse-led FT-RCD by the respondents was 8.1 on a scale from one to ten.

## 8. RECOMMENDATION

Further studies for analysis of cost effectiveness, satisfaction of specialist physician related to release of the work load may be needed.

## CONSENT

As per international standard or university standard, patients' consent has been collected and preserved by the authors.

## ETHICAL APPROVAL

It is not applicable.

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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