Digitally Assembled Referral Toolkit (DART)
Improving the quality and safety of suspected cancer referrals

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Background – Why DART?

- >30,000 2-week wait referrals from primary care each year
- 2016 audit – 48% referrals don’t meet minimum criteria
- Boxes not ticked can lead to delayed investigation / assessment
- Concerns from practices regarding delayed referrals / patient safety
Aim

Create a ‘standard’ for the two-week wait referrals process that improves the safety and quality of referrals by increasing the number of correctly completed referral forms to 100% within three months of introduction.
Preliminary analysis of process variation at x11 GP practices:

• To process forms: ‘Clicks’ mean = 20, ‘Time’ mean = 96secs
• 8 practices had recent SEA due to delayed/missed referrals
• GPs regard Word forms difficult to access / time consuming
• Handover (‘task’) issues most common reason for delays
Do - DART - Towards a referrals standard

- Digitally Assembled Referral Toolkit (DART)
- Centrally hosted forms, centrally updated, easily scalable
- Forms quick / easy to complete
- Forms remind clinicians if core clinical information incomplete
- Automatic setup of task attributes (for safer handover)
- Reduced risk of delayed referrals
- Acceptable to clinical and administrative staff
**Digitally Assembled Referral Toolkit (DART)**

**2 Week Wait Suspected Cancer Referrals**

ALL referring clinicians complete clinical questions

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Skin</td>
</tr>
<tr>
<td>2</td>
<td>Breast</td>
</tr>
<tr>
<td>3</td>
<td>Gynae</td>
</tr>
<tr>
<td>4</td>
<td>Lower GI</td>
</tr>
<tr>
<td>5</td>
<td>Urology</td>
</tr>
<tr>
<td>6</td>
<td>ENT</td>
</tr>
<tr>
<td>7</td>
<td>Neck Lump</td>
</tr>
<tr>
<td>8</td>
<td>Upper GI</td>
</tr>
<tr>
<td>9</td>
<td>Lung</td>
</tr>
<tr>
<td>10</td>
<td>Thyroid</td>
</tr>
<tr>
<td>11</td>
<td>Sarcoma</td>
</tr>
<tr>
<td>12</td>
<td>Oral</td>
</tr>
<tr>
<td>13</td>
<td>CNS</td>
</tr>
<tr>
<td>14</td>
<td>Haematology</td>
</tr>
<tr>
<td>15</td>
<td>HPB</td>
</tr>
</tbody>
</table>

**IMPORTANT REMINDER:**

After completing clinical questions, please **ALWAYS** click 'SAVE FINAL VERSION'.

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**PRINT LEAFLET**

- Patient 2WW Info

**TASK SECRETARY**

- Task secretary

**LAUNCH ERS**

- ERS (ChooseBook)

**ADMIN STAFF**

**ASSEMBLE FORM**

- 1 - 7
- 8 - 15

**NOTIFY**

- Notify Referrer

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Suspected urology cancer referral questionnaire

N.B. Please note that up to date patient contact details and a telephone number where the patient can be reached during office hours (08.00 am - 17.00 pm) are essential to allow us to offer your patient a date within seven days of your referral.

Referral Information - Suspected Cancer (please select)

1. Referral Information - Suspected Cancer
   - Prostate
   - Bladder
   - Renal
   - Testicular
   - Others

2. Imaging done?
   - Yes
   - No

Considerations:
Consider non-urgent referral for bladder cancer in people aged 60 and over who have recurrent or persistent unexplained urinary tract infection and microscopic haematuria that does not fit 2WW criteria.

13. Additional Comments:

14. Please confirm the patient is aware of the possible diagnosis of cancer?
   - Yes
   - No
Please confirm the patient is aware of the possible diagnosis of cancer? Yes

Please confirm the 2 week wait patient information leaflet has been given? Yes

Please confirm the patient is available and willing to attend an appointment within the next 14 days? If not, refer when willing and able to attend. Yes

Please confirm the patient is fit for straight to test? Yes

Referral Information – Suspected Cancer: Prostate

Please write results of the following investigations for Prostate, Bladder and Kidney referrals:

<table>
<thead>
<tr>
<th>Test</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSA</td>
<td>25 Jan 2017, 200 ug/L</td>
</tr>
<tr>
<td>WBC</td>
<td>25 Jan 2017, 100, 10^9/L</td>
</tr>
<tr>
<td>Creatinine</td>
<td>25 Jan 2017, 45 umol/L</td>
</tr>
<tr>
<td>eGFR</td>
<td>25 Jan 2017, 3 mL/min/1.73m^2</td>
</tr>
</tbody>
</table>

Imaging done: Yes

Prostate Cancer:

Prostate feels malignant on digital rectal examination Yes

PSA levels are above the age specific reference range* Yes
Study impact – Clinical information completed

<table>
<thead>
<tr>
<th></th>
<th>Baseline N=210</th>
<th>At 3/12 N=172</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical info</td>
<td>44 %</td>
<td>100 %</td>
</tr>
</tbody>
</table>

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Study impact – ‘blue box’ actions

Please confirm the patient is aware of the possible diagnosis of cancer
Please confirm the 2 week wait patient information leaflet has been given
Please confirm the patient is available and willing to attend an appointment within the next 14 days
If not, refer when willing and able to attend
Please confirm the patient is fit for straight to test
Study impact – ‘blue box’ actions

- **Baseline**
  - N=210

- **Post**
  - N=236

<table>
<thead>
<tr>
<th></th>
<th>Baseline N=210</th>
<th>Post N=236</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aware</td>
<td>31 %</td>
<td>94 %</td>
</tr>
<tr>
<td>Leaflet given</td>
<td>2 %</td>
<td>52 %</td>
</tr>
<tr>
<td>Checked 14 day</td>
<td>28 %</td>
<td>99 %</td>
</tr>
</tbody>
</table>

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DART – City-wide roll-out

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Study impact – time and cost savings

- Time to process forms reduced from 96 to 35 secs
- Clicks reduced from 20 to 14
- >500 hours freed up processing >30,000 forms (2016)
- Potential saving of >£100,000 annually
DART – Why has it succeeded?

• IT success? 20% Yes, 80% Engagement

• Forms previously built in isolation by service providers

• New forms co-produced

• Tools to support clinicians make decisions
Digitally Assembled Referral Toolkit (DART)

Specialties Referrals (A-Z)

General

The ‘general’ section is designed for referrals that do not have specific forms. The process automatically builds a referral based on your consultation notes. Blood results and a structured medical summary will be automatically appended to the referral form when assembled.

1. Medical referral  

2. Surgical referral

Specialties

3. Cardiology (LTH)  

4. Gynaecology (General and Urogynaecology)

5. Ear, Nose and Throat (ENT)  

6. Musculoskeletal (MSK) NEW

7. Rheumatology NEW  

8. Palliative Care NEW

IMPORTANT REMINDER: After completing clinical questions, please ALWAYS click 'SAVE FINAL VERSION'.

TASK SECRETARY  LAUNCH ERS  ADMIN STAFF  ASSEMBLE FORM  NOTIFY

Launch task  ERS (Choose & Book)  Assemble Form  Notify Referrer

Show recordings from other templates  Show empty recordings
Rheumatology Referral Form

Your consultation notes will be automatically inserted into the referral form when it is assembled. You therefore do not have to write an additional referral letter.

If you wish to add any other notes that are not already present in your consultation notes, please insert them in the additional information box below.

PLEASE NOTE:
- If your patient has confirmed diagnosis of a chronic pain syndrome (e.g. Fibromyalgia), consider referring to a pain clinic.
- If your patient only requires a joint injection, please consider referral to a minor surgery provider.

1 Please specify a clinic choice depending on the presenting complaint

- Early Arthritis
- General Rheumatology
- Connective Tissue Disease
- Spondyloarthropathy
- Polymyalgia Rheumatica

13 Additional Information (optional)
1. Please specify a clinic choice depending on the presenting complaint

- [ ] Early Arthritis
- [ ] General Rheumatology
- [ ] Connective Tissue Disease
- [ ] Spondyloarthritis
- [x] Polymyalgia Rheumatica

**Clinical Advice for Polymyalgia Rheumatica:**

Prior to referral decision please obtain CRP and refer to guidance on 1st line treatment below.
Screening tests to exclude common mimics: FBC, U&E, LFT, Ca, RF, anti-CCP antibody

**EXCLUSIONS:** Synovitis small joints / feet (Refer Early Arthritis), Headache, jaw pain, scalp tenderness (Follow LHP guidelines for headache), Transient visual loss (Refer to eye casualty or ophthalmology registrar on-call)

**Presenting Features:**
Age > 50, Bilateral shoulder (+A neck) aches and stiffness, worse in the morning, Acute phase response, Typically CRP > 10

First line treatment in primary care:
- If CRP <10 probably not PMR. Refer to M&K or physiotherapy
- If borderline consider repeat 1mth
- If CRP>10 and age>60 then try 12-20mg prednisolone daily for 2wks. If CRP normalises continue treatment in primary care and continue dose tapering as per BSR guidelines:

https://academic.oup.com/rheumatology/article/49/1/186/1789113

12. Please confirm your choice of 'Polymyalgia Rheumatica' Clinic

- [ ] Yes
- [ ] No
Musculoskeletal Referrals

Please choose body part?

- Hip
- Knee
- Foot
- Shoulder - Elbow
- Hand
- Spinal
- Not on Pathway / Other
Musculoskeletal Referrals

1. Please choose body part?
   - Hip
   - Knee
   - Foot
   - Shoulder - Elbow
   - Hand
   - Spinal
   - Not on Pathway / Other

2. What type of Hip Referral would you like to complete?
   - Hip Referral (standard)
   - Hip Replacement
   - Post Hip Replacement Referral

77. Is an interpreter required?
   - Yes
   - No

79. Click **yes** to reveal links to all the Hip Patient Information Leaflets
   - Yes

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**Lateral Hip Pain**

**Groin Strain**

**Osteoarthritis**

**Hip Replacement**

**Surgery for patients with a BMI > 35**
Patient Summary Record
(Please note this summary has been automatically assembled using coded information in the patient record)

Surgical pre operative summary information
Produced by Dr Robert Eastham during referral of patient for surgical opinion on 17 Feb 2018

<table>
<thead>
<tr>
<th>Patient Demographics</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Patient Name</strong></td>
<td>Miss Tilly Test</td>
</tr>
<tr>
<td><strong>Address</strong></td>
<td>19 Iron Stone Gardens, Leeds, West Yorkshire, LS12 6LH</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td>54 y</td>
</tr>
<tr>
<td><strong>NHS No.</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td>Female</td>
</tr>
<tr>
<td><strong>Email</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Ethnicity</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Main Language</strong></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Emergency Contacts</th>
<th>1st Contact (NOK)</th>
<th>2nd Contact (Carer)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Name</strong></td>
<td>Ms Jenny Test</td>
<td></td>
</tr>
<tr>
<td><strong>Address</strong></td>
<td>19 Iron Stone Gardens, Leeds LS12 6LH</td>
<td></td>
</tr>
<tr>
<td><strong>Home Tel</strong></td>
<td>011312345678</td>
<td>Daughter</td>
</tr>
<tr>
<td><strong>Mobile Tel</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Work Tel</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Details of any Anticoagulant/ Antiplatelet drugs issued in last 6 months

<table>
<thead>
<tr>
<th>Issued</th>
<th>Drug name</th>
<th>Dose</th>
<th>Quantity</th>
<th>Days duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>06 Nov 2017</td>
<td>Warfarin 1mg tablets</td>
<td>use as directed</td>
<td>28 tablet</td>
<td>28</td>
</tr>
<tr>
<td>13 Nov 2017</td>
<td>Warfarin 1mg tablets</td>
<td>use as directed</td>
<td>28 tablet</td>
<td>28</td>
</tr>
<tr>
<td>20 Nov 2017</td>
<td>Warfarin 1mg tablets</td>
<td>use as directed</td>
<td>28 tablet</td>
<td>28</td>
</tr>
<tr>
<td>Cardiovascular System</td>
<td>Yes</td>
<td>No</td>
<td>Latest Entry</td>
<td></td>
</tr>
<tr>
<td>--------------------------------------------------</td>
<td>-----</td>
<td>--------</td>
<td>-------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Angina</td>
<td>Yes</td>
<td></td>
<td>21 May 2017, Stable angina</td>
<td></td>
</tr>
<tr>
<td>Heart Attack</td>
<td>Yes</td>
<td></td>
<td>10 Nov 2017, Heart failure with reduced ejection fraction</td>
<td></td>
</tr>
<tr>
<td>Rhueamic/Scarlet Fever or Heart murmur</td>
<td>Yes</td>
<td></td>
<td>21 May 2017, Scarlet fever</td>
<td></td>
</tr>
<tr>
<td>Hypertension</td>
<td>Yes</td>
<td>No</td>
<td>21 May 2017, Essential hypertension</td>
<td></td>
</tr>
<tr>
<td>Hypotension</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FH Heart problems</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heart Surgery</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHD/IHD</td>
<td>Yes</td>
<td></td>
<td>21 Dec 2017, Posterior myocardial infarction NOS</td>
<td></td>
</tr>
<tr>
<td>Anticoagulants/Antiplatelets in last 12M</td>
<td>Yes</td>
<td></td>
<td>20 Nov 2017, Warfarin 1mg tablets</td>
<td></td>
</tr>
<tr>
<td>AF</td>
<td>Yes</td>
<td>No</td>
<td>21 May 2017, Atrial fibrillation</td>
<td></td>
</tr>
<tr>
<td>Pacemaker</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thrombosis</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respiratory System</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asthma/COPD/Emphysema</td>
<td>Yes</td>
<td></td>
<td>24 Aug 2016, Chronic obstructive lung disease</td>
<td></td>
</tr>
<tr>
<td>Persistent Cough</td>
<td></td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sleep breathing problem</td>
<td>Yes</td>
<td></td>
<td>21 May 2017, Obstructive sleep apnoea</td>
<td></td>
</tr>
<tr>
<td>Tracheostomy</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Requires oxygen at home</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>Yes</td>
<td></td>
<td>21 May 2017, Obstructive sleep apnoea</td>
<td></td>
</tr>
</tbody>
</table>
Thanks for listening

Conflict of interests: None

Contact: Dr Rob Eastham  Email: r.eastham@nhs.net