Supplementary Material

**Figure S1 Sociodemographic data collected from questioning participants**

1. Education: evaluated according to The Education classification of Ministry of Education and Science of the Republic of Lithuania
   - [ ] Employed
   - [ ] Unemployed due to:
     - a. Unemployment
     - b. Retirement
     - c. Student
     - d. Other

2. Employment before disease:
   - [ ] Employed
   - [ ] Unemployed due to:
     - a. Unemployment
     - b. Retirement
     - c. Student
     - d. Other

3. Marital status:
   - [ ] Married
   - [ ] Separated
   - [ ] Widow
   - [ ] Single
   - [ ] Other

4. Anamnesis of oncological diseases among 1st order relatives:
   - [ ] Yes
   - [ ] No
   1. Haematologic malignancies
   2. Other oncologic diseases

5. Anxiety and depression: evaluated according to HADS scale validated in Lithuania

**Figure S2 Questions about symptom evaluation, reasons for delay and other patient-related factors (gathered while questioning patients)**

1. Did you have any symptoms (connected with haematologic malignancy)?
   - [ ] YES
   - [ ] NO (skip to question 14)
   1. Temperature >38°C
   2. Weight loss:
      - [ ] a. How many kilograms per specific time interval? __________
   3. Night sweats
   4. Fatigue
   5. Lymphadenopathy
   6. Pruritus
   7. Discomfort in abdomen
   8. Easily occurring bleeding or bruises
   9. Pain in bones
   10. Other __________

2. When did you noticed first disease symptoms?

3. When did you first registered for a medical consultation due to these symptoms?

4. When was the first medical consultation?

11. Sometimes people put off going to see the doctor, could you say if any of these stop you from going to see the doctor?
   - [ ] No
   - [ ] Yes
   1. I was too embarrassed:
   2. I was too scared:
   3. I was worried about wasting the doctor’s time:
   4. My doctor is difficult to talk to:
   5. It is difficult to make an appointment with my doctor:
   6. I was too busy to make an appointment with my doctor:
   7. I had too many other things to worry about:
   8. It was difficult for me to arrange transport to see the doctor:
   9. My doctor is too difficult to talk to:
   10. I didn’t feel confident talking about my symptoms with the doctor:
   11. I didn’t have somebody to accompany me for a doctor visit:
   12. I thought that symptoms will disappear on their own:
   13. I thought that symptoms are occurring because of other disease (for example fatigue due to cold):
   14. I thought that symptoms are occurring because of non-medical condition (for example fatigue due to stress):
   15. Other __________

12. What do you think had the biggest impact on delaying registration for a doctor visit?

13. What do you think had the biggest influence on the time interval from registration to a first medical consultation?

14. What do you think had the biggest influence on the time interval between first medical consultation and correct diagnosis?

15. What do you think had the biggest impact on the time interval between correct diagnosis and treatment initiation?

16. Did you use any medication on your own in order to treat your symptoms before correct diagnosis?
   - [ ] Yes
   - [ ] No
Figure S3 Questions about health system related factors (gathered while questioning patients)

17. Which doctor you saw first due to haematologic malignancy symptoms? (if patient chose 2, 3, 4 or answer 5 go to question 19)
   1. General practitioner
   2. Emergency department doctor
   3. Specialist, but not haematologist
   4. Haematologist
   5. Other

18. Which specialist general practitioner referred you in the first place?
   1. Haematologist
   2. A few specialists – haematologist and another specialty doctor
   3. Non haematologist
   4. Other

19. Diagnosis suspected after first medical consultation?
   1. Oncologic diagnosis
   2. Other, non-malignant disease (for example infection)
   3. Symptoms administered to other disease diagnosed previously
   4. Other

20. Did the first doctor you consulted prescribe medicine for your condition?
   YES:                                                                                   NO
   1. Symptomatic treatment
   2. Treatment for another, non-malignant, disease
   3. Other

21. How many specialists you visited before correct diagnosis?

Figure S4 Data gathered from medical records

1. When was haematologic malignancy diagnosis confirmed? ________________________________
2. When was haematologic malignancy treatment started? ________________________________
3. Disease type: ☐ LYMPHOMA:  ☐ MULTIPLE MYELOMA:
   1. Hodgkin: Ann-Arbor stage __________  1. ISS stage __________
      2. Non-Hodgkin: aggressive or indolent (underline):
         Ann-Arbor stage __________
         Exact type ________________
   2. Non-Hodgkin: aggressive or indolent (underline):

4. Multiple myeloma complications at the time of diagnosis:
   ☐ YES:                                                                                   ☐ NO
   1. Hypercalcemia – serum calcium >0,25mmol/l (>1mg/dl) over upper normal value limit or >2,75mmol/l (>11mg/dl)
   2. Kidney insufficiency – creatinine clearance <40ml per min, serum creatinine >177mikromol/l (>2mg/dl)
   3. Bone lesions – one or more osteolytic bone lesion in rentgenography, CT, PET-CT
   4. Anemia – haemoglobin >20 g/l lower than normal value or < 100g/l
   5. Infectious diseases – 2 or more bacterial infections in 12 months

5. Gender: ☐ Male                                                                 ☐ Female
6. Age at the time of diagnosis: __________
7. Place of residence: ☐ City                                                                 ☐ Smaller village
   1. The biggest cities in Lithuania – Vilnius, Kaunas
   2. Other cities ________________
8. CIRS value: ________________
Figure S5 Lymphomas distribution according to disease stage (a) and NHL type (b).

HL – Hodgkin lymphoma; NHL – non Hodgkin lymphoma
Figure S6 The most important reasons for delay in A, B, C, D intervals according to participants

A interval
- 53 (53.0%): Symptom evaluation (e.g. thinking it will resolve on its own)
- 15 (15.0%): Registered instantly
- 12 (12.0%): Practical reasons (e.g. being busy)
- 81 (81.0%): Deny any reasons for delay, although A interval >30 days
- 4 (4.0%): Emotional reasons (e.g. fear of cancer diagnosis)

B interval
- 51 (51.0%): Did not wait long (<3 days)
- 39 (39.0%): Waiting time was around 7 days
- 12 (12.0%): Visited doctor for other health issues
- 8 (8.0%): GP canceled registration

C interval
- 31 (31.0%): According to patient diagnosis was established very quickly
- 13 (13.0%): Other specialists (not GP) treated another disease
- 13 (13.0%): GP did not take patients condition seriously
- 13 (13.0%): Technical difficulties, e.g. waiting time to see specialists
- 5 (5.0%): Patient did not come to a follow up visit for over a year
- 1 (1.0%): Visited many specialists without correct diagnosis suspected

D interval
- 81 (81.0%): Treatment started immediately
- 12 (12.0%): Had to wait a little for treatment initiation
- 5 (5.0%): Patient delayed treatment
- 2 (2.0%): Treatment delayed due to IVF appointment
Figure S7 MM and lymphomas diagnostic pathways

All participants, n = 100
(MM = 53, lymphoma = 47)

Firs consulted doctor –
GP, n=86
- Haematologist, n=11
- Oncologist, n=4
- Hospitalized, n=4
- Surgeon, n=2
- Nephrologist, n=1
- ENT, n=1
- Urologist, n=1

Oncologic diagnosis suspected, n=24
(MM=10, lymphoma=14)

Received symptomatic (n=14) or misleading (n=12) treatment

Second medical consultation:
- Haematologist, n=5
- Neurologist, n=1
- Hospitalized, n=1

First consulted doctor –
non GP, n=14:
- Hospitalized, n=8
- Surgeon, n=2
- Payed for first laboratory tests, n=2
- Neurologist, n=1

Oncologic diagnosis not suspected, n=7
(MM=6, lymphoma=1)

Received symptomatic (n=3) treatment

Second medical consultation:
- Haematologist, n=1
- Surgeon, n=1
- Infectologist, n=1
- Pulmonologist, n=1

Oncologic diagnosis suspected, n=7
- Haematologist, n=1
- Hospitalized, n=1

Second medical consultation:
- Hospitalized, n=8
- Surgeon, n=2
- Payed for first laboratory tests, n=2
- Neurologist, n=1

Oncologic diagnosis not suspected, n=62

Lymphoma (n=28) misdiagnosed for:
- Throat infection, n=4
- GI bleeding, n=4
- Anemia, n=3
- Pneumonia, n=3
- Bronchitis, n=2
- Dermatitis, n=2
- Did not have a preliminary diagnosis, n=2
- Unspecified infection, n=2
- Hernia, n=2
- GERD, n=1
- Thyroid gland dysfunction, n=1
- Radiculitis, n=1
- Psychiatric disorder, n=1

All participants, n = 100
(MM = 53, lymphoma = 47)

First consulted doctor –
GP, n=86
- Haematologist, n=11
- Oncologist, n=4
- Hospitalized, n=4
- Surgeon, n=2
- Nephrologist, n=1
- ENT, n=1
- Urologist, n=1

Oncologic diagnosis suspected, n=24
(MM=10, lymphoma=14)

Received symptomatic (n=2) or misleading (n=12) treatment

Second medical consultation:
- Haematologist, n=1
- Hospitalized, n=2
- Urologist, n=1

Oncologic diagnosis not suspected, n=62

MM (n=34) misdiagnosed for:
- Radiculitis, n=11
- Osteoporosis/osteochondritis/arthritis, n=4
- Pneumonia, n=3
- Did not have preliminary diagnosis, n=3
- Anemia, n=2
- Kidney disease, n=2
- Traumatic injury, n=2
- GI/unspecified bleeding, n=2
- Narrowing of head vessels, n=1
- Unspecified infection, n=1
- Hernia, n=1
- Intercostal neuralgia, n=1
- Psychiatric disorder, n=1

Both consultation:
- ENT, n=1
- Hospitalized, n=1
- Haematologist, n=1
- Surgeon, n=1
- Infectologist, n=1
- Pulmonologist, n=1

Lymphoma (n=28) misdiagnosed for:
- Throat infection, n=4
- GI bleeding, n=4
- Anemia, n=3
- Pneumonia, n=3
- Bronchitis, n=2
- Dermatitis, n=2
- Did not have a preliminary diagnosis, n=2
- Unspecified infection, n=2
- Hernia, n=2
- GERD, n=1
- Thyroid gland dysfunction, n=1
- Radiculitis, n=1
- Psychiatric disorder, n=1

Second medical consultation:
- ENT, n=1
- Hospitalized, n=2
- Haematologist, n=1

Lymphoma (n=4) misdiagnosed for:
- Bronchitis, n=1
- Unspecified infection, n=1
- Hernia, n=1
- Crohn’s disease, n=1

Second medical consultation:
- Haematologist, n=5
- Surgeon, n=1
- Infectologist, n=1
- Pulmonologist, n=1

Received symptomatic (n=1) or misleading (n=3) treatment

Second medical consultation:
- ENT, n=1
- Hospitalized, n=1
- Surgeon, n=1
- Did not get a referral to any specialist, n=3
- Pulmonologist, n=2
- Gastroenterologist, n=2
- Haematologist, n=2
- Dermatologist, n=1
- Neurologist, n=1
- Gynecologist, n=1
- Infectologist, n=1
- Endocrinologist, n=1
- Traumatologist, n=1

Second medical consultation:
- Hospitalized, n=1
- Surgeon, n=1
- Nephrologist, n=1
- ENT, n=1
- Urologist, n=1
- Nephrologist, n=1
- Traumatologist, n=1
Figure S8 Number of patients for 1 PCP (primary care physician – including GPs and general pediatricians), in Lithuanian counties and biggest cities

- Bolded – number of patients for 1 PCP in the biggest city in the county
- no bold – number of patients for 1 PCP in the remaining county area